The Comprehensive SCHOOL HEALTH MANUAL

Revised 2007

Massachusetts Department of Public Health

Deval L. Patrick
Governor of Massachusetts

Timothy P. Murphy
Lieutenant Governor

JudyAnn Bigby, M.D.
Secretary
Executive Office of Health and Human Services

John M. Auerbach
Commissioner
Massachusetts Department of Public Health

Sally Fogerty, B.S.N., M.Ed.
Associate Commissioner
Center for Community Health
Massachusetts Department of Public Health

Anne H. Sheetz, R.N., M.P.H., C.N.A.A.
Director
School Health Services
Massachusetts Department of Public Health

Massachusetts Department of Public Health
School Health Services
250 Washington Street – 5th Floor
Boston, MA 02108

2007

© The Massachusetts Department of Public Health (MDPH) grants permission to copy these materials for noncommercial educational use only, provided credit is given to the MDPH. Modification of content is permitted only with prior approval of the MDPH School Health Unit.

The Commonwealth of Massachusetts
Executive Office of Health and Human Services
Department of Public Health
250 Washington Street, Boston, MA 02108-4619

DEVAL L. PATRICK
GOVERNOR

TIMOTHY P. MURRAY
LIEUTENANT GOVERNOR

JUDYANN BIGBY, MD
SECRETARY

JOHN AUERBACH
COMMISSIONER

Fall 2007

Dear Principal:
We are pleased to present this new revision of **The Comprehensive School Health Manual**, which encompasses current, practical health information and resources for students and staff in the Commonwealth's schools. Since its original publication in 1995, the health needs of students have increased in number and complexity, representing major challenges in the educational setting. To address these challenges, the Massachusetts Department of Public Health assumed leadership in revising the manual, while collaborating closely with the Massachusetts Department of Education. Our joint effort demonstrates an understanding that educational achievement and health are closely related.

To better serve the needs of those who use the manual, the second edition appears in multiple formats, including CD Rom and both PDF and word versions on the Internet. The manual is designed for use by school administrators, school nurses and other health personnel, teachers, and the many others who are developing school health programs that encompass the nine interactive components of coordinated school health: health services, health education, family and consumer science education, physical education, nutrition services, counseling and psychological services, healthy school environment, health promotion for staff, and parent/community involvement. It addresses the changing issues in school health, provides guidelines for acceptable practice and policy development, and facilitates the orientation of new staff.

To ensure that the manual is used effectively, you may choose to provide your staff with an orientation to its contents, ensure that all personnel know where the manual may be found, and regularly reinforce its concepts of a comprehensive, coordinated approach. Staff members of both the Department of Public Health and the Department of Education are available to provide additional assistance at your request.

We wish to thank you for your continued leadership in supporting the educational achievement *and health* of all the Commonwealth's students.

Sincerely,

John Auerbach
Commissioner of Public Health

David P. Driscoll
Commissioner of Education

Deval L. Patrick
Governor of Massachusetts

Timothy P. Murphy
Lieutenant Governor

JudyAnn Bigby, M.D.
Secretary
Executive Office of Health and Human Services

John Auerbach
Commissioner
Massachusetts Department of Public Health

Sally Fogerty, B.S.N., M.Ed.
Associate Commissioner
Center for Community Health
Massachusetts Department of Public Health

Anne H. Sheetz, R.N., M.P.H., C.N.A.A.
Director
School Health Services
Massachusetts Department of Public Health

Massachusetts Department of Public Health
School Health Services
250 Washington Street – 5th Floor
Boston, MA 02108

2007

© The Massachusetts Department of Public Health (MDPH) grants permission to copy these materials for noncommercial educational use only, provided credit is given to the MDPH. Modification of content is permitted only with prior approval of the MDPH School Health Unit.

The Comprehensive School Health Manual

SENIOR EDITORS

Anne H. Sheetz, RN, MPH, CNAA
Massachusetts Department of Public Health
Boston, Massachusetts

Irene F. Goodman, EdD
Goodman Research Group, Inc.
Cambridge, Massachusetts

EDITORS
Thomas Comerford
Sally Fogerty
Diane M. Gorak
Massachusetts Department of Public Health

Joanne Kelleher
Kimberley Rylander
Goodman Research Group, Inc.

CONTRIBUTING EDITORS
Kathleen Atkinson
Mary Ann Gapinski
Gail Lopez
Barbara Mackey
C. Lynne McIntyre
Massachusetts Department of Public Health

John L. G. Bynoe, III
Massachusetts Department of Education

Kathryn Franich
Roger M. Goodman
Deborah Kreuze
Christine Pier
Goodman Research Group, Inc.

PRODUCTION ASSISTANCE
Janet Burke
Massachusetts Department of Public Health

Stefanie Archer, Dana S. Brown, Nina Grant, and Katherine Rich
Goodman Research Group, Inc.

DESIGN
Frank Verni

Acknowledgments

The revised Comprehensive School Health Manual was partially supported by the Bureau of Maternal and Child Health, U.S. Department of Health and Human Services. The revision of the manual involved the extensive efforts, expertise, advice, and substantive writing and reviewing of various sections and chapters by the many individuals in the Massachusetts Department of Public Health, the Massachusetts Department of Education, and other organizations. We offer them our heartfelt thanks for their help in completing this revised manual.

We commend the team at Goodman Research Group, Inc. (GRG), who provided overall project management and coordination, who oversaw and guided the many stages of writing, editing, and copy editing, and who collaborated with their designer to convert the final versions of each chapter and section into a high quality, user-friendly CD with sophisticated search and navigation capabilities. GRG contributors include Stefanie Archer, Jennifer Beck, Dana S. Brown, Ruth Cross, Kathryn Franich, Irene F. Goodman, Roger M. Goodman, Nina Grant, Deborah Kreuze, Christine Pier, Katherine Rich, Kimberley Rylander, and Frank Verni. In particular we wish to thank Joanne Kelleher for organizing the earliest stages of the revision process; drafting, revising, and finalizing sections and chapters; and collaborating with the many writers to ensure a quality product.

We wish to especially acknowledge the Department of Public Health administrators and staff — Anne H. Sheetz, Director of School Health Services; Kathleen Atkinson, Assistant Commissioner for Policy and Planning; Sally Fogerty, Associate Commissioner, Center for Community Health; Donna E. Johnson, Director, Division of Primary Care and Health Access; Diane M. Gorak, School Health Advisor; Thomas Comerford, School Health Administrator; Jessica Cates, Program and Policy Analyst; and Howard Saxner, Esq., Deputy General Legal Counsel — and the Department of Education Associate Commissioner, John L. G. Bynoe, III — for their review, comments, and assistance in processing the manual to completion.

Following is a long list of individuals who contributed to the manual through reading, revising, or reviewing chapters. Every attempt has been made to recognize all contributors. We regret any omissions that may have occurred.

Massachusetts Department of Public Health

Emily A. Ackiss, MPH
Jennings Aske, JD
Darcy Bacall, BSN, RN, CDE
Martha Badger, RN, BSN (Retired)
Janet Berkenfield
Thomas Bertrand, MPH
Maria F. Bettencourt, MPH, LDN
Mark Boldt, MS
Michael Botticelli, MEd
Sandra Broughton, MHA
Janet Burke
Cheryl Bushnell, MS, RN
Fredric Cantor, DVM, MPH
Connie Carroll, RN, MPH
Jessica Cates, MSSW
Gino Chisari, MSN, RN
Jennifer Cochran, MPH
Rachel Colchamiro, MPH, RD, CLC
Thomas Comerford, MS
Suzanne K. Condon, BS, MS
Kevin Cranston, MDiv
Deborah A. Croucher, RN, BSN
Patricia R. Daly, MSN, RNC
Letitia Davis, ScD
Alfred DeMaria, Jr., MD
Marci Diamond, MPA

Massachusetts Department of Public Health (cont.)

Bill Dumas, RN
Sue Etkind, RN, MS
Michael A. Feeney, RPh, JD, CHO
Rebecca Feinstein Winitzer, MS, MSW, LicSW
Stephen Fleming, EdM
Kathy Foell, RD, MS
Sally Fogerty, BSN, MEd
Mary Foley, RDH, MPH
Maureen Foley, MPH, RN
Marion Freedman-Gurspan, MSW, LicSW
Mary Ann Gapinski, RN, MSN, NCSN
Kathleen Gilmore, MEd
Daksha Gopal, MPH
Diane M. Gorak, RN, BSN, MEd
Suzanne Gottlieb, BA
Holly Hackman, MD, MPH
Gillian Haney, MPH
Nancy Harrington, BA
Patricia Henley, MEd
Kathleen Herr-Zaya, BSN, MSEd, PhD
Alan Holmlund
Jocelyn Isadore, MPH
Donna E. Johnson, MSW
Patricia Kludt, MPH
Jo-Ann Kwass, MDiv, MS
Donna Lazorik, RN, MS
Robert Leibowitz, PhD
Susan M. Lett, MD, MPH
Gail Lopez, RN, MS
Samuel Louis, MPH
Kristin Lyons, LicSW
Nancy Lyons
Valerie Machinist, MS, RD
Barbara Mackey, MS, APRN-BC
Neetu Manjunath
Bela T. Matyas, MD, MPH
C. Lynne McIntyre, RN, PhD
Tracy A. Miller, JD
Marie O'Donnell
Carlene Pavlos
Beatriz Pazos Vautin
Cynthia Rodgers, MSPH
Nicole Roos, MBA
Jorge Sanchez, MEd
Kafi N. Sanders, MPH
Howard Saxner, Esq
Stephanie Schauer, PhD
Xanthi M. Scrimgeour, MHEd, CHES
Marva Seifert, MPH
Anne Sheetz, RN, MPH, CNAA
Linda Singleton, RN, MPH
Eileen M. Sullivan, MS, MEd
Cynthia Taft Bayerl, RD, MS, LDN
Pejman Talebian, MA, MPH
Monique Thompson
Brunilda Torres, LicSW
Lora Wooster
Michelle Zbell, MA

Massachusetts Department of Education

Holly Alperin, EdM, CHES
John L. G. Bynoe, III
Peter D. Cirioni
Anne Gilligan, MPH
Carol Goodenow, PhD
Robin Haunton, MEd
Elizabeth Keliher
Susan Maher, PhD
Katie Millett, LDN
Marcia Mittnacht
Rhoda E. Schneider
Christanne Smith Harrison, MPH, RD
Jane Stoleroff, MA

Others

Joanne Aguiar, RN, BSN
Plymouth Public Schools

Tina Alu
Cambridge Economic Opportunity Committee, Inc.

Susan Aries, RN
Newton Public Schools

Susan A. Baker
Provincetown Public Schools

Peggy Brkic
Planned Parenthood League of MA

Marcia Buckminster, RN, CS, PNP, SNP
Framingham Public Schools

Bill Burke
Burke's Special Products

Margaret Burton, RN, CS, MS, FNP
Lawrence Public Schools

Roberta Cobbett, RN, BSN, NCSN
Swampscott Public Schools

Catherine Crosby-Norton, RN, BSN
Plymouth Public Schools

Marie DeSisto, RN, BSN, MSN
Waltham Public Schools

Deborah Dill, MSN, WHNP
ABCD/Boston Family Planning

Mary Lou Donohue, RN
East Longmeadow Public Schools

Cindy Dourmashkin, RN, BSN
Northampton Public Schools

S. Jean Emans, MD
Children's Hospital Boston

Ann Farrell, RN, MS, MEd
Nashoba Regional Schools

Jane Franks, RN, BSN, MBA
Lexington Public Schools

Linda Garrity, RN, MEd, NCSN
Brimmer and May School

Linda Grant, MD, MPH
Boston Public Schools

Marilyn Grifoni Belmonte, BA
Drug Abuse Recognition Programs

Celine Hardy, RN, BSN, NCSN
Sandwich Public Schools

Gretchen Herrick, RN, BSN
Ashland High School

David B. Hiltz, NREMT-P
American Heart Association

Debra A. Kane, MA, CCC-A
Willie Ross School for the Deaf

Joanne Kelleher, BS
Goodman Research Group, Inc.

Jane Kisielius, RN, MS
Quincy Public Schools

Cathryn R. Lyman, RN, BSN (Deceased)
Westborough Public Schools

Carole MacKenzie, RN, BSN, MEd
Faulkner Hospital

Marjorie McEttrick-Maloney, RN, BSN, MPA/H, NCSN
Plymouth Public Schools

Marion S. McEwan, BSN, MS, RN
Children's Hospital Boston

Kym Meyer, MS, CCC-A
The Learning Center for Deaf Children

Elizabeth Miller, MD, PhD
MGH Revere Health Center

Joseph P. O'Brien
National Scoliosis Foundation

Rita Olans, MSN, CPNP, RN, CS
MGH-Revere Healtcare Center

Carol Anne O'Leary, RNCS, PNP
Anna May Powers Health Center

Katherine O'Neill, RN, BSN, MS
Boston College, Connell School of Nursing

Angela Patterson, MSN, APRN, BC, FNP
Simmons College

Sylvia B. Perlman, PhD
DMA Health Strategies

Others (cont.)

Carol Podolsky, MD
Newton Public Schools

Stephanie Porter, MSN, RN
Children's Hospital Medical Center

Ruth Price
Consultant

Anne Prinn, RN, MS
Wellesley Public Schools

Jean E. Ramsey, MD
Boston Medical Center

Patricia Rissmiller, RN, DNSC, C-PNP
Simmons College

Joan Scheid, RN, BSN
Clinton Public Schools

Ronald Siegel, PsyD
Cambridge Youth Guidance Center

Katie Vozeolas, BSN, NCSN
North Andover Public Schools

Linda Walsh, RN, BSN
Newton Public Schools

Barbara Westwood, RN, BSN, MEd
Central Berkshire Public Schools

Douglas R. White, Jr., BA, MEd
Plymouth Public Schools

Introduction

Purpose of This Manual
Who Should Use This Manual
How to Use This Manual
Updating the Manual

INTRODUCTION

The Massachusetts Department of Public Health (DPH) is proud to present an updated and revised edition of the Comprehensive School Health Manual.

Prepared in collaboration with the Massachusetts Department of Education (DOE) and with input from experts in many aspects of child and adolescent health, including Massachusetts school nurses and nurse leaders, at the time of publication, this second edition incorporates the most complete and up-to-date information on the policy and practice of school health in the Commonwealth.

For slightly more than a decade, the first edition of this manual, published in 1995, has served as a trusted source of basic prevention and treatment information, regulatory information, guidelines, recommendations, and resources. DPH produced this second edition to document the many changes that have taken place in the intervening years, including:

- newly identified health risks;
- formerly small-scale health issues that have assumed much larger proportions;
- fresh research-based perspectives on prevention and treatment;
- medical advances that have brought many more seriously ill and technology-dependent students into the classroom;
- new regulations and guidance documents that address a variety of issues, including the environmental health threat posed by idling school buses, the confidentiality of student health records in an increasingly computerized environment, and acceptable policies regarding a la carte food in the school setting;
- considerable progress in the development and evaluation of science-based health education and risk-prevention curricula; and
- the movement of school health programs toward comprehensive health education and expanded services, serving as the hub of a support network that includes families, primary care providers, and community public health and safety professionals.

The updated Comprehensive School Health Manual addresses a host of new physical and mental health issues facing schools today, such as overweight prevention, food allergies, skin cancer prevention, abuse of prescription drugs and inhalants, gambling addiction, and self-injurious behaviors. It takes into account the ways in which schools and society have changed in recent years, providing, for example, information and resources on emergency response planning for incidents of student violence and bioterrorism. It reflects the latest research on risk prevention, health promotion, and the school's evolving public health mission.

The current edition of the manual is being published as a searchable CD in PDF format. The decision to employ this medium was based on a number of considerations: the fact that computer technology is present in most schools and school health facilities; the likelihood that the greatly expanded content of this edition, which includes many new topics and considerably more extensive resources and references, would prove cumbersome for many users in hard-copy format; and the ability to combine rapid search capability on a CD with clickable links. The manual is also available online.

Purpose of This Manual

This purpose of this manual is to assist schools with the complex mission of providing a safe, healthy, and health-promoting environment in which to learn. The ways in which it seeks to do this include:

- increasing awareness of current health issues affecting the Commonwealth's children and adolescents and of the need to develop strategies to address those issues in the school setting;
- providing guidelines for primary prevention and protocols for screening and assessment;
- serving as a guide for appropriate and acceptable practice on issues relating to the health of students;
- explaining current professional standards for school nurses and other school health personnel;
- offering basic treatment information for a range of health conditions that may arise in the school environment;
- providing a guide for the formulation of local school health policies and programs;
- providing sample materials that can be used to communicate with parents/guardians;
- linking users to a wealth of local and national resources that may be tapped for additional information on specific health issues, program and policy development assistance, screening and assessment tools, health promotion materials, evidence-based health curricula, and professional development; and
- providing a tool for orientation of new school personnel.

Who Should Use This Manual

This manual contains information useful for anyone who strives to promote the health of children and adolescents through preventive, proactive, and relevant school health programs. This includes:

- school health services personnel, such as nurses, nurse practitioners, physicians, school-based health center staff, school health aides, and health educators;
- school administrators, such as superintendents, assistant superintendents, principals, vice principals, and unit directors;
- learning support staff, such as guidance counselors, adjustment counselors, school psychologists, and other mental health professionals;
- teachers and classroom aides;
- foodservice staff;
- support staff such as secretaries and custodians;
- parents/guardians and family advocates;
- any community participant who provides health services or health education in the schools;
- local school committees;
- local boards of health and other public health and safety officials within the community; and
- students, when appropriate.

The success of a school health program depends in large part on good administrative structure and leadership, with assistance from a variety of other key individuals within the school and the community. Although school administrators are ultimately responsible for the success of the school health program, a team approach is most effective in the planning and management of health services. A typical team includes, but is not limited to, the nurse leader, health coordinator, school nurse, principal and other administrators, school physician, health educator, student support service staff, and classroom teachers.

How to Use This Manual

DPH recommends placing this manual — either as a CD loaded on a computer terminal or as a hard-copy printout — in a location in each school that is easily accessed by any member of the school staff, as well as parents/guardians or other visitors. The manual may be introduced to staff at an in-service session. DPH suggests that all school personnel familiarize themselves with the manual's content by perusing it in its entirety at least once. Later, when information on specific topics is required, the manual can serve as a convenient reference.

The manual has been organized into four major sections:

I. The School's Role in Child and Adolescent Health
New challenges and opportunities in school health, development of an effective school health program, appropriate school health curricula, and a safe and healthful environment.

II. School Health Services
Health assessment, nursing practice in the school setting, care of children with special health care needs, and infectious disease control.

III. Prevention and Health Promotion
Nutritional health, physical fitness and sports, mental health, reproductive health, injury and violence prevention, substance abuse and addiction prevention, oral health, and health issues of newcomers to this country.

IV. Index
A comprehensive and detailed index to all content.

Each chapter is organized into four components: 1) text; 2) resources (i.e., addresses, phone/fax numbers, and websites for agencies and organizations that can provide additional information or materials); 3) bibliographic references; and 4) exhibits. Exhibits consist of protocols and guidelines, sample policies, sample letters, handouts, fact sheets, charts, and other helpful material. They are designed for schools to photocopy or adapt according to their specific needs.

Updating the Manual

DPH recognizes that school health programs are evolving as the health needs of children, adolescents, and their families change. To facilitate rapid, ongoing access to new information, the contents of this manual, along with any informational, policy, and forms updates, are available on the Web. To access the manual and updates online, visit the School Health Manual website at http://www.maclearinghouse.com/schoolhealthmanual.htm.

DPH looks forward to an ongoing partnership with schools in promoting the health of children, adolescents, their families, and the communities in which they live. We welcome feedback on the usefulness of the manual, suggestions for additional content, and ideas for further distribution. Please send your feedback to: School Health Services, Bureau of Family and Community Health, MDPH, 250 Washington Street, Boston, MA 02108.

MDPH School Health Manual

Table of Contents

Section I: The School's Role in Child and Adolescent Health

Chapter 1: Challenges and Opportunities in School Health

Chapter 2: Developing an Effective School Health Program

Chapter 3: School Health Curriculum

Chapter 4: Safe and Healthful Environment

Section II: School Health Services

Chapter 5: Health Assessment

Chapter 6: Nursing Practice in the School Setting

Chapter 7: Children with Special Health Care Needs

Chapter 8: Infectious Disease Control

Section III: Prevention and Health Promotion

Chapter 9: Nutritional Health

Chapter 10: Physical Fitness

Chapter 11: Mental Health

Chapter 12: Sexuality and Reproductive Health

Chapter 13: Injury and Violence Prevention

Chapter 14: Alcohol, Tobacco and Other Drugs

Chapter 15: Oral Health

Chapter 16: Refugee and Immigrant Health

Section I

THE SCHOOL'S ROLE IN CHILD AND ADOLESCENT HEALTH

Emerging research findings as well as larger societal trends have been challenging schools to embrace an ever more active and expansive role in health promotion and health service delivery. Section I addresses this challenge. Covering the three general components of school health — health services, health education, and a healthy school environment — this section describes how to design school health programs to meet the ongoing and emerging health needs of young people, how to assess the particular needs of an individual school and community, and how to enhance program effectiveness by coordinating all program elements to support healthy lifestyles and behaviors.

Chapter 1: New Dimensions of School Health analyzes the evolving and expanding expectations for the role of school health. Escalating levels of overweight, childhood asthma, and type 2 diabetes and the presence of many more medically fragile individuals within the student population are placing unprecedented demands on school health programs. In response to these challenges, and in keeping with current public health practice, school health programs are becoming much more proactive, emphasizing preventive health promotion, care management, early risk identification and referral, and a comprehensive, coordinated approach to health care. Increasingly, comprehensive school health programs are built on a foundation of close collaborative partnerships among school health and human services personnel, teachers, and administrators and external health care providers, families, and the community.

Chapter 2: Developing an Effective School Health Program provides practical administrative guidance for schools on developing and/or improving their comprehensive school health programs, with a particular focus on the school health service program. Methods for performing a student health needs assessment and establishing a school health advisory committee are explained. The importance of meeting certain qualifications for various personnel, establishing clear role distinctions, and performing health program evaluations is described, as are basics of emergency response and formulation of an emergency response plan. Recommendations are made for policies and procedures regarding collection of health data and electronic records management. This chapter contains a large number of sample forms, position descriptions, and policies.

Chapter 3: Comprehensive School Health Education identifies sound principles for health education, pre-kindergarten to 12th grade, and provides content standards for a comprehensive school health curriculum. The chapter provides guidance for schools on where to locate professionally developed, thoroughly evaluated, and effective curricula and how best to go about selecting and integrating these programs. It also suggests the most appropriate personnel to include in the team or work group assembled for this purpose.

Chapter 4: A Safe and Healthful Environment addresses the impact of the school's physical environment on learning and on the general health and well-being of students and staff. The chapter presents a range of indoor health issues including space, air quality, storage and handling of hazardous materials, and cleanliness, along with related standards and regulations. Outdoor safety issues, building security, and disaster/terrorism planning are also covered. The numerous government agencies with responsibilities for the various aspects of the school environment are identified.

Section II

SCHOOL HEALTH SERVICES

Basic school health services include several of the areas in which school health is experiencing its greatest role redefinition: health assessments (both population-based and individual), care of children with special health care needs, and management of communicable diseases. Because the school nurse is usually the manager of the school health service program, basic health services generally fall within her or his purview. Section II provides guidelines for these services while emphasizing that school nurses, like their colleagues in other health care settings, are licensed by the Board of Registration in Nursing; hence school nursing practice must be consistent with the board's statutes and regulations.

Chapter 5: Health Assessment identifies and describes assessments, physical examinations, and screenings required by statute or regulation and offers the most current guidelines and protocols for implementation. It also includes guidelines for nursing assessment of common illnesses presented by students in the school setting, emphasizing the opportunity the nurse has in individual student health encounters to assess a student's health status and risks — particularly important when children lack primary care providers and/or are uninsured or underinsured.

Chapter 6: Nursing Practice in the School Setting summarizes standards of school nursing practice as developed by national professional organizations, as well as the requirements for initial and professional licensure by the Massachusetts Department of Education. DPH recommendations to school nurses regarding ongoing professional development and networking with peers are described, as are Massachusetts Board of Registration in Nursing standards and regulations relevant to nursing practice in the school setting. Specific attention is paid to delegation of duties to unlicensed personnel and administration of medications in school.

Chapter 7: Students Requiring Specialized Health Services describes the importance of planning for the care of children with special health care needs, as they are becoming an ever-larger proportion of the school population. The chapter describes the four major laws that define the accommodations, instruction, and services such children are entitled to receive in school: the Individuals with Disabilities Education Act (IDEA); Section 504 of the Rehabilitation Act of 1973; the Americans with Disabilities Act of 1990 (ADA); and Massachusetts Special Education Law and Regulations. Guidelines are provided for developing and implementing individual health care plans (IHCPs), individualized education plans (IEPs), and school policies on the care of children with Do Not Resuscitate/Comfort Care (DNR/CC) orders. Detailed information is provided on several specific chronic health conditions commonly found in the school setting, including life-threatening allergies to certain foods and to latex.

Chapter 8: Infectious Disease Control is designed to assist school personnel in managing infectious diseases, including ensuring that students are appropriately immunized and preventing the spread of any infectious diseases that arise. It provides a detailed and comprehensive description of the communicable diseases that school health service programs encounter, as well as guidelines for school attendance and parent notification. Elements of school planning for an infectious disease emergency and bioterrorism are also discussed.

Section III

PREVENTION AND HEALTH PROMOTION

School health programs in Massachusetts and across the country are increasing their emphasis on early prevention, concentrating greater attention on health education and promotion programs for the general population that aim to instill healthy habits and reduce the likelihood of risk behaviors among children from the earliest grades. Simultaneously, health and mental health screenings are helping to identify at-risk children and adolescents so that they can be referred for health services, educational assistance, or behavioral support services before problems materialize.

Section III concentrates on those areas of health concern in which prevention and health promotion are a central goal.

Chapter 9: Nutritional Health discusses ways schools can encourage healthy nutritional habits and protect students from overweight and associated serious health conditions. Strategies covered include nutrition education, encouragement of healthy food choices, and securing the involvement of the entire school staff, parents/guardians, and community partners. Nutritional needs of the general student population and of particular groups with special requirements are presented, as are strategies for dealing with common nutritional issues affecting children and adolescents, such as eating disorders, food allergies, and lactose intolerance. Sample guidelines, policies, and tools and a resource list of curricula and teaching materials are included.

Chapter 10: Physical Fitness and Sports outlines how schools can promote regular physical activity, which helps children and adolescents maintain healthy weight, build muscle strength and bone mass, and maintain cardio-respiratory health, as well as reduce anxiety and stress, build self-esteem, and learn more effectively. Strategies covered include educating students about the importance of physical activity to lifelong health; providing high-quality, safe, and inclusive physical education and sports programs; and working with families and community groups to make exercise attractive and accessible. To assist schools in developing effective physical education and sports programs, the chapter includes a variety of sample policies and policy development tools, curriculum assessment tools, and fitness assessment instruments. Also discussed are steps that schools should take to ensure the safety of students engaging in physical education and sports.

Chapter 11: Mental Health describes a major need for mental health services for school-age youth nationwide and outlines how schools can play a key role in constructing an active continuum of care, built on school-based assessment, intervention, and support teams, and reinforced by partnerships with families, community mental health resources, local social service providers, and others. The chapter discusses techniques for screening and identification, intervention and referral, and follow-up. It also provides detailed information on common stressors that may put children and adolescents at greater risk for emotional difficulties and examines how some common psychological problems manifest in school-age youth. Suggestions regarding school-based interventions are included.

Chapter 12: Reproductive Health discusses the importance of reproductive health education in the school setting, providing an overview of sexuality education as well as guidance for developing a program that suits the needs of the community, parents, families, and students. The chapter describes sexual development and gives recommendations for physical examinations. Prevention of adolescent pregnancy and STDs are discussed, as are other issues surrounding adolescent pregnancy, cultural diversity, sexual orientation, and sexual abuse and sexual assault.

Chapter 13: Injury and Violence Prevention examines the varieties of unintentional and intentional injuries for which children and adolescents are at risk, as well as measures that schools can take to prevent or reduce these injuries. The chapter emphasizes the importance of a comprehensive program of education that begins in the earliest grades to instill safety principles, social skills, and concepts such as tolerance and continues with age-appropriate content through grade 12. Other prevention strategies covered include evaluation of the safety of the environment; development and enforcement of safety regulations; awareness among school staff, students, parents/guardians, and others in the community of the signs of potential injury or violence; and establishment of clear processes for reporting injuries and violence. The chapter also includes laws and regulations related to the types of injuries discussed and to the responsibilities of schools and school personnel.

Chapter 14: Substance Abuse and Addictive Behavior discusses the school's role in addressing and preventing substance use and problem gambling among underage youth. It discusses the particular vulnerability of adolescents to engaging in risky behaviors and to developing addictions, and emphasizes the importance of reiterating prevention messages at every grade, Kindergarten through 12th. Effective educational approaches, development and enforcement of school policies, and relevant laws, rules, and standards are covered. Signs and symptoms of various types of substance use are described, and screening protocols and information about treatment options and school reentry support are provided.

Chapter 15: Oral Health describes the important role schools play in promoting oral health. Prevalence of dental and oral disease is discussed, as are oral health promotion, prevention, and education and school-based dental screening. Injury prevention, the risks of oral piercing, and dental first aid are also covered, as well as a detailed list of emergency supplies that should be kept in the school health office.

Chapter 16: Refugee and Immigrant Health Care provides information about health issues frequently seen among children and adolescents in newcomer populations. It discusses factors that may impede newcomers' access to health care information and services and emphasizes the importance of sensitivity to newcomers' customs, health beliefs, practices, and family roles. Strategies for cultural assessment and a variety of resources to help school personnel with transcultural interactions are provided.

Chapter 1

NEW DIMENSIONS OF SCHOOL HEALTH

Societal Changes Affect the Role of Health Programs

Healthy People 2010 Objectives Related to School Health

Massachusetts Coordinated School Health Model

Expansion of Massachusetts School Health Services

The Role of the School Nurse

Ongoing Challenges of School Nursing and School Health Services

Summary

Resources: Massachusetts Agencies and Organizations

Resources: National Agencies and Organizations

Resources: Regional Agencies and Organizations

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 1

NEW DIMENSIONS OF SCHOOL HEALTH

Schools have a unique opportunity to influence students' health and educational achievement, due to the simple fact that schools are where young people spend the majority of each weekday for 9 to 10 months of the year. In Massachusetts, over 1 million students participate in classrooms and after-school activities. Moreover, the school is a microcosm of the health issues that are occurring within each individual community. For instance, if tobacco use or overweight is an issue in the general population, it will be demonstrated in the school population. If a community response is effective in the general population, it may also show positive outcomes in the school population. As such, school health programs are essential to education and must continue to be integrated into the larger community and its health care delivery system serving children.

School-based health services and health education complement and support the school's academic mission while promoting and improving students' health. The concepts behind school health programs are not new. For almost 150 years, Massachusetts has recognized the importance of health to education and the critical role of school health programs. Exhibit 1-1, Milestones in Massachusetts School Health, outlines the history of the Commonwealth's response to the growing needs of a changing society. It includes innovations such as the introduction of health inspections in the 1890s, the publication of *The Handbook on School Hygiene* in 1930, the first Massachusetts school-based health center in the 1980s, the Education Reform Act requiring school nurse licensure in 1993, and the publication of the first edition of the Massachusetts *Comprehensive School Health Manual* in 1995.

In this new millennium, school health programs are experiencing unprecedented challenges and opportunities for nurturing the education, health, and well-being of students and their families. Changing societal norms and escalating needs, as well as expanding knowledge in the field, require that school health programs continue to evolve. Expectations of the school's role in the lives and health of children and their families have expanded in many ways during the decade since the previous edition of the *Massachusetts Comprehensive School Health Manual* was published. Many educators, medical care providers, public health officials, policy makers, and advocates for children have noted that school health programs are a key component of the safety net for the nation's children, and that the quality of those programs is a key factor in the educational achievement and lifelong health of students.

The Massachusetts Department of Public Health (DPH) continues to develop and implement high quality, coordinated school health programs in communities throughout Massachusetts. DPH has assumed leadership in developing these programs aimed at responding to societal needs and supporting educational achievement. As a public agency, DPH's work includes promoting local system-building capacity to enhance the health status of all children, youth, and their families in the Commonwealth. The Department's mission supports these efforts and states:

- We believe in the power of prevention.
- We work to help all people reach their full potential for health.

- We ensure that the people of the Commonwealth receive quality health care and live in a safe and healthy environment.
- We build partnerships to maximize access to affordable, high-quality health care.
- We are especially dedicated to the health concerns of those most in need.
- We empower our communities to help themselves.
- We protect, preserve, and improve the health of all of the Commonwealth's residents.

This chapter presents further details about school health in this new era, including societal changes, Healthy People 2010 objectives pertinent to school health, the Massachusetts Coordinated School Health Model, recent expansion of school health services in the Commonwealth, the evolving role of the school nurse, and ongoing challenges and solutions.

SOCIETAL CHANGES AFFECT THE ROLE OF SCHOOL HEALTH PROGRAMS

Massachusetts, like the nation, has experienced major societal changes during the past several decades. These societal changes have had a direct impact on the current role of school health programs. Examples of these societal changes are:

1. Increased knowledge of the role of health in educational achievement.
There continues to be clear and compelling evidence about both the ways in which health issues impact students' school performance and future prospects, and the positive effects of timely interventions. If young people are to succeed in school, they cannot be tired, hungry, drug-impaired, concerned about safety, or suffering from low self-esteem. Poor nutrition, depression, domestic violence, and substance abuse can severely hamper students' health and their ability to learn. Conversely, when children's health-related needs are met, they have the cognitive energy to learn and achieve. Studies have indicated:

- Roughly 1 in 15 U.S. schoolchildren have asthma, which accounts for 14 million missed days of school each year. It has been demonstrated, however, that in-school management of the condition, overseen by a school nurse, can have a significant positive impact. Students who receive proper asthma care show improved grades and perform better in physical education classes (Education Development Center, Urban Special Education Leadership Collaborative, ILIAD IDEA Partnership, 2003).
- Participation in a school breakfast program raises scores on basic skills tests and reduces absenteeism and tardiness, while strengthening psychosocial outcomes, and lowering anxiety, hyperactivity, depression, and psychosocial dysfunction (Murphy et al., 1998).
- School-based physical activity programs correlate with improved academic achievement, including increased concentration, higher test scores, and reduced disruptive behavior. Academic achievement improves even when the physical education schedule reduces the time for academics (Symons et al., 1997).
- Schools that have implemented comprehensive health education (CHE) programs report improvement in grade point averages for math and English, achievement scores for reading, and standardized test performance. CHE programs – defined as planned, sequential instruction designed to help students develop the knowledge, attitudes and skills they need to maintain and improve their health (Lohrmann & Wooley, 1998) – have improved attendance and graduation rates, and have increased students' cognitive development, including awareness, goal setting, decision making, and communication skills (Mohai, 1991).

- Nicotine addiction reduces the ability to concentrate. If a student smokes daily and spends 15 minutes of each school day craving a cigarette, then time spent on learning is reduced by 45 hours per year — the equivalent of missing 9 weeks of a 50-minute calculus class. It has been estimated that implementing effective educational programs for preventing tobacco use could postpone or prevent smoking onset in 20% to 40% of U.S. adolescents (U.S. Department of Health and Human Services, 2000).

2. Recognition that schools need to provide health services to ensure attendance of children with chronic health conditions and complex care needs.

- Advances in medical science such as neonatal intensive care, parenteral nutrition, transplantation, immunosuppression, cancer chemotherapy, dialysis, and many other technologies have resulted in increased survival rates of children with a variety of medical and genetic conditions.
- While medical technology has expanded, so too have the legal developments ensuring the right of all children to an education. A child's right to be educated in the least restrictive environment has supported the inclusion of students with a variety of health issues in general education classrooms, many requiring clinical services during the school day. For example, medical procedures formerly performed only in a hospital (e.g., catheterization, tracheotomy care, central line care) must now be provided in the school setting.
- In addition, with fewer hospitalizations and reduced lengths of hospital stay, school nurses often care for children whose illnesses or chronic conditions (e.g., acute asthma, cancer, cystic fibrosis, cerebral palsy, and Type1 diabetes) were formerly managed in a hospital or clinic setting. These children and youth require increasingly diverse and complex onsite services. Teaching families how to manage these conditions at home has shifted to the school as well (Chabra & Chavez, 2000; Leslie, Sarah & Palfrey, 1998; Schutte, Price & James, 1997).
- Finally, during the past decade, children with terminal illnesses and "comfort care/do not resuscitate" orders also are attending school, requiring schools to further their services to families by becoming involved in end-of-life planning (Lear et al., 2006).

The need for school health services to support students with special health needs is likely to continue to escalate in coming years. One objective of Healthy People 2010 is to increase from 45 percent to 60 percent the proportion of children and youth with disabilities who spend at least 80 percent of their time in regular education programs (Palfrey et al., 2004).

3. Recognition that schools are a major partner in implementing population-based public health initiatives.

As the nation faces critical public health problems, schools may play a significant role in assessment and implementation of new initiatives. For example, with the epidemic of overweight, changing the nutritional environment and promoting physical activities can contribute to the incorporation of healthy lifestyles at an early age. Another example is immunization surveillance (Sheetz, 2003).

4. Increased health risks for school children.

Many youth today are at risk for such issues as depression, violence, sexual abuse, domestic violence, and HIV infection. The school health service program is uniquely positioned to identify these youths and facilitate their access to the health care system, either directly or through referrals to appropriate medical or social services (Thurber, Berry & Cameron, 1991).

5. Economic hardship and lack of health insurance.

While public programs to ensure health insurance coverage for children have decreased the numbers of uninsured children, many barriers remain to accessing care, including lack of

transportation, language other than English, family mobility, and providers' cultural insensitivity. In addition, families in crisis may regard health care as essential only for illness and assign preventive visits a lower priority. Such circumstances create challenges to establishing a "medical home" for all children. The school health service program often serves as an accessible entry point into the health care delivery system, with the school nurse linking the child to a community primary care provider.

6. Changes in family employment patterns and family structures.
Increases in the percentage of working parents and single-parent households have resulted in more families relying on school nurses for initial assessment of a child's illness or injury because this prevents parents' work absences. In many instances, school health rooms become active triage stations for a myriad of common health conditions and injuries (Uphold & Graham, 1993; U.S. Bureau of the Census, 2000; Wold, 2001).

7. Changing enrollment patterns.
"Newcomer families," in particular, look to the school nurse for information on local health resources. Newcomers include families who have emigrated from other countries, as well as those who move from city to city for employment or family reasons. Some Massachusetts communities report that as many as 40% of their students are in these newcomer families.

8. Increased role in responding to community emergencies.
Because communities are faced with the possibility of such new threats as pandemic influenza and bioterrorism, the school and its health program are moving into a new era in community-based emergency preparedness. The school's unique role in the community, including its available clinical and facility resources, makes it a critical partner in planning for and responding to emergencies.

HEALTHY PEOPLE 2010 OBJECTIVES RELATED TO SCHOOL HEALTH

Recognizing the societal changes listed above and the important role of schools to the health of the nation's youth, Healthy People 2010, the national agenda of health goals and objectives, has included many goals relevant to school health. Healthy 2010 was developed and coordinated by the U.S. Department of Health and Human Services and other federal agencies. It has set an aggressive agenda for improvement of child and adolescent health. Of the 467 total objectives, 107 are directly relevant to youth and young adults. Objectives related to school-age children and school health services include:

- Reduce or eliminate indigenous cases of vaccine-preventable diseases;
- Reduce the proportion of children and adolescents who have dental caries in their primary or permanent teeth;
- Reduce the number of school or work days missed by persons with asthma;
- Reduce hospitalization rates for three ambulatory-care-sensitive conditions — pediatric asthma, uncontrolled diabetes, and immunization-preventable pneumonia and influenza;
- Reduce the proportion of children and adolescents who are overweight or obese;
- Reduce tobacco use by adolescents;
- Increase the high-school completion rate to 90%;
- Increase the proportion of the nation's elementary, middle, junior high, and senior high schools that have a nurse-to-student ratio of at least 1:750; and
- Increase the proportion of middle, junior high, and senior high schools that provide school health education to prevent health problems related to the following: unintentional injury; violence; suicide; tobacco use and addiction; alcohol and other drug use; unintended

pregnancy, HIV/AIDS, and STD infection; unhealthy dietary patterns; inadequate physical activity; and environmental health (USDHHS, 2000).

The last three objectives above are particularly notable for their explicit recognition of the critical links between health and educational achievement and the important role of schools in delivery of health services and health promotion. In a document titled *Schools and Healthy People 2010,* the Association for Supervision and Curriculum Development (ASCD) Health in Education Initiative interpreted the message of Healthy People 2010 this way:

> "Schools are key to the public health strategies laid out for the next 10 years. The inclusion of these three school-based objectives in Healthy People 2010 raises awareness about the link between public health and education. While working to attain these objectives, the nation will move closer to its goal of having a healthier, better-educated population." (ASCD, 2000)

Specifically addressing its aims in terms of health education, *Healthy People 2010* notes:

> "It is important that youth are able to find, understand, and use information and services to enhance health. Research has shown that for health education curricula to affect priority health-risk behaviors among adolescents, effective strategies, considerable instructional time, and well-prepared teachers are required. To attain this objective, states and school districts need to support effective health education with appropriate policies, teacher training, effective curricula, and regular progress assessment."

MASSACHUSETTS COORDINATED SCHOOL HEALTH MODEL

By adopting a coordinated school health approach, Massachusetts is part of a national effort to respond to the challenges of promoting student health and students' capacity to learn (as delineated in Healthy People 2010). Many, if not most, schools address student health-related issues in a variety of ways, for example by providing school lunch, having nurses treat students with acute health conditions, instituting no-tobacco policies and including instruction in physical education. However, to be most effective, such efforts need to be coordinated.

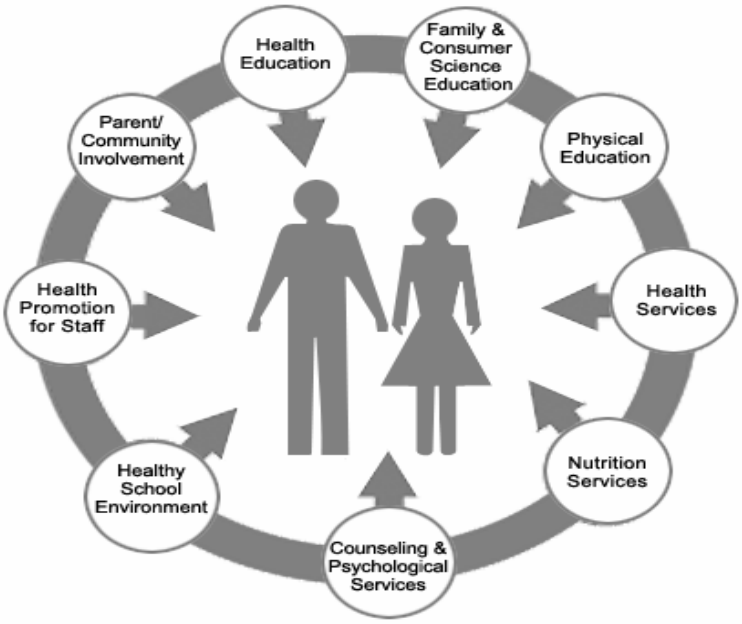
In a landmark article in the late 1980s, Diane Allensworth and Lloyd Kolbe, of the Centers for Disease Control and Prevention, proposed a new model for thinking about school health, a model they initially termed "comprehensive school health programs" (Allensworth & Kolbe, 1987), but that later came to be known as "coordinated school health" programs — CSHP (Marx, Wooley, & Northrop, 1998).

In essence, the coordinated school health approach proposes bringing together various components of school health for the purpose of strengthening the individual programs and increasing collaboration and coordination between and among programs. The premise underlying this model is that the components are most effective in addressing health issues facing youth today when supported and reinforced by the others rather than in isolation. Each of the CSHP model components is more effective when provided within the broader context of the whole (Blake, 2002).

Through the support of families, schools, and communities all working together, CSHP is an approach to school health that improves students' health and their capacity to learn. Schools provide the critical facility in which many people and organizations can collaborate to maintain the wellbeing of youth. Families, health care workers, the media, community organizations that serve youth, and young people themselves also must be systematically involved.

Massachusetts enhanced the CSHP by adding a ninth component — Family and Consumer Science Education — to the original eight that were defined by Allensworth and Kolbe. The Massachusetts Coordinated School Health Program (CSHP) model aims to create a healthy environment for young people by involving everyone in the community. These components are outlined in Figure 1, and each is described below.

The Massachusetts Coordinated School Health Model (Figure 1)



- **Health Education** – A planned, sequential, K-12 curriculum that addresses the physical, mental, emotional, and social dimensions of health.
- **Physical Education** – A planned, sequential, K-12 curriculum that provides cognitive content and learning experiences in a variety of activity areas such as basic movement; physical fitness; rhythms and dance; games; team, dual, and individual sports; tumbling and gymnastics; and aquatics.
- **Health Services** – Services provided to appraise, protect, and promote student health, facilitate attendance, ensure access and referral to community primary care providers and other youth-serving agencies, foster use of primary care services, prevent and control disease and other health problems, and provide emergency care and educational and counseling opportunities.
- **Nutrition Services** – Access to a variety of nutritious and appealing meals and a nutritional environment that accommodates the health and nutrition needs of all students.
- **Health Promotion for Staff** – Opportunities for school staff to improve their health through activities such as health assessments, health education, and health-related fitness activities.
- **Counseling and Psychological Services** – Services provided to improve students' mental, emotional, behavioral, and social health.
- **Healthy School Environment** – Positive physical and aesthetic surroundings, psychosocial climate, and culture for schools.
- **Parent/Community Involvement** – An integrated school, parent, and community approach for enhancing students' health and well-being. School health advisory councils, coalitions,

and broad-based constituencies can build support for school health program efforts and gather resources and services to respond effectively to students' health needs.

- **Family and Consumer Science Education** – A planned, sequential, K-12 curriculum that provides students with the knowledge and skills necessary to obtain, manage, and evaluate resources in order to maintain physical and mental health and well-being for themselves, their families, and the community.

Each of these components has an essential role in addressing student health issues, but different programmatic components often fail to coordinate with each other and may even work at cross purposes. In a paper delivered to the 2000 National Governors Association, Mark Ouellette of the Education Policy Studies Division of the Center for Health and Health Care in Schools discussed the "fragmentation, duplication, and inconsistency" that plague many school health initiatives (Ouellette, 2000). Examples of how there can be inconsistencies in the application of the health model are:

- While the health educator teaches about the food pyramid, the cafeteria manager prepares a lunch of pizza and french fries, the school business manager counts the proceeds from the soft-drink machines, and the social studies teacher rewards a student with candy for correctly answering a question in class.
- A teacher emphasizes the importance of students washing their hands. Yet only one of the eight faucets in the girls' lavatory works, there is no soap in the dispenser, and the maintenance department cannot schedule plumbing renovations for another two years.

However if a concerted effort is made to apply the model and issues are addressed consistently, a coordinated approach to school health can contribute to positive outcomes, such as the following:

- While the health educator teaches about the food pyramid, the cafeteria manager prepares a lunch based on the pyramid, the school business manager counts the proceeds from vending machines offering healthy foods and beverages, and the math teacher offers non-food rewards for excellent performance in class.
- A teacher emphasizes the importance of students washing their hands. Sufficient sinks and/or hand sanitizers are available and the maintenance department ensures timely renovations of plumbing fixtures if needed.

Thus, working together offers many opportunities to remove barriers to the success of school health. Furthermore, implementation of a coordinated school health program model has been shown to improve attendance, discipline, and academic performance, along with overall wellness. One low-income school district in Mississippi credits its use of a similar model with increased graduation rates; dramatic decreases in discipline referrals, detentions, and suspensions; and huge gains in elementary reading performance (e.g., an increase of 71% in second-graders reading at grade level) (Cooper, 2003).

Program Support for Massachusetts Coordinated School Health

Over the past 15 years or so in Massachusetts, there have been a number of partnerships and initiatives to promote coordinated school health. In the 1990s, the Massachusetts Health Protection Fund (HPF), funded by a tax on tobacco products, gave grants to school districts to strengthen their school health programs. To obtain HPF grants, districts were required to conduct regular needs assessments of the health risk behaviors most prevalent among students in their communities, to plan school health programming based on local needs and best practices, and to have both a district health coordinator and a district school health advisory council.

In 1993, DPH began to implement its Essential School Health Service (ESHS) grants that also required a school health advisory council, thus working collaboratively with the Massachusetts

Department of Education (DOE) to support this essential requirement for coordinated school health programs. The coordinated approach gained further momentum in 2000 when DOE and DPH received funding from the Division of Adolescent and School Health (DASH) at the Centers for Disease Control and Prevention (CDC) to promote the CSH model. This initiative funded a collaborative effort between DOE and DPH to address priority youth risk behaviors in a systematic way. Under the CDC cooperative agreement, DOE and DPH established a plan consisting of the following goals:

1. To establish formal partnerships between DOE and DPH to develop and implement an infrastructure that supports school health education and services, as well as child and adolescent health activities at the state and local levels. In addition, the Massachusetts CSH model will build relationships with community-based and statewide organizations concerned with child, adolescent, and school health issues to promote and support the roles of schools in achieving priority health outcomes.

2. To reduce youth health risk behaviors relating to physical activity, nutrition, and tobacco use that can result in chronic disease, through the promotion of effective school policies, environmental changes, and educational strategies at the local level (CDC, 2003).

An excellent example of CSH was offered through the federal Child Nutrition and WIC Reauthorization Act of 2004. This act requires all school districts receiving USDA funds to establish a written “School Wellness Policy” that addresses nutrition education, physical activity, and foods available on the school campus. Districts must bring together many constituents — including school administrators, parents, school nurses, school committee members, and representatives from school food service authority — to work on drafting and implementing local school wellness policies that are tailored to the needs of their communities. Although these policies vary in quality and strength, many districts, through coordination of efforts, have succeeded in eliminating soda and junk food from vending machines and class parties, improving the nutrition education and physical education for their students, and promoting an awareness of health across the whole school community.

Coordinated School Health staff at DPH and DOE are available to help school districts develop plans to implement their wellness policies and further design and implement a CSH model to meet their specific needs. Specific professional development, technical assistance, and materials are available to help schools assess their existing school health policies and programs, evaluate and revise health education and physical education curricula, increase coordination within schools and between schools and communities, advocate effectively for school health, and conduct program evaluations.

EXPANSION OF THE MASSACHUSETTS SCHOOL HEALTH SERVICES

School health services are an essential component of the CSH program model. Health is the primary mission of the service component, and frequently the school nurse serves as the catalyst for addressing health needs within the school. Through the efforts of the DPH, particularly the innovative DPH School Health Unit, Massachusetts has assumed national recognition as a leader in developing school health services.

The Role of the DPH School Health Unit

In the early 1990s, in response to the changes affecting school health programs and the increased need for quality services in the educational setting, the Massachusetts Department of Public Health (DPH) redesigned its school health service program. It established an expanded School Health

Unit staffed with clinically trained professionals to provide consultation to school nurses and other school health personnel in school districts across the Commonwealth.

In keeping with its mission and vision, the DPH School Health Unit (SHU) is committed to supporting public school districts and nonpublic schools in providing all school-age children with access to a school health service program that is:

- community-based;
- integrated within and supportive of the educational system;
- managed by a qualified nursing leader who is integrated into the school administrative structure as part of the management team;
- advised by a school and community group, including parents and students;
- based on accepted standards, regulations, statutes, and community norms;
- supported by a health service management information system;
- offering a range of prevention, risk assessment, and treatment services;
- implemented by sufficient numbers of qualified school nurses and support personnel during the entire school day;
- culturally competent and linguistically relevant;
- coordinated with the 8 other components of the Massachusetts Coordinated School Health Model (see earlier in chapter);
- linked with community primary care, behavioral health, and dental health providers, local youth- and family-serving agencies, local and state public health and emergency providers, and public insurance outreach programs;
- making maximum use of available public and nonpublic funds (e.g., Municipal Medicaid, grants, insurance reimbursement, business partnerships, Foundation Budget, Community Benefits Program); and
- evaluated regularly to determine its effectiveness and efficiency.

To accomplish its goals, the SHU developed and implemented a strategic plan involving 9 components.

1. **Setting Standards:** Beginning in 1992, the SHU developed quarterly newsletters aimed at setting standards in specific areas such as violence prevention and overweight reduction. In 1995, it published the first edition of the *Comprehensive School Health Manual;* the current second edition was completed in 2007. As new issues emerge, updated information and standards of care are placed on the SHU website, http://www.mass.gov/dph/fch/schoolhealth/index.htm.

2. **Updating Regulations:** In 1993, DPH originally developed and promulgated the Regulations Governing the Administration of Prescription Medications in Public and Private Schools (105 CMR 210.000), and revised them as needed, with the most recent revision in 2004. These regulations form the basis of the school nurse managed medication administration system in the Commonwealth's schools. The SHU also collaborated with the State Laboratory Institute to update school immunization regulations as new immunizations were developed.

3. **Providing Continuing Education:** In 1993, responding to school health personnel's request for continuing education programs pertinent to school health, DPH established the first School Health Institute (SHI). The institute, administered by a university, provides ongoing multidisciplinary programs relevant to school health practitioners.

4. **Credentialing of School Health Personnel:** In collaboration with DOE and the Massachusetts School Nurse Organization, the SHU has assisted the Massachusetts Board of Education in developing licensure requirements for school nurses consistent with teacher requirements. (School nurse certification/licensure was a requirement established by the 1993 Education Reform Act.)

5. **Exploring Reimbursement Systems:** The SHU has promoted expansion of access to such programs as Municipal Medicaid, Part B, which reimburses municipalities for indirect care of children insured by MassHealth.

6. **Exploring New Models of Care:** As student health needs grow and change, DPH is responsible for encouraging new models of care. It developed and supports the Essential School Health Service (ESHS) model and the school-based health center (SBHC) model; the latter designed for schools where students do not have access to primary care.

7. **Implementing Data Systems:** Student health and health care service data are integral to establishing a needs assessment, tracking changing child health status indicators, demonstrating school health service activities, and supporting evaluation of care. Through the ESHS programs, the SHU began establishing information management systems in 1993. In addition, it collaborates with other DPH programs to provide surveillance of child health indicators (e.g., pediatric asthma surveillance in conjunction with the Bureau of Environmental Health and varicella surveillance with the State Laboratory Institute).

8. **Coordinating School Health Service Programs with Primary Care Providers:** As increasing numbers of children with special health care needs attend school, new mechanisms need to be established to ensure close communication among the parents, the school health program, and health care providers, so that the individual child will have consistent, coordinated care in all settings. For example, with parental consent, the school nurse may share asthma diaries with the primary care providers (PCP) while the PCP may complete an asthma action plan for management of the child's asthma in the school setting.

9. **Conducting Research on Pertinent School Health Issues:** As school health service programs develop, there is a need for expansion and implementation of evidence-based practice to improve health and educational outcomes. In addition, school nurses, like their nursing colleagues in other settings, need to implement continuous quality improvement (CQI) programs (e.g., client satisfaction and vision screening follow-up), to continue to monitor and improve their practice. The DPH-SHU has provided leadership in this area with the implementation of its own CQI program, the review of the administration of epinephrine to individuals experiencing a life-threatening allergic event in the school setting (McIntyre et al., 2005).

   Massachusetts continues to be a leader in developing school nursing research. In 2004, DPH-SHU joined a partnership of the MSNO and Boston College Connell School of Nursing to form a practice-based research network, the Massachusetts School Nurse Research Network (MASNRN). MASNRN is comprised of a representative, collaborative group of school nurses, nurse academicians, and other interested parties who conduct research and use translational research to support and improve student health outcomes and the efficacy and efficiency of school nursing care. For further information, see http://www.masnrn.org/.

   School nurses play a critical role in enhancing evidence based practice in the school setting, as demonstrated by the tobacco cessation study. A pilot study conducted by the University of Massachusetts Medical School (UMMS) Division of Preventive and Behavioral

Medicine and the Department of Public Health (DPH) in 2002-2003 at 71 Massachusetts high schools, demonstrated that cessation intervention, delivered by school nurses, is feasible and potentially efficacious in increasing self-reported short term (6-week and 3-month) quit rates among adolescent smokers who wish to quit. The intervention includes four individual 15 to 20 minute sessions with the school nurse.

Based on these outcomes, in 2006 the National Institutes of Health awarded the University of Massachusetts Medical School a four-year grant to test this intervention in a randomized controlled trial that will allow longer-term, 12-month follow-up with continine validation.

Essential School Health Service Programs

During the 1990s, the availability of state and federal resources permitted expansion of the comprehensive school health programs. DOE provided funding for health education under the Health Protection Funds, and DPH developed a model for school nurse-managed health services. Originally entitled “Enhanced School Health Services” and in 2004 renamed “Essential School Health Services” (ESHS), the model established standards for school nurse-managed health service programs consistent with the coordinated school health program model. While originally applied to a group of school districts, funded through the competitive bidding process, it continues to offer guidance for school health service program development throughout the Commonwealth.

The ESHS programs were designed to strengthen the Commonwealth’s school health service system. Grant requirements included:

- strengthening the administrative infrastructure of the school health service program with a qualified school nurse leader (as a member of the management team), staffing requirements, health assessments, policies, oral health, and emergency care;
- coordinating with health education activities, including implementing tobacco prevention and cessation programs onsite in the school district;
- linking the school health service program with local health agencies, medical and dental providers, community-based activities, and public health insurance programs; and
- developing information management systems.

In 1997, after the first Enhanced Program cycle, an additional model was introduced — the Enhanced School Health Service with Consultation (ESHSC) — that funded certain ESHS districts to provide consultation to other school districts seeking to develop their school health service programs, thereby expanding the ESHS best practice model. In 2000 and 2001, the ESHS model was expanded with each public school district applicant assuming responsibility for beginning to provide basic health services to the non-public schools within the community’s borders. By 2001, more than half of the Commonwealth’s children attended schools in communities partially funded under the ESHS model.

At the same time that the Essential School Health Services were expanding, so too were school-based health centers (SBHCs). These are primary care clinics located in schools that are licensed satellites of either a neighborhood health center or a hospital. In contrast to the ESHS and general school health service programs serving all children in the school, SBHCs only provide *primary care* to students enrolled in the centers. The first SBHC in Massachusetts was established in the mid-1980s. With additional state and federal funds, the number of centers throughout the Commonwealth is now more than fifty. Chapter 2 contains further discussion of SBHCs.

The Guiding Vision

Underlying all of these efforts in Massachusetts is the recognition that schools and school health services occupy a unique position in lives of students and the larger community, which makes them a critical access point for services to children and their families.

- Entry into school offers an important *safety net* for children. Traditionally, state immunization regulations have ensured that all children who enter school receive protection against certain infectious diseases. School entry also provides an opportunity to monitor children's access to health insurance and primary care and dental providers, providing referrals as needed. And, it offers the opportunity to ensure that plans of care are in place to provide for the health and safety of children with a variety of health conditions (e.g., life threatening allergies).
- Schools and school nurses are frequently well known and trusted by families. As health professionals knowledgeable about community resources, school nurses are well positioned to provide information on resources and referrals.
- When the school health services infrastructure (school nurse leader, staffing, equipment, and technology) is in place, it offers an efficient and cost-effective means of addressing a wide range of health and prevention issues (e.g., group asthma management, risk assessment, overweight prevention, skin cancer prevention, tobacco cessation, dental sealant applications). Schools also can offer a comfortable, safe environment for delivery of health education and care to students.
- School nurses are critical in the management of chronic health conditions, providing vital planning, treatment, coordination and family education services, designed to promote both attendance and health.
- The school is an excellent location for population-based screening that can identify problems affecting students' health and learning abilities, including both physical problems and behavioral issues that are indicative of substance abuse, exposure to violence, or risk of suicide.
- Schools offer opportunities for collection of population-based data for needs assessments and monitoring children's health status, such as asthma and overweight surveillance.

THE ROLE OF THE SCHOOL NURSE

The school nurse is the cornerstone of the school health service program, and her/his role interacts with three major systems affecting children and adolescents: education, health, and public health. As a public health nurse, the school nurse is responsible for a defined population of students. This requires both clinical and management expertise, as well as an ability to work with families and a range of disciplines within both the school and community.

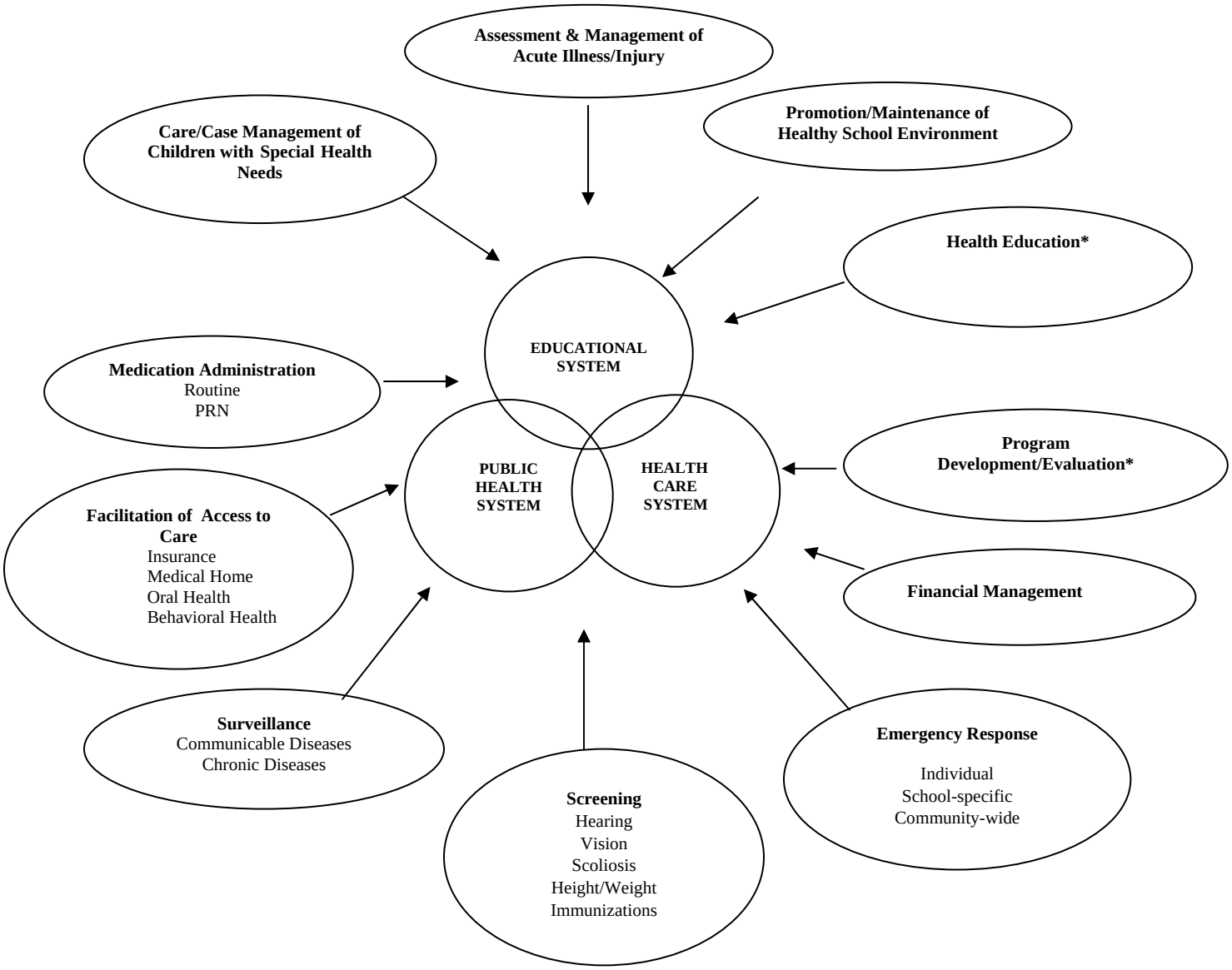
Over the past 15 years, the role of the school nurse has undergone dramatic changes. In a regular school day, a school nurse provides services for 40 to 100 children, delivering an extensive and complex range of services that may include:

- assessing and treating a range of illnesses;
- managing chronic diseases;
- administering medication;
- providing care assisted with medical technology (e.g., catheterizations, tracheotomy care);
- linking children with insurance and/or primary care providers;
- providing first aid and emergency care for a range of injuries and health conditions (e.g., an individual experiencing a life-threatening allergic event);
- identifying students at risk for a variety of issues such as teen pregnancy, alcohol abuse, bullying, and depression;

- completing health screenings (e.g., body mass index (BMI) measurements); and
- providing support and referral resources for children and their families experiencing acute crisis or emotional upheaval.

School nurses also collaborate with school administrators, teachers, parents, and local public health and safety officials to help plan and implement a wide range of health promotion programs dealing with issues such as tobacco cessation, nutrition, and skin cancer screening. They assist in the development of strategies for modeling healthy habits and behaviors within the school environment. More recently, superimposed on these responsibilities are public health functions such as asthma surveillance and participation in community influenza pandemic planning.

SCHOOL NURSING MODEL (Figure 2)



*Examples of specific health issues addressed by health education & program development activities: asthma, diabetes, food allergies, substance abuse, healthy weight (nutrition, physical activity), sexual issues, injury prevention (intentional/unintentional), skin cancer prevention, mental health, hygiene/sanitation.

DPH/SHU L. McIntyre

ONGOING CHALLENGES OF SCHOOL NURSING AND SCHOOL HEALTH SERVICES

While the responsibilities and scope of school health services and school nursing practice have expanded, many challenges remain:

- continued development of high-quality health services in both public and nonpublic schools across the Commonwealth;
- establishment of ongoing funding streams;
- expansion of behavioral health promotion efforts;
- expansion of communication systems and coordination mechanisms among school health personnel, community primary care providers, and parents to facilitate care management for children with special health care needs;
- expansion of information management systems between state agencies and communities to expedite care and provide early warning systems should an infectious disease outbreak occur;
- additional partnerships with universities, hospitals, and others to promote studies and research in educational and health outcomes related to health education and services provided in schools;
- establishment of ongoing surveillance systems for a wide range of child health indicators such asthma, depression, Type I and Type II diabetes, and overweight; and
- specialized educational programs to prepare nurses and other providers for both leadership and staffing roles in the educational setting.

School health services have moved into the new century with new expectations and expanded responsibilities. They are evolving very rapidly into a unique specialty in pediatric health care. The vision is to continue to strengthen school health infrastructure at the local level, ensuring high quality, evidence-based practice in the educational setting. However school health services must also continue to focus on demonstrating their unique role in supporting educational achievement. They must integrate their efforts into a larger health care delivery system serving children, while forging new communication systems and linkages in the process. Furthermore, as schools are increasingly viewed as essential components of the public health system, they will face new challenges as they join the planning efforts for the health and safety of their communities.

SUMMARY

Coordinated school health programs, built on a foundation of close collaboration among school-based health and human services personnel, teachers, administrators, parents, external health care providers, and local public health and safety officials, can support the resiliency of students and enhance their knowledge and skills for maintaining health. At the same time, these programs also identify students at risk for health problems and provide needed health services within the school and/or timely referral to community agencies. The ultimate goal is a healthier, more teachable student population and a healthier community.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS

Health is Academic: A Guide to Coordinated School Health Programs (Marx & Wooley, 1998) discusses not only the contribution of different components to promoting health within schools, but also outlines steps that schools and districts can take to adopt and implement a coordinated school health approach. These include enlisting the support of school administration; establishing a broad-based school health advisory council; identifying key players and establishing a healthy school team; identifying student, family, and staff needs; mapping existing school-based and community resources; identifying programmatic needs; getting buy-in from other school staff; developing program goals and objectives; developing an implementation and coordination plan; and instituting monitoring and evaluation procedures (Fetro in Marx & Wooley, 1998. See also Fetro, 2005 and Kane, 2005). Specific examples describing how schools across the country have strengthened their school health programs by using a CSHP approach can be found in CDC's ***Stories from the Field: Lessons Learned about Building Coordinated School Health Programs*** (2003).

Massachusetts Association of Health Boards
56 Taunton Street
Plainville, MA 02762-2144
Phone: 508-643-0234
Fax: 508-643-0234
Website: http://www.mahb.org
MAHB is a nonprofit organization providing local boards of health with education, technical assistance, representation, and resource development.

Massachusetts Coalition of
School-Based Health Centers
95 Berkeley Street, Suite 201
Boston, MA 02116
Phone: 617-451-0049
Fax: 617-451-0062
E-mail: mcsbhc@tmfnet.org
Website: http://www.mcsbhc.org
School-based health centers are places where children have access to quality health care in school. There are over 10 such centers in Massachusetts and the Massachusetts Coalition for School-Based Health Centers' (MCSBH) website provides a summary message of efforts and goals for these centers from the executive director.

Massachusetts Department of Public Health
Bureau of Family and Community Health
250 Washington Street
Boston, MA 02108-4619
Phone: 617-624-6000
TTY: 617-624-6001
Website: http://www.mass.gov/dph

School Health Services
Phone: 617-624-6060
Fax: 617-624-6062
TTY: 617-624-5992
Website: http://www.mass.gov/dph/fch/schoolhealth/index.htm
School Health Services is composed of central office professional staff that collaborate with other DPH programs and DOE to provide ongoing school health service systems development and technical assistance to the Commonwealth's 351 public school districts and approximately 600 nonpublic schools.

Essential School Health Services
Website: http://www.mass.gov/dph/fch/schoolhealth/eshs.htm

Coordinated School Health Program
Phone: 617-624-5537
Website: http://www.mass.gov/dph/fch/schoolhealth/cshp.htm
The Coordinated School Health Program at DPH, in collaboration with the Coordinated School Health Program at the Department of Education, works to help schools and districts build local infrastructure and strengthen school health programs, especially those related to health education, physical education, and school health policies.

Massachusetts Department of Education
350 Main Street
Malden, MA 02148-5023
Phone: 781-338-3000
Website: http://www.doe.mass.edu

Coordinated School Health Program
Phone: 781-338-3603
Fax: 718-338-6332
Website: http://www.doe.mass.edu/cnp/hprograms/
The Coordinated School Health Program at the Department of Education, in collaboration with the Coordinated School Health Program at DPH, works to help schools and districts build local infrastructure and strengthen school health programs, especially those related to health education, physical education, and school health policies.

Resources available online include the CSHP newsletter, *InStep with School Health*, which contains ideas, news, and resources for school health programs and services, and an electronic mailing list providing updates on health education, physical education, and other school health programs as well as announcements of professional development opportunities. Additionally, the website provides links to the HIV/AIDS Prevention Program and the most current Youth Risk Behavior Survey results.

Massachusetts Public Health Association (MPHA)
434 Jamaicaway (Boston office; see website for other offices)
Jamaica Plain, MA 02130
Phone: 617-524-6696
Fax: 617-524-5225
Website: http://www.mphaweb.org
MPHA is a statewide membership organization that seeks through advocacy, education, coalition building, and organized action to improve public health, promote the establishment of health care as a human right, and secure optimal community, personal, and environmental health.

Massachusetts School Nurse Organization (MSNO)
Website: http://www.msno.org
MSNO is a nonprofit organization that works to promote and advance the professional practice of school nursing throughout Massachusetts. Its membership includes school nurses, school administrators, public health nurses, practitioners, consultants, educators, and retired school nurses.

Massachusetts School Physicians
Website: http://www.bu.edu/schoolphys
Massachusetts requires every school district to have a school physician. This website is intended to serve as a technical and informational resource to those school physicians. Answers to basic questions, links, and a support forum are provided.

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS

American Academy of Pediatrics (AAP)
141 Northwest Point Boulevard
Elk Grove Village, IL 60007-1098
Phone: 847-434-4000
Fax: 847-434-8000
Website: http://www.aap.org
The Committee on School Health and the Section on School Health at AAP jointly maintain a website offering information and resources for school health: http://www.schoolhealth.org.

American Public Health Association (APHA)
School Health Education Section
Website: http://www.hsc.usf.edu/CFH/cnheo/apha-shes.htm
APHA's School Health Education Section works toward the improvement of early childhood, school, and college health programs, interpreting the functions of health agencies and service objectives, providing a forum for discussion, and encouraging the provision of health-promotion programs in those settings.

American School Health Association (ASHA)
7263 State Route 43
P.O. Box 708
Kent, OH 44240
Phone: 800-445-2742 or 330-678-1601
Fax: 330-678-4526
E-mail: asha@ashaweb.org
Website: http://www.ashaweb.org
ASHA publishes *Health in Action*, a quarterly that provides scientifically accurate and readable information covering single health topics within the context of a coordinated school health program.

Association of State and Territorial Health Officials (ASTHO)
Adolescent and School Health Project
1275 K Street NW, Suite 800
Washington, DC 20005-4006
Phone: 202-371-9090
Fax: 202-371-9797
Website: http://www.astho.org/index.php?template=adolescent_school_health.html
The Adolescent and School Health Project informs state health agencies about adolescent health issues and works to increase the development of sound national policies and programs to promote adolescent health and well-being. The project also assists state public health agencies in increasing collaboration with and providing assistance to state education agencies in implementing CSH in the nation's schools. A monthly publication *The Update* provides information on state and national adolescent and school health issues, resources, and funding.

Center for Health and Health Care in Schools (CHHCS)
2121 K Street NW, Suite 250
Washington, DC 20037
Phone: 202-466-3396
Fax: 202-466-3467
E-mail: chhcs@gwu.edu
Website: http://www.healthinschools.org
CHHCS is a nonpartisan policy and program resource center located at The George Washington University School of Public Health and Health Services.

Centers for Disease Control and Prevention (CDC)
Division of Adolescent and School Health (DASH)
Website: http://www.cdc.gov/nccdphp/dash or http://www.cdc.gov/HealthyYouth/index.htm

DASH provides information on the coordinated school health program model designed and supported by CDC, as well as information on important long-term studies including the Youth Risk Behavior Surveillance (YRBS) study, the School Health Policies and Program Study (SHPPS-2000), and the School Health Profiles (Surveillance for characteristics of health education and other school health policies and programs among secondary schools).

Other available materials include:

- *School Health Index* – A self-assessment and planning tool for schools to improve the effectiveness of their health and safety policies and programs.
- *Improving the Health of Adolescents & Young Adults: A Guide for States and Communities* – A resource for state and local agencies and organizations that will guide them through public health processes that address important adolescent health and safety issues.

Council of Chief State School Officers (CCSSO)
School Health Project
One Massachusetts Avenue NW, Suite 700
Washington, DC 20001-1431
Phone: 202-336-7000
Fax: 202-408-8072
Website: http://www.ccsso.org/projects/School_Health_Project/
In partnership with the Association of State and Territorial Health Officials (ASTHO), CCSSO's School Health Project created *The School Health Starter Kit,* now in its second edition. The kit, which contains easy-to-use research-based tools and materials to educate and motivate the public regarding school health issues, is available from the CCSSO publications office.

National Assembly on School-Based Health Care
666 11th Street NW
Washington, DC 20001
Phone: 202-638-5872
Fax: 202-638-5879
E-mail: info@nasbhc.org
Website: http://www.nasbhc.org
National Assembly on School-Based Health Care aims to promote accessible, quality school-based primary health and mental health care for children and youth through interdisciplinary and collaborative efforts. It supports the institutionalization of school-based health care nationwide as an essential strategy for improving the lives of children and optimizing their opportunities for success in school and society.

National Association of Local Boards of Health (NALBOH)
1840 East Gypsy Lane
Bowling Green, OH 43402
Phone: 419-353-7714
Fax: 419-352-6278
E-mail: nalboh@nalboh.org
Website: http://www.nalboh.org
NALBOH aims to empower local boards of health by providing education, training, and technical assistance.

National Association of School Nurses (NASN) (Eastern Office)
P.O. Box 1300 (163 U.S. Route #1)
Scarborough, ME 04070
Phone: 207-883-2117 or 877-627-6476
Fax: 207-883-2683
E-mail: nasn@nasn.org
Website: http://www.nasn.org
NASN was founded in 1968 by the National Education Association as an association committed to the betterment of school nursing practice and the health of school-aged children. Originally established as the Department of School Nurses (DSN), NASN formally separated from the National Education Association in 1979 and now continues to be the largest national association for school nurses. NASN partners with

national health organizations to develop educational programs, publishes issue briefs on subjects affecting student health and school nursing, and maintains a legal representative in Washington, D.C. to promote school nurse issues.

National Association of State Boards of Education (NASBE)
277 South Washington Street, Suite 100
Alexandria, VA 22314
Phone: 703-684-4000
Fax: 703-836-2313
Website: http://www.nasbe.org
NASBE develops guidelines for the writing and implementation of school policies on health issues; see *Fit, Healthy, and Ready to Learn.*

National Association of State School Nurse Consultants (NASSNC)
P.O. Box 708
Kent, OH 44240-0708
Website: http://lserver.aea14.k12.ia.us/swp/tadkins/nassnc/nassnc.html
National Association of State School Nurse Consultants promotes the health and learning of the nation's children and youth by providing national leadership and advocacy, impacting public policy, collaborating, and proactively influencing school health programs and school nursing practice.

National Center for Health Education (NCHE)
375 Hudson Street, 13th Floor
New York, NY 10014
Phone: 212-463-4053
Fax: 212-463-4060
Website: http://www.nche.org/
NCHE's Youth, Parents, and Communities project is aimed at building partnerships between schools, families, and communities to promote children's physical and emotional health and educational development. The site offers a bimonthly newsletter and school health resource links.

NEA Health Information Network (NEA HIN)
1201 16th Street NW, Suite 216
Washington, DC 20036
Phone: 202-822-7570
E-mail: info@neahin.org
Website: http://neahin.org
As the nonprofit health affiliate of the National Education Association, NEA HIN serves as a link between public school employees; local, state, and national health organizations; and government agencies. NEA HIN's mission is to improve the health and safety of school personnel and students by providing the school community with vital and timely health information that will increase teacher and education support professional (ESP) quality and student achievement.

National School Boards Association (NSBA)
School Health Programs Department
1680 Duke Street
Alexandria, VA 22314
Phone: 703-838-6722
Fax: 703-683-7590
E-mail: schoolhealth@nsba.org
Website: http://www.nsba.org/schoolhealth
The aim of the NSBA's School Health Programs Department is to help school policymakers and educators make informed decisions about health issues affecting the academic achievement and healthy development of students and the effective operation of schools. NSBA has developed the School Health Resource Database**,** a collection of 3,400+ items including sample school district policies, journal articles, research summaries, and fact sheets.

RESOURCES: REGIONAL AGENCIES AND ORGANIZATIONS

The New England Coalition for Health Promotion and Disease Prevention (NECON)
One Meeting Street
Providence, RI 02903
Phone: 401-351-5130
Fax: 401-421-2771
E-mail: info@neconinfo.org
Website: http://www.neconinfo.org/index.htm
NECON, a not-for-profit, nonpartisan organization, was established in 1984 with working groups and health-examining task forces representing multiple disciplines from all six New England states. Today NECON is a coalition of the New England state health departments, the region's schools of public health, and federal health agencies led by Region I of the U.S. Department of Health and Human Services as well as medical societies, legislators, and representatives from industry, labor, and voluntary associations. It serves as an instrument for the development and enhancement of disease-prevention and health-promotion public policies in New England.

REFERENCES

Action for Healthy Kids. (2002). *Taking action for healthy kids: A report on the Healthy Schools Summit and the Action for Healthy Kids Initiative.* Retrieved from http://www.actionforhealthykids.org/docs/the_report.pdf.

Allen, G. (2003). The impact of elementary school nurses on student attendance. *Journal of School Nursing, 19*(4), 225–231.

Allensworth, D., & Kolbe, L. (1987). The comprehensive school health program: Exploring an expanded concept. *Journal of School Health, 57*, 409–412.

Allensworth, D., Lawson, E., Nicholson, L. & Wyche, J. (Eds.). (1997). *Schools and health: Our nation's investment.* Washington, DC: National Academy Press.

American Academy of Pediatrics, Committee on School Health. (2001). School health centers and other integrated school health services. *Pediatrics, 107*, 198–201.

Association for Supervision and Curriculum Development (ASCD), Healthy Schools Initiative, Healthy People 2010 (2000). Retrieved in 2005 from http://web.archive.org/web/20050405112126/www.ascd.org/health_in_education/092000/feature.html.

Billy, J. O., Grady, W. R., Wenzlow, A. T., Brener, N. D., Collins, J. L. & Kann, L. (2000). Contextual influences on school provision of health services. *Journal of Adolescent Health, 27*(1), 12–24. PMID: 10867348.

Blake, S. (2002). *The Massachusetts School Health Collaborative Coordinated School Health Programs Needs Assessment Final Report.* Malden, MA: Massachusetts Department of Education.

Brener, N. D., Kann, L., McManus, T., Stevenson, B. & Wooley, S. F. (2004). The relationship between school health councils and school health policies and programs in US schools. *Journal of School Health, 74*(4), 130–135.

Broussard, L. (2004). School nursing: Not just band-aids any more. *Journal for Specialists in Pediatric Nursing*, *9*(3), 77–83. PMID: 15553549.

Carnegie Council on Adolescent Development. (1995). *Great transitions: Preparing adolescents for a new century*. New York: Carnegie Corporation.

The Center for Health and Health Care in Schools. (2003). *Parents cite importance of health care services in schools.* Washington, DC: The George Washington University School of Public Health and Health Services.

Centers for Disease Control and Prevention (2003). *Stories from the field: Lessons learned about building coordinated school health programs.* Atlanta, GA: Centers for Disease Control and Prevention.

Chabra, A. & Chavez, G. (2000). A comparison of long pediatric hospitalization in 1985 and 1994. *Journal of Community Health*, *25*(3), 199–210.

Costante, C. C. (2002). Healthy learners: The link between health and student achievement. *American School Board Journal, 189*(1), 31.

Devlin, L. M., & Asay, M. K. (2005). Rising student health needs require a school safety net. *North Carolina Medical Journal, 66*(2), 152–154. PMID: 15952471.

Dryfoos, J. (2002). Full-service community schools: Creating new institutions. *Phi Delta Kappan*, Jan., 393–399.

Duncan, P. & Igoe, J. B. (1988). School health services. In Marx, E. & Wooley, S. F. (Eds.), *Health is academic: A guide to coordinated school health programs* (pp. 69–194). New York: Teachers College Press.

Dwyer, K., & Osher, D. (2000). *Safeguarding our children: An action guide.* Washington, DC: U.S. Departments of Education and Justice.

Education Development Center, Inc. and Urban Special Education Leadership Collaborative, in collaboration with the ILIAD IDEA Partnership. (2003, May). *Improving attendance, improving achievement for students with asthma*. Web report on national teleconference.

Fetro, J.V. (1998). Implementing coordinated school health programs in local schools. In E.Marx & S. Wooley (Eds.), *Health is academic: A guide to coordinated school health programs* (pp. 15–42). New York: Teachers College Press.

Fetro, J.V. (2005) *Step by step to health-promoting schools: Program planning guide* (Revised edition). Santa Cruz, CA: ETR Associates

Geierstanger, S. P. & Amaral, G. (2005). *School-based health centers and academic performance: What is the intersection?* April 2004 meeting proceedings, white paper, Washington, DC: National Assembly on School-Based Health Care.

Greenberg, M. T. (2004). Current and future challenges in school-based prevention: The researcher perspective. *Prevention Science,* March, *5*(1), 5–13.

Hanson, T. L., Austin, G. & Lee-Bayha, J. (2003). *Student health risks, resilience, and academic performance: Year 1 report.* Los Alamitos, CA: WestEd.

Jensen-Wunder, L., Luckenbill, D. H., Robinson, J., Schlitt, J. & Wooley, S. F. (2001, October). *Recommendations for delivery of comprehensive primary health care to children and youth in the school setting.* Joint statement on the School Nurse/School-Based Health Center Partnership. Retrieved from http://www.nationalguidelines.org/guideline.cfm?guideNum=4-27&pageRefresh=true.

Kane, W.M. (2005). *Step by step to coordinated school health: Program planning guide* (Revised edition). Santa Cruz, CA: ETR Associates.

Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (Eds.). (2000). *To err is human: Building a safer health system.* Washington, DC: National Academy Press.

Lear, J. G., Isaacs, S. L., Knickman, J. R. (Eds.). (2006). *School health services and programs.* San Francisco, CA: Jossey-Bass.

Leslie, L., Sarah, R. & Palfrey, J. S. (1998). Child health care in changing times. *Pediatrics, 101*(4), 746–751.

Lohrmann, D., & Wooley, S. (1998) Comprehensive school health education. In E. Marx & S. Wooley (Eds.), *Health is academic: A guide to coordinated school health programs* (pp. 43–66). New York: Teachers College Press.

Marx, E. & Wooley, S. (Eds.). (1998). *Health is academic: A guide to coordinated school health programs.* New York: Teachers College Press.

Maughan, E. (2003). The impact of school nursing on school performance: A research synthesis. *The Journal of School Nursing, 19*(3), 163–171.

McIntyre, C. L., Sheetz, A., Carroll, C., Young, M. (2005). Administration of Epinephrine for Life Threatening Allergic Reactions in School Settings, *Pediatrics, 116*(5),1134–1140.

Mohai, C. (1991). *Peer leaders in drug abuse prevention*. Ann Arbor, MI: School of Education, University of Michigan. (ERIC Document Reproduction Service No. 341892)

Murphy, J., Wehler, C. A., Pagano, M. E., Little, M., Kleinman, R. E. & Jellinek, M. S. (1998). Relationship between hunger and psychosocial functioning in low-income American children. *Journal of American Academy of Child and Adolescent Psychiatry,* 37, 163–170.

Nader, P. R. (Ed.). (1993). *School health: Policy and practice* (5th ed.). Elk Grove Village, IL: American Academy of Pediatrics.

Nader, P. R. (1998 June). *School health: A bridge between public health and health care*. Keynote lecture: George Washington University, School Health Initiative. Retrieved from http://www.healthinschools.org/sh/nader.asp.

National Assembly on School-Based Health Care. (2000). *Principles and goals for school-based health care*. Washington, DC.

National Association of State Boards of Education (2000). *Fit, healthy, and ready to learn: A school health policy guide.* Alexandria, VA: NASBE.

National Center for Chronic Disease Prevention and Health Promotion. (2003). *The critical role of school health programs*. Fact sheet on preventing chronic diseases: Investing Wisely in Health, Revised. Atlanta, GA. Retrieved from http://www.cdc.gov/nccdphp/publications/factsheets/Prevention/pdf/schoolhealth.pdf.

Nicklas, T. A., Johnson, C. C., Webber, L. S. & Berenson, G. S. (1997). School-based programs for health-risk reduction. *Annals of the New York Academy of Sciences*, *817*, 208–244.

Nyswander, D. (1942). *Solving school health problems: The Astoria demonstration.* New York: The Commonwealth Fund.

O'Rourke, T. W. (2005). Promoting school health: An expanded paradigm. *Journal of School Health*, *75*(3), 112–114. PMID: 15966554.

Ouellette, M. (2000, October). *Improving academic performance by meeting student health needs*. Paper: The National Governors' Association. Retrieved from http://www.healthinschools.org/education.asp.

Palfrey, J. S., Haynie, M., Porter, S., Bierle, T., Cooperman, P. & Lowcock, J. (1992). Project school care: Integrating children assisted by medical technology into educational settings. *Journal of School Health, 62*(2), 50–54.

Palfrey, J. S., Sofis, L. A., Davidson, E. J., Liu, J., Freeman, L., & Ganz, M. L. (2004). The Pediatric Alliance for Coordinated Care: Evaluation of a Medical Home Model. *Pediatrics, 113*(5), 1507–1516.

Schutte, E. B., Price, D. L., & James, S. R. (1997). *Thompson's pediatric nursing.* Philadelphia, PA: W. B. Saunders.

Sheetz, A. H. (2002). Developing a strategic plan for school health services in Massachusetts [electronic version]. *Journal of School Health, 72*(7)*,* 278–281. Retrieved from http://www.mass.gov/dph/fch/schoolhealth/shpubs.htm.

Sheetz, A. H. (2003). Developing school health services in Massachusetts: A public health model [electronic version]. *Journal of School Nursing, 19*(4), 204–211. Retrieved from http://www.mass.gov/dph/fch/schoolhealth/shpubs.htm.

Sheetz, A. H. (1998). *Options for developing school health services in Massachusetts*. Boston: Massachusetts Department of Public Health.

Sheetz, A. H. & Blum, P. (1998). Medication Administration in the Schools: The Massachusetts Experience. *Journal of School Health, 68*(3), 94–98.

Small, M. L., Majer, L. S., Allensworth, D. C., Farquhar, B. K., Kann, L. & Pateman, B. C. (1995). School health services. *Journal of School Health,* 65(8), 319–326.

Stock, J. L., Larter, N., Kieckehefer, G. M., Thronson, G. & Maire, J. Measuring outcomes of school nursing services. *Journal of School Nursing, 18*(6), 353–359.

Symons, C. W., Cinelli, B., James, T. C. & Groff, P. (1997). Bridging student health risks and academic achievement through comprehensive school health programs. *Journal of School Health, 67*(6), 220–227.

Taras, H. (2003). Maximizing student health resources [electronic version]. *The School Administrator,* January. Retrieved from http://65.213.205.4/publications/sa/2003_01/Cooper_Taras.htm.

Taras, H., Duncan, P., Luckenbill, D., Robinson, J., Wheeler, L. & Wooley, S. (2004). Guidelines for health, mental health and safety in schools [electronic version]. Retrieved from http://www.schoolhealth.org.

Telljohann, S. K., Price, J. H., Dake, J. A. & Durgin, J. (2004). Access to school health services: Differences between full-time and part-time school nurses. *Journal of School Nursing, 20*(3), 176–181.

Thurber, F., Berry, B., & Cameron, M. E. (1991). The role of school nursing in the United States. *Journal of Pediatric Health Care, 5*(3), 135–140.

Uphold, C. R. & Graham, M. V. (1993). Schools as centers for collaborative services for families: A vision for change. *Nursing Outlook, 41*(5), 204–211.

U.S. Department of Health and Human Services. (2000). *Healthy People 2010* (2nd ed.) with *Understanding and Improving Health and Objectives for Improving Health*. 2 vols. Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (2000). *Reducing Tobacco Use: A Report of the Surgeon General.* Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

Valentine, J. (1997). Schools and communities work together for healthy children. *Wellness Management*, *13*(1), 11.

Wold, S. J. (2001). School health services: History and trends. In Schwab, N. C. & Gelfman, M. H. B. (Eds.), *Legal issues in school health services* (pp. 7–54). North Branch, MN: Sunrise River Press.

Yates, S. (1994). School health delivery programs throughout the United States. *Journal of School Nursing*, *10*(2), 31–36.

Note: PMID number indicates an article has been indexed by PubMed for Medline.

EXHIBITS

Exhibit 1-1 Milestones in Massachusetts School Health

Exhibit 1-1

MILESTONES IN MASSACHUSETTS SCHOOL HEALTH

1850s The Massachusetts legislature required that *"physiology and hygiene shall hereafter be taught in all public schools of the Commonwealth in all cases in which the school committee shall deem it expedient"* and *"all school teachers shall hereafter be examined in their knowledge of the elementary principles of physiology and hygiene, and their ability to give instruction in the same."*

1890s Health inspections began in the Boston schools in an effort to control the spread of serious communicable disease.

1902 The first school nurse was placed in four New York City schools after a settlement house worker found a 12-year-old boy had been excluded from school because of a tiny sore in his mouth. Many states, including Massachusetts, soon followed New York City's lead; the first school nurse in Massachusetts was appointed to a Boston school in 1905.

1912 Massachusetts law required that a physician examine every child in the public schools each year. Medical inspections ranged from a search for major physical defects to a careful assessment of each student's physical, mental, and social potentialities.

1920s Health education was added to the medical inspection and became a responsibility of the school nurse.

1930 *The Handbook on School Hygiene* was published as a reference for administrators, health officers, public health nurses, and others working for the health of the school child.

Late 1960s School-based health centers developed in certain urban, low-income communities around the country where large numbers of children were not receiving any primary care or other preventive services.

Mid-1980s The first Massachusetts school-based health center began in Holyoke, with others soon spreading throughout the Commonwealth. In some locations, the school-based health center has expanded into a family health center located at the school.

1990 The MDPH undertook a large-scale effort to restructure and redefine school health services.

1993 Several regulations and initiatives were established:

- The Massachusetts Education Reform Act required certification/licensure of school nurses, with a BSN requirement for entry into school nurse practice.
- Regulations governing the administration of prescription medications in public and private schools (105 CMR 210.000) promulgated.
- The first School Health Institute was established to provide pertinent continuing education on school health issues.
- DPH began development of a model and standards for community-based school nurse-managed health service programs, consistent with the coordinated school health model. These "Enhanced School Health Services" were later renamed "Essential School Health Services."

1995 The first edition of the Massachusetts *Comprehensive School Health Manual* was published.

1997 The Enhanced School Health Service with Consultation (ESHSC) model was introduced, funding certain ESHS districts to provide consultation to other school districts seeking to develop their school health service programs.

1998 Publication of the Report to the Legislature: *Options for Developing School Health Services in Massachusetts.* This report included recommended school nurse to student ratios.

2000 A requirement was added that each public school district ESHS/ESHSC applicant assume responsibility for beginning to provide basic health services to the nonpublic schools within the community's borders.

2001 More than half of the Commonwealth's children attend schools in communities partially funded under the Essential School Health Service model.

2003 The first asthma surveillance program was initiated for students in the ESHS programs (grades K-8). In 2004, this was expanded to all K-8 schools.

2003 Medication administration regulations were amended to require a report to DPH whenever an Epi-Pen is administered in a school. This amendment was part of the School Health Unit's continuous quality improvement program.

2004 An amendment to Chapter 71, section 57 requires preschool vision screening, to identify children with amblyopia at a time when treatment is most effective.

2004 The Massachusetts School Nurse Research Network (MASNRN), a collaborative venture of Boston College School of Nursing, the Massachusetts School Nurse Organization, and DPH was established to develop research in school health.

2005 The 100th anniversary of school nursing was celebrated in Massachusetts.

2007 The *Comprehensive School Health Manual* was completely revised.

NOTE: To Print this Chapter, turn on Auto-Rotate in your Print Dialog Box

Chapter 2

DEVELOPING AN EFFECTIVE SCHOOL HEALTH PROGRAM

Comprehensive School Health Program Advisory Committee

School and Community Health Assessment

Program Planning and Implementation

Emergency Management Basics and Planning

School Health Facilities

School Health Records

School Health Data and School Health Information Systems

Establishing Community Connections

Evaluation of the Health Program

Summary

Resources: Massachusetts Agencies and Organizations

Resources: National Agencies and Organizations

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 2

DEVELOPING AN EFFECTIVE SCHOOL HEALTH PROGRAM

This chapter describes strategies for developing a coordinated school health and human services program, which encompasses the 9 components of school health described in Chapter 1. Although all components are mentioned in this chapter, the main focus is on health services. The other components are addressed in greater detail in later chapters.

A comprehensive, coordinated school health and human services program:

- focuses on health needs of students;
- employs multiple methods and approaches;
- considers a diversity of health issues in the community;
- engages those most affected by the program; and
- involves specially trained staff to deliver the program.

Establishing an effective school health service program maximizes students' educational experience, while providing a safe, caring, healthful environment for both students and staff. An effective health service program includes the following components:

- ***A qualified school nurse leader*** (DOE licensed with a baccalaureate or, preferably, a masters degree in nursing), who is relieved from direct services to students and is employed fulltime in the designated role. The nurse leader is a member of the administrative management team and has responsibility and authority for the entire district's school health service program.
- ***A health coordinator*****,** who is responsible for coordinating the implementation of the health education and prevention programs, collaborating with other members of the team, including the school nurse leader.
- ***A comprehensive school health advisory committee*****,** which includes broad internal and community representation, reviews the needs assessment, goals, and objectives; monitors program effectiveness; and provides recommendations for policy and program development and/or improvement.
- ***A school and community health needs assessment*****,** which evaluates the health status of the students and the broader community, promotes ongoing health condition surveillance, identifies and prioritizes health issues to be addressed, and follows the CDC model of comprehensive, coordinated school health.
- ***A planning and implementation process*****,** based on the results of the needs assessment, which identifies key steps, involves essential disciplines, and develops a plan.
- ***An action plan*****,** which addresses health needs and disparities and provides a vision (with goals and objectives) and appropriate strategies to improve student health and reduce disparities.
- ***Interdisciplinary collaboration*****,** which involves personnel from all areas of the school, as well as relevant community resources, and encourages them to work together to improve school health and human services.
- ***Safe and effective staffing patterns for school health personnel*** engaged in

comprehensive, coordinated health services, health education, and behavioral health services.

- ***Inter-agency agreements*****,** which clarify the working relationships between the school and community-based agencies providing school health or human services.
- ***A skills based health education program,*** grades pre-kindergarten to twelve, based on the Massachusetts Health Curriculum Frameworks.
- ***Models for delivery of services*****,** which describe possible ways to deliver school health and human services, such as through a basic essential model (school nurse working with a school physician), a school-based health center, or a family health center.
- ***Policies and protocols for decision making*** and implementation of program plans.
- ***Planned, written protocols for emergencies*** (individual or group emergencies, disasters, and bioterrorism events). These include preventive activities, post-event recordkeeping/documentation, and plans for implementing mock drills.
- ***School health facilities*** to address the diverse and complex health service needs of large populations of students and school personnel.
- ***School health records*****,** which provide an accurate, cumulative, specific, objective, and confidential record of each student's health status. (These records should be computerized.)
- ***Information for parents, students, and other consumers*** describing the mission and services offered by the health service program.
- ***Program evaluation protocols*** that document and evaluate the comprehensive, coordinated health program, while measuring success through both process and outcome indicators. This includes ongoing quality improvement to assess the results of interventions. Ongoing client satisfaction surveys are essential.
- ***Data collection and analyses*** to track important health indicators, identify potential outbreaks, interpret program activity to decision makers, identify the need for new programs or strategies, prepare budgets, and document health system changes. This includes population-based surveillance of conditions such as asthma and life-threatening allergies.

This chapter provides guidelines for implementation and explains why each of these components is critical to a comprehensive, coordinated school health and human services program. The order of the list above does not necessarily imply the order in which the components should be implemented. Some components, especially the needs assessment, should occur prior to addressing other components; others may take place concurrently. Typically, the following sequence is followed:

> Establish advisory committee → Assess health status of school and community → Identify health disparities and risk factors → Develop a strategic plan (action plan) → Implement program → Evaluate program → Reassess, modify, and implement revised plan.

COMPREHENSIVE SCHOOL HEALTH PROGRAM ADVISORY COMMITTEE

A district-wide school health advisory committee is an essential component of a successful, comprehensive, coordinated school health program. A committee's collective knowledge, expertise, influence, and advocacy can be a powerful force on behalf of the program. As a district-wide advisory body, the committee can identify health and social problems related to the community's youth, develop viable solutions, and identify key resources. Responsibilities may include the following:

- assisting in the development of a school and community needs assessment to identify student health needs;
- aligning the comprehensive health curriculum with Health Curriculum Frameworks;
- reviewing local, state, and federal requirements related to school health services;
- developing and/or reviewing program guidelines in such areas as environmental health, health appraisal, communicable disease control, physical education, emergency health care, bioterrorism planning, and a comprehensive health education curriculum, with a focus on prevention;
- developing and/or reviewing guidelines for the health service program goals and objectives, as well as policies and protocols for personnel, facilities, and supplies;
- making recommendations to the school committee, or designee, on school health issues;
- serving as an advocacy group for improved school and community health services;
- identifying and developing resources for the school health program; and
- participating in evaluating the outcomes and effectiveness of the program.

The committee needs a chairperson to organize the agenda and schedule the meetings. In many school districts, the health coordinator and nurse leader jointly assume this responsibility. Membership of the committee will include both internal and community representatives. Ideally, the following from the school community should be included:

- parents/guardians;
- students;
- school nurse leader;
- the health and human services coordinator;
- school nurses;
- school physician;
- school-based health center (SBHC) staff, if the school has an SBHC;
- members of the administrative, teaching, and counseling staffs;
- safe and drug-free school coordinator;
- food service director;
- health educators representing elementary, middle, and high school levels;
- physical educators;
- special educators;
- athletic director; and
- school committee representatives.

In addition to the above-mentioned participants, membership may be open to other community representatives interested in school health issues: board of health officials; local and regional health and human service providers; state agencies; primary care providers; members of business, faith-based, and service organizations; members of the police and fire departments; and other local officials. The practical size limit for a workable committee is approximately 20 people. Because the committee should promote and encourage links between the school and the community, it should strive for a diverse and sizable representation. This will enable new voices to be heard and new ideas to be shared.

The entire committee should meet as necessary, but at least quarterly. Meetings should be scheduled at times and locations that are most convenient for members, and agendas should be planned and distributed prior to the scheduled meeting date. It may be important to prepare some members in advance to make them feel comfortable and to encourage participation during meetings. For example, parents who have not had experience serving on committees or whose first language is not English may wish to be contacted and briefed by the school prior to attending their first advisory committee meeting.

The committee may wish to organize small work groups that are project specific or establish standing subcommittees in such areas as health policies, health curriculum, violence prevention, emergency preparedness, and/or nutrition/physical activity programs.

SCHOOL AND COMMUNITY HEALTH ASSESSMENT

In collaboration with the school health services staff, one of the major tasks of the school health advisory committee is to identify the need for school health services. The advisory committee also identifies the feasibility of obtaining resources for programs, projects, curricula, and/or materials, while helping the school committee or its designee set priorities. The health needs of the general student population in the school district — as well as specific populations (such as children with life-threatening allergies or those at risk for overweight or type II diabetes) — must be clearly documented and not simply presumed to exist. Specific programs and/or curricula are then implemented in response to the student population's health needs.

An advisory committee may recommend needs assessment protocols, with the actual assessment implemented by a subgroup of the advisory committee, an outside consultant, the nurse leader, health coordinator, or a school administrator. A needs assessment may be conducted through surveys of school staff and community members, face-to-face or phone interviews, and/or focus groups. Reviewing health statistics from state (e.g., MassCHIP, birth, death, emergency room visit data) and local sources, as well as relevant research results, is also important. Consultation may be obtained from experts on content and proposed methods.

A needs assessment aims to answer questions such as:

- What are the demographics (e.g., cultural, linguistic, economic, social) of the school population?
- What data on health status (e.g., teen pregnancy, school drop-out, asthma, overweight, communicable disease rates) are already available from local and statewide sources?
- Do health disparities exist in the student population?
- What health issues and problems (e.g., peer violence, depression, asthma, overweight, anorexia) are identified by students, parents, faculty, and administration?

Exhibit 2-1 contains a sample school and community needs assessment instrument. The DPH and DOE issue health status reports annually that will be helpful in assessing local health needs. The Centers for Disease Control and Prevention also have developed useful needs assessment instruments, such as the School Health Index (see Exhibit 2-2 for more information about this tool, which is available online at http://apps.nccd.cdc.gov/shi/).

PROGRAM PLANNING AND IMPLEMENTATION

After the school and community health assessment is completed, the advisory committee will discuss the findings and share them with appropriate school and community officials, such as school committee members, the superintendent, principals, the local board of health, health educators, pupil personnel services coordinator, special education director, local health providers, and human service agencies, as well as parents/guardians. Based on needs assessment results and community priorities, the committee will recommend action steps and assist the school department in the development and implementation of program plans.

Vision Statement and Logic Model

As the advisory committee and school department develop a plan for the school health program, it may be helpful to construct a vision statement, with goals that include desired changes or objectives. One example of a vision statement is: "Students and staff will improve their nutritional habits." An even more specific statement is, "Students and staff will reduce their lunchtime fat and sugar intake by 15% during year 1 of the program." Vision statements evolve from a focus on the most important health issues and specific health status disparities identified by the committee during the needs assessment process.

Once a vision statement has been developed, it may be helpful to construct a logic model. A logic model is a systematic and visual way to describe the sequence of activities that will bring about change and explain how a program is expected to work or achieve results. It illustrates the relationships between the various components of a program:

Inputs – the resources used to conduct a program
Activities – the specific actions a program carries out
Outputs – the products created by the activities of a program
Outcomes – the results or changes a program achieves

In some logic models, **influential factors** or **contextual enablers** and **barriers** are identified as variables that pertain to the environmental conditions in which a program operates. Although these variables are often not under the control of program staff, they can have a significant impact on the success of a program. Examples include political influences, social norms, history, and socioeconomic factors.

Although some logic models include all outcomes in one category, it is often helpful to distinguish between outcomes that are likely to occur early in the program and those that may take years to achieve. In doing so, it is easier to determine what initial outcomes are necessary to achieve final outcomes and, as those early outcomes are accomplished, to document progress in attaining the program's overall purpose. In general, outcomes can be divided into 3 categories:

- **Initial or short-term outcomes** – changes in awareness, knowledge, or attitude
- **Intermediate or mid-term outcomes** – changes in behavior, actions, or policy
- **Long-term outcomes or impact** – changes in systems and improvement in conditions

Logic models are developed in many different formats and vary considerably in their level of complexity, depending on the specific function of a program or project. An example of a logic model for a school-based asthma program is presented in Exhibit 2-3.

Some helpful online resources for developing goals and objectives, as well as logic models, are:

- http://www.gse.harvard.edu/hfrp/pubs/onlinepubs/rrb/learning.html
- http://www.wkkf.org/Programming/ResourceOverview.aspx?CID=281&ID=3669
- http://national.unitedway.org/outcomes/resources/
- http://www.healthypeople.gov/state/toolkit/
- http://www.uwex.edu/ces/pdande/evaluation/evallogicmodel.html
- http://www.ces.ncsu.edu/depts/fcs/pub/2002su/betts.html

Action Plan

In addition to defining the vision and mapping the rationale and expected results, programs require action plans. An action plan is a project management tool that shows, often through a set of program objectives and a timeline or task outline, what *staff or others need to do* to implement a program. Exhibits 2-4 and 2-5 contain a sample action plan and a sample form that may be used for developing one.

Interdisciplinary Collaboration

Interdisciplinary collaboration (in the context of comprehensive, coordinated school health and human services) involves personnel from all areas of the school working cooperatively to deliver health education and services. In addition, it involves working with community partners that have a stake in the health of children, adolescents, and their families, such as the local board of health, public safety, primary care providers, insurers, civic associations, faith organizations, and business leaders. Interdisciplinary collaboration can provide many advantages and opportunities, including the following:

- Participants bring a range and depth of experience, skills, expertise, and creativity, which are helpful in supporting and guiding all aspects of a school health program, from obtaining appropriate services for an individual student to revamping the entire school health program.
- Collaboration reduces duplication of efforts and services.
- Collaboration increases the ability to track outcomes. For example, when an interdisciplinary team focuses on a particular at-risk student, he/she is more likely to be tracked for referral and support, rather than lost to follow-up.
- Involvement of parents/guardians, students, and other members of the community ensures that key resources and concerns from the community are brought to the school's attention.

There are both formal and informal mechanisms for interdisciplinary collaboration in a school and within a community.

Formal Collaboration

Formal collaboration typically occurs in 3 ways:

(1) *An organized team meets regularly to identify and address issues*. An example of this type of collaboration is a case management team that explores the needs of students who are identified as “at educational or health risk” and develops a plan to meet an individual student's needs through referral, onsite support services, or both. In some school districts, such a team meeting may also be known as a “pre-referral” team.

The identification and referral program, described in Exhibit 2-6, is an example of an organized team. Other examples include IEP Teams, which complete Individual Education Plans (IEPs) for special education students, and student assistance teams, which provide referral and support focusing on substance abuse and addiction.

Some members of the case management team may be permanent; others may have limited terms or be included with the understanding that participation is on an as-needed basis. For example, the school nurse should routinely be notified of all IEP meetings and other support meetings so that she/he may attend if there are any physical and/or behavioral health issues that may impact educational outcomes.

Usually one team member has primary responsibility for the student. Permanent members of this team may include the principal and/or director of discipline, guidance counselor, school psychologist, and school nurse. Temporary or ad hoc members may include educators, parents/guardians, and experts from the community, such as parole officers, staff from the Department of Youth Service (DYS), and law enforcement representatives. Parent attendance is considered essential for the IEP teams, whereas they are not part of the child study teams.

(2) *An "ad hoc" team is formed to address a specific health or behavioral problem and disbands when the issue is addressed or problem resolved*. For example, a team may be organized to deal

with increased numbers of injuries on an elementary-school playground. Such a team might include the principal, the school nurse, educators, playground monitors, custodian, and parents/guardians.

(3) *Two or three people in the school meet formally on a regular basis to share information and discuss common issues, concerns, and problems*. For example, the school nurse and athletic director may meet quarterly to review the status of sports physical examinations. Or, the school nurse may meet monthly with the director of special education services to review any health challenges that may influence adherence to a student's individualized educational plan (IEP), as well as to integrate the individual health care plan (IHCP) into the IEP.

Informal Collaboration

Informal collaboration occurs on a temporary, as-needed basis for information exchange, as when the school nurse informs (while adhering to protocols for confidentiality) the physical education teacher that a particular student may not participate in athletic activities because of a recent injury.

Examples of Collaboration

Collaboration may occur in the 9 key areas of a comprehensive, coordinated school health and human services program, as shown below (see also Chapter 1). Several examples of collaborative initiatives are included for each area, along with **starter lists** of suggested participants.

Note:

- Proactive administrative support is critical to the success of all initiatives such as those described below. This may include (a) providing staff with preparation time and resources, (b) participating in planning committees, and (c) garnering support from the school committee and community.
- An active school health advisory committee, often co-led by a health coordinator and school nurse leader, with school committee and community representation, should be involved in most initiatives relating to a comprehensive, coordinated school health and human services program.
- If there is a school-based health center (SBHC) in the school, the SBHC staff should be included in any health-related collaborations and committees.

(1) Health Education

- **Develop, review, and revise health education curriculum.**
  Suggested participants: Health educator, school nurse, behavioral health specialist/counselor, administrator in charge of curriculum, and other school health personnel, in consultation with the school health advisory committee.
- **Co-sponsor health fairs with external agencies.** Examples of external agencies include local chapters of the American Lung Association, American Heart Association, Youth and Family Services, and Melanoma Foundation of New England. The health fairs may target specific populations, such as students, educators, parents/guardians, and the community.
  Suggested participants: Health educator, school nurse, behavioral health specialist/counselor, athletics staff, food service, and other school health personnel, with consultation from the school health advisory committee.

(2) Physical Education

- **Ensure that all students have physical examinations prior to participation in competitive sports.** This is required by M.G.L. c.71, s.57, and 105 CMR 200.00, as well as the Massachusetts Interscholastic Athletic Association (MIAA).
  Suggested participants: Physical educator, athletic director, and school nurse.
- **Promote the benefits of wellness programs for students and staff.** Such programs may include healthy nutrition and exercise (e.g., walking programs).

Suggested participants: Physical educators and health educators can partner with the school nurse and food services personnel.

(3) Health Services

- **Document and present to the community, as well as to local health providers, the results of a health needs assessment of the student population; include recommended interventions in the presentation**.
  Suggested participants: School nurses, school physician, and behavioral health specialists/counselors, in collaboration with community health care providers.
- **Establish building-specific and district-wide emergency plans, including plans for multicasualties, terrorism events, and crisis issues within the school population.**
  Suggested participants: School nurse; school physician; behavioral health specialists/counselors; local, state, and federal emergency medical services; board of health; and police and fire departments.

(4) Nutrition Services

- **Offer students meals based on nutritional guidelines and recommended standards.**
  Suggested participants: Food service personnel, school nurse, school physician, budget officer, educators, principal or his/her designee, school administrators, and local food suppliers.
- **Ensure a safe environment for students with life-threatening food allergies.**
  Suggested participants: School nurse, school physician, food service personnel, educators, custodians, bus drivers, and so forth, in collaboration with parents/guardians and community primary care providers.

(5) Health Promotion for Staff

- **Coordinate community resources to provide school-site prevention programs, such as weight reduction classes.**
  Suggested participants: School nurse, health educator, physical educator, and community organizations (e.g., weight reduction organizations for youth, adults, and family groups).
- **Organize a support group for staff who are caring for their elder parents**.
  Suggested participants: School nurse, physical educator, behavioral specialists/ counselors, and community organizations (e.g., local elder and/or family services).

(6) Counseling and Psychological Services

- **Work with the school administration and faculty to promote respect within the school culture and implement interventions should bullying occur.**
  Suggested participants: School administrators**,** behavioral health specialists/counselors, school nurse, educators, student peer support groups, and external community program resources.
- **Support re-entry of students who have been excluded from school for any reason (e.g., substance abuse treatment, depression, acts of violence).**
  Suggested participants: Behavioral health specialists/counselors, school nurse, school administrators, special education director, student peer support groups, educators, and external community program resources.

(7) Healthy School Environment

- **Implement a program such as the Environmental Protection Agency's "Tools for Schools" to prevent and/or identify air quality problems.**

Suggested participants: Facilities managers, school administrator, bus companies, school nurse, school physician, and school budget officer.

- **Ensure that facilities are inspected regularly for safety and handicap accessibility.**
  Suggested participants: Facilities manager, school administrator, local fire and law enforcement, school nurse, school physician, physical educators, playground monitors, science/lab instructors, and so forth.

(8) Parent/Community Involvement

- **Develop communitywide initiatives to address overweight issues.**
  Suggested participants: Physical educator, health educator, athletic director, school nurse, behavioral health specialists/counselors, representatives from the mayor's office/town selectmen, parents/guardians, students, local health care providers (e.g., hospitals, clinics), and so forth.
- **Establish a communitywide effort to promote skin cancer prevention.**
  Suggested participants: Health educators, school nurses, physical educators, athletics director, coaches, after-school program advisors, facilities managers, parks and recreation director, board of health, local dermatologists, and representatives from organizations (e.g., the Melanoma Foundation of New England).

(9) Family and Consumer Science Education

- **Implement a curriculum assisting students to be knowledgeable and media-literate consumers.**
  Suggested participants: Health educators, family and consumer science educators, representatives from local businesses, school nurse, school physician, and representatives from the local media.
- **Promote student awareness of the decision-making process involved in legislation that affects consumers**.
  Suggested participants: Family and consumer science educator, school administrator, health and other educators, school nurse, and representatives from local and state government.

Staffing Patterns for School Health Personnel

A school district may employ a variety of staff that are licensed (certified) by the Massachusetts Department of Education as regular employees or as external contractors. (See Chapter 13 for laws requiring criminal background checks and CORI requirements.) Each school and/or school district must provide written position descriptions and an organizational chart that defines reporting relationships and supervisory authority of the comprehensive health and human services staff. In some school districts, staff may serve dual roles (e.g., as school nurse leader and health coordinator). Such staff members typically have either two position descriptions or one description that synthesizes the responsibilities of both roles.

School health education and human services program staff typically fall into at least 5 categories:

(1) **School Nurse Leader** has the responsibility and authority for managing the school health services program. The School Nurse Leader should have at least a baccalaureate in nursing (master's degree is preferred), a current license to practice nursing in the Commonwealth of Massachusetts, and a current license (or eligibility for licensure) as a "school nurse" from the Massachusetts Department of Education. An individual holding this position should be employed full time in her/his designated role, relieved from direct care. She/he should be a member of the school's administrative management team and have responsibility for the district-wide school health service program, staff, and budget. In those school districts with an Essential School Health Service grant, the Nurse Leader also manages the grant, collaborating with the school

building principals to implement the health service program and evaluate the school nurses.

(2) **Health Services Staff** may include the school nurses, school physician consultant, health aide, school nurse practitioner, and health education/human services coordinator. Each school system develops its own position descriptions for these roles. Exhibits 2-7 through 2-12 present sample descriptions for general school health services staff.

School nurses: The foundation of the health services program consists of the school nurse(s). They are required to be registered nurses with a Bachelor's or Master's of Science in nursing and be licensed (certified) by the Massachusetts Department of Education. (See http://www.doe.mass.edu/lawsregs/603cmr7.html for complete requirements.)

The school nurse is a public health nurse, responsible for the health of the population of children in the specific school building(s) to which she/he is assigned. In this role, the nurse serves as clinical expert, service provider, and health program manager in the educational setting. By necessity, the school nurse must maintain a wide range of skills including, but not limited to, clinical, public health, and managerial skills. Ideally, the number of school nurses (registered nurses meeting the licensure requirements of the Massachusetts Department of Education) responsible for the school health services program should be determined by a needs assessment of the health status of the student population/community. When data on the health needs of local students are not readily available, regional or statewide health status data may provide a useful starting point for planning the staffing patterns.

In the 1998 Report to the Massachusetts Legislature, *Options for Developing School Health Services in the Commonwealth of Massachusetts,* the Department of Public Health recommended the following:

- One fulltime equivalent (FTE) licensed school nurse for each building (both public and nonpublic) with 250 to 500 students;
- An additional 0.1 FTE for each additional 50 students in buildings with more than 500 students; and
- 0.1 FTE for each 25 students in buildings with fewer than 250 students.

When developing staffing plans, other factors to consider include the number of children with special health care needs, the number of buildings, and distance and/or travel time between buildings.

Licensed Practical Nurses: The Massachusetts Department of Education defines the requirements for school nurses. While Licensed Practical Nurses (LPNs) do not meet the DOE licensure requirements and therefore are not school nurses, they may perform other roles. In some school districts, an LPN may provide care to a child who needs a one-to-one nurse, based on the school nurse's assessment of the appropriate level of care.

Note: In such situations, the LPN, under her/his license, may administer prescription medications, but only under the supervision of the school nurse. This is a requirement of the Regulations Governing the Administration of Prescription Medications (105 CMR 210(I), which states:

> "For the purposes of 105 CMR 210.000, a Licensed Practical Nurse functions under the general supervision of the school nurse who has delegating authority."

School Physician/Medical Consultant: Under M.G.L. c.71, s.53, each public school district must also appoint a school physician who provides medical consultation and acts as a liaison to community primary care providers. The Department recommends that the school physician be board certified in a specialty appropriate to school-age population (e.g., pediatrics, family practice, adolescent medicine). (See Exhibit 2-9 for the Template for the Massachusetts School Physician/Consultant Role.)

Other: Additional staff may include health aides/health assistants and technology and clerical support. In some schools, a health aide performs support activities (such as recordkeeping and vision and hearing screening) under the supervision of the school nurse. As management information technology and data requirements expand, many school districts are also obtaining additional technical assistance for the program data and evaluation systems.

(3) **School Counseling and Psychological Services Staff** includes school guidance counselors, adjustment counselors, social workers, and psychologists. See Chapter 11 or the licensure section of DOE's website (http://www.doe.mass.edu/Educators/licensureregs.html) for licensure requirements.

(4) **Comprehensive Health Education/Physical Education Staff** bring the school health program into the classroom through standards-based instruction and a focus on teaching the skills to promote health literacy. Licensure (certification) to teach health education full time in schools is currently covered by an all-levels Health/Family and Consumer Sciences license. Educators holding older but active Health Education certificates for grades K-9 or 5-12 are also qualified. Elementary- (grades 1-6), middle- (5-8), and high-school educators (9-12) may teach health education for up to 20% of their time, but they should have knowledge of the field of health, skills-based instruction, curriculum content, and methods of teaching health before being assigned that responsibility.

Community-based health educators sometimes work with the schools, as well as in community settings. Although they are usually not licensed educators, they may hold national certification as a Certified Health Education Specialist (CHES).

Health Coordinators are responsible for the PreK-12 comprehensive school health and health education program, including training and ongoing support; not all school districts have a staff person officially designated as Health Coordinator (see Chapter 3).

(5) **External Contractors** may include mental health workers, substance abuse counselors, physical therapists, occupational therapists, nutrition counselors, and speech and language pathologists.

External Inter-Agency Agreements

Typically, a formal written agreement is required whenever school health or human services are provided by an agency other than the school department itself. This agreement, sometimes called a "memorandum of agreement" (MOA) or "memorandum of understanding"(MOU), clarifies the responsibilities of each party. Examples of such agreements are ones between (a) a school department and board of health, (b) a public school district and a nonpublic school, (c) a school department and a visiting nurse association or other community service agency, (d) a school department and a local hospital or health center, and (e) an education collaborative and the school district. Other agreements may be needed by transportation companies, external agencies sponsoring before- and after-school programs, or community organizations using the school facilities

before or after school hours. These agreements may state what health services will be provided, such as staff trained in first aid or the use of epinephrine for students with life-threatening allergic conditions. Such agreements provide effective mechanisms for collaboration between the various agencies. Agreements should be reviewed by the school legal counsel for compliance with federal, state, and local laws and regulations. Exhibit 2-13 shows a sample formal written agreement.

Models for Delivery of Services

There are several different models for the delivery of school health and human services, including the *basic essential school health service model* and the *school-based health center*s.

Basic Essential School Health Service Model

The most common model, the basic essential school health service model, consists of a school nurse leader, school nursing staff, a school physician consultant, and other clinical support staff such as behavioral health workers, occupational therapists, physical therapists, and health assistants. The staff are either employed by the school department or by the local health department. In some communities, where accessibility to primary care is an issue, school-based health centers may be established after the basic essential school health service program is implemented. These centers provide primary health care in the school setting.

The basic essential model should apply to all school districts within the Commonwealth and includes the school nurse leader as the manager of the program. The nurse leader ensures consistency of nursing standards, policy development, program implementation, and employment practices across the district. She/he is also responsible for collaborating with other disciplines to plan and establish a comprehensive school health program.

The implementation of the Essential School Health Service (ESHS) Programs was originally funded by the tobacco excise tax and tobacco settlement funds. The ESHS guidelines have been refined and implemented in more than 100 school districts throughout the Commonwealth and have become a template for all of the Commonwealth's school health service programs. ESHS Programs must satisfy specific requirements in 4 areas:

(1) strengthening the administrative infrastructure of the school health service program (nurse leader, staffing requirements, health assessments, policies, emergency care, individual health care plans, etc.);
(2) ensuring implementation of comprehensive health education, including tobacco prevention and cessation programs;
(3) linking school health service programs with community-based health providers, local youth-serving agencies, and public health insurance programs; and
(4) developing management information systems that will help to effectively describe and monitor the program.

Guidelines and detailed information about grant requirements are available online at http://www.mass.gov/dph/fch/schoolhealth/eshs.htm.

Because the ESHS programs are a community model, each school district receiving funding must provide, as a beginning step, basic health services (health screenings, immunization reviews, identification of primary care providers, individualized health care planning, etc.) to the nonpublic and charter schools located within their borders, if this collaboration is agreed upon by the parties. Nonpublic/charter schools must comply with minimum safety standards and must support the school nursing services. The future goal is that all children, whether enrolled in public or nonpublic schools, will have the same level of high-quality school health services.

School-based Health Centers (SBHCs)

In certain schools, after the basic essential school health service program is developed, the health

needs of the students may necessitate consideration of a school-based health center; school nurses should always be involved in these decisions. School-based health centers are primary care clinics located on the campus of an elementary, middle, or high school. In Massachusetts, they are licensed satellite clinics of community health centers or hospitals (parent organizations) and are required to meet certain standards. An SBHC provides comprehensive primary care, in a school setting, for those students who lack access to care. In addition to improving access to primary care, an SBHC promotes positive health behaviors and increases student health knowledge and decision-making skills. Education-related goals include improved involvement in the educational process, decreased absenteeism, and an increased student graduation rate.

The SBHC model of care first emerged in the early 1970s in California and Texas and developed in Massachusetts during the 1980s. The model was initially implemented to meet the health care needs of adolescents, a group that typically engages in high-risk behaviors, often has complex medical and social needs, and tends to use physician services less frequently than all other age groups. The SBHC is one strategy for decreasing barriers to care for this age group. These barriers may include discomfort in conventional health care settings and inability to access care during and after school hours. Although the SBHC model originally developed in high schools, it has also proved effective in providing accessible primary care to students in elementary and middle schools.

Although an SBHC may offer certain services similar to those of the basic essential school health services, such as health promotion, it differs in some important respects. The SBHC offers primary care, including diagnosis and treatment, counseling, referral, and follow-up. The SBHC provides primary care to those students enrolled in the SBHC program (i.e., those who have the necessary consent forms signed), whereas the basic essential school health services provide services to all students in the school. Usually the SBHC's target population is students who either lack or do not regularly visit a primary care provider.

Students enrolled in an SBHC receive their care from a multidisciplinary team of professionals, typically including nurse practitioners, physicians, physician assistants, social workers, and counselors. SBHCs focus on preventive health care and offer services that are comprehensive, accessible, and developmentally appropriate. The SBHC, with its parent organization, provides a mechanism to ensure continuity of care during periods when the SBHC is closed, such as evenings, weekends, and school vacations.

The Department of Public Health, in collaboration with MassHealth, has developed quality standards for SBHCs. The standards development project was part of a larger MassHealth project to improve access to comprehensive health care for children and adolescents in Medicaid managed care programs. Compliance with established standards will ensure provider ability to maximize third-party reimbursement for SBHC services.

If a school is planning an SBHC, it is essential, at the onset, to include the participation and support of the school administration, the nurse leader, the school nurse, school physician, students, parents/guardians, community providers, and other organizations that serve youth. SBHC programs should complement existing school and community health and social services. SBHC staff must work collaboratively with the school health services program and the community. Mechanisms for joint planning and daily communication regarding the health issues of students are vital to achieving success.

Policies and Protocols

General Guidelines

School departments require well-defined school health policies and protocols. A policy is a guide for

decision making within an organization — a rule for action. A protocol is a sequence of steps that should be followed in implementing policies or plans. Whereas policies are broad, allowing flexibility, protocols are specific and detailed. Both require signed and dated review and revision at least every 2 years, and more frequently as needed.

The process of developing and disseminating school health policies helps both staff and community to clarify the vision of school health. It also provides an opportunity to plan for health improvement. Well-defined school health policies are critical to a highly-functioning school health program.

Policies are not developed in a vacuum. They may be based on federal, state, and local laws or regulations; on standards established by state agencies, such as the Massachusetts Department of Education, Massachusetts Department of Public Health, or the Board of Registration in Nursing; or on standards set by professional organizations, such as the American Nurses Association (ANA), National Association of School Nurses, American Academy of Pediatrics, American School Health Association, and American Alliance for Health, Physical Education, Recreation, and Dance. Codes of ethical conduct for the various professions are also honored when developing policies (e.g., the ANA's Code for Nurses, included in Exhibit 6-1, at the end of Chapter 6). See Exhibit 5-1 in Chapter 5 for the Overview of Basic Required School Health Services.

In addition to following federal and state statutes and standards, school health policies are based on a school district's philosophy and the community's values and beliefs. This should be the case, even if a policy is developed only for a particular school. Some school policies may be long-standing, such as maintenance of health records, whereas others may be newly developed in response to emerging issues. Examples of areas where recent events have focused attention on the need for development of school policies are emergency preparedness for multicasualty incidents, sun safety, and promotion of a positive, respectful climate.

Approval and Communication on Policies and Protocols

Schools need to establish mechanisms for policy development. A policy-making body may be a subcommittee of the school health advisory committee. It should include the stakeholders affected by the policy. For example, a policy-making committee for removal of infectious disease waste from the schools might include the school administrator, school nurse, school physician, facility management services, faculty, students, parents/guardians, and the local board of health.

Generally, policies are reviewed by local legal counsel prior to the required approval by the school committee. In cities or towns where the board of health participates in the provision of school health services, the board is also involved in the approval process, including the signing and dating of policies. After development and/or revision and subsequent approval, health policies should be disseminated and/or communicated to all pertinent school staff, health staff, parents/guardians, and students. In addition, a copy of the health policy manual should be made available for review by any interested parent/guardian or student. Whenever possible, the local media — newspapers, radio and television stations, and cable television providers — should publicize important new policies.

Policy and Protocol Manual

Each school district typically has a policy and protocol manual for school health services, containing the relevant district- and school-specific information about the school health program. A loose-leaf format permits addition of new pages with new or revised policies, the removal of outdated content, and the inclusion of relevant forms in each section. Exhibit 2-14 includes a sample outline for a comprehensive policy and protocol manual. A school district just beginning to develop a manual will need time to include all these policies.

Note: Because the policies and protocols in this manual are not copyrighted, they may be adopted by school districts and placed on district letterhead.

EMERGENCY MANAGEMENT BASICS AND PLANNING

A health emergency may occur in any school, at any time. Sometimes the risk is predictable, but often it is not. As more children with special health care needs are integrated into community schools (see Chapter 7), there is increased likelihood that some of these children will need emergency care. However, students with no history of health problems can also become seriously ill or injure themselves in a number of settings, including playgrounds, classrooms, laboratories, or workshops. Students are also at an increased risk for violence-related injuries and/or emotional crises, including depression and suicide attempts. Furthermore, although the natural tendency is to think first of students when considering risk of illness or injury, adults (educators, administrators, support staff, etc.) may also be susceptible. Beyond individual health emergencies, there is also the possibility of disasters — ranging from extreme weather conditions to acts of terrorism — which may precipitate group emergency situations resulting in multiple casualties. In cases of illness, injury, or other emergency, efficient and effective school procedures are essential.

Responding to Emergency Situations

Categories of Emergency Injuries and Conditions

Emergencies may be classified into 3 major categories:

- **Life-threatening or potentially disabling**: Because these emergencies can cause death or disability within minutes, they require immediate intervention, medical care, and, usually, hospitalization.
- **Serious or potentially life-threatening or potentially disabling**: Because these may soon result in a life-threatening situation or may produce permanent damage, they must be treated as soon as possible.
- **Non-life-threatening**: These are defined as any injury or illness that may affect the general health of a person (e.g., fever, stomachache, headache, seizures, fractures, cuts). The student should be evaluated by a licensed provider as soon as the parents/guardians are notified, or certainly within a few hours.

Note: Anaphylaxis is one of the most serious and life-threatening emergency situations to which school personnel may have to respond. Please refer to Chapter 7 for a detailed discussion of life-threatening allergic conditions and to Chapter 6 for a discussion of regulations governing the administration of epinephrine by unlicensed personnel.

Emergency plans should be posted with clear instructions on how to activate the local emergency medical services (usually calling 911). In either a life-threatening or potentially disabling situation, it is important to:

- remain with the student and remain calm;
- avoid moving the ill/injured person, unless there is more danger if left in that location;
- assess the emergency at hand;
- activate the emergency plan (referring to the student's individual emergency plan and individual health care plan, if appropriate);
- notify the school nurse;
- notify the EMS;
- notify parent/guardian;
- notify school administration;

- notify student's primary care provider and/or specialist;
- manage crowd control;
- direct EMS to site;
- accompany student to emergency facility, with EMS if appropriate; and
- assist student's re-entry into school.

Note: Many of the above actions are performed concurrently. Also, although the list above refers to students, the same guidelines would apply to situations affecting staff or visitors.

When emergency services are required for life-threatening or potentially disabling situations:

- Direct a responsible person to call the Emergency Medical Services (EMS). The EMS phone number MUST be prominently displayed near all phones.
- Instruct the person placing the emergency call that he/she MUST stay on the phone until it is certain that EMS has all necessary information. The person placing the call should also:
    - briefly describe the emergency situation (what is wrong);
    - state his/her name as well as the name, exact address, and phone number of the school;
    - give simple, specific directions;
    - specify the exact location within the school of the ill/injured person;
    - tell EMS that he/she will meet them at a specific entrance of the school; and
    - call back for reassessment if necessary (e.g., person has stopped breathing).

Note: Because school phone lines are often busy, DPH recommends that schools install an "override" for an extra outside line for use during an emergency. **There should be no delay in calling 911 in a medical emergency.**

Unless the nature of the illness/injury is minor, it is prudent to activate the local EMS system. If the injury/illness is later determined by the school nurse or other trained personal to be relatively minor, the EMS response can be canceled or the EMS units can clear the scene after evaluating the situation.

In dealing with life-threatening or potentially disabling injuries/illnesses or serious injuries, school personnel should attempt to notify the parent or legal guardian that the ambulance is transporting or has transported the patient to the nearest hospital. The parents/guardians should be advised to have someone drive them to the hospital with reassurance that trained EMS personnel are caring for their child. Ideally, it is best to:

- have available the child's emergency response card with the phone numbers of parents/guardians;
- have another designated person call the parent/guardian while EMS is being activated; and
- give the emergency card to the EMT (Emergency Medical Technician). (It should have the signatures of parents/guardians, which may expedite treatment in the emergency room while awaiting their arrival.)

School personnel should not delay calling for an ambulance while awaiting the permission or arrival of a parent in cases of potentially life-threatening or disabling or other potentially serious situations.

The following tables and algorithms, from *Guidelines for the Nurse in the School Setting* (Illinois Emergency Medical Services for Children) show a list of injuries/conditions and the triage categories into which they fall, along with steps to follow for each category. This list is not all-inclusive. The full document contains detailed algorithms for an extensive list of specific injuries and conditions and may be accessed at: http://www.luhs.org/depts/emsc/Schl_Man.pdf. **Note:** While many situations require a judgment call, it is prudent to call EMS in any serious incident.

TRIAGE CATEGORIES (Figure 1)

The 3 commonly recognized triage categories are *emergent, urgent,* and *nonurgent.* The table below lists triage categories and examples of problems that fall within each category.

Category	Examples
Emergent Student requires immediate medical attention. Condition is acute and has the potential to threaten life, limb, or vision.	• Cardiopulmonary arrest • Shock (hypovolemic, cardiogenic, or distributive) • Severe respiratory distress or failure • Major burns • Cervical spine compromise • Severe medical problems, such as diabetic complications • Poisoning or overdose • Emergency childbirth • Acute seizure states • Prolonged loss of consciousness • Caustic chemical spills in the eyes
Urgent Student requires medical intervention within 2 hours. Condition is acute but not severe or life-threatening.	• Deformity suggesting fracture of a long bone without circulatory compromise • Lacerations in which sutures are required but bleeding is controlled and there is no significant blood loss • Moderate pain following abdominal trauma • Head injury with brief loss of consciousness • Minor burns • Persistent nausea, vomiting, or diarrhea
Nonurgent Student may require referral for routine medical care. Minor or nonacute conditions.	• Minor abrasions or bruises • Muscle sprains and strains • Mild pain

Source: Illinois Emergency Medical Services for Children, Maywood, IL, 2003. Adapted with permission.

INTERVENTIONS, EVALUATION, AND DISPOSITION (Figure 2)

The triage decision is based on findings from the initial and detailed assessments, and allows one to formulate a nursing diagnosis, develop the plan of care, evaluate the student's response to interventions, and determine whether the student's health status has improved or worsened. The following table gives one a basis for disposition.

Evaluation	Disposition*
Emergent triage category	Monitor in health office and transport to emergency care facility via ground or air EMS
Urgent triage category	Monitor in health office and transport to emergency care facility via EMS, parent/guardian, or other adult as appropriate
Nonurgent episodic illness	Monitor in health office and transport to primary health care provider or home, as appropriate, via parent/guardian or other adult
Insect bite or sting with no evidence of anaphylaxis	Monitor in health office and transport to home via parent/guardian or other adult
Minor head injury with no loss of consciousness	Return to class while you notify parent/guardian; reevaluate subsequently
Essentially well with minor illness	Return to class

***Monitoring should be performed by school nurse.**

Source: Illinois Emergency Medical Services for Children, Maywood, IL, 2003. Adapted with permission.

INITIAL ASSESSMENT AND TRIAGE (Figure 3)

- Assess scene safely
- Assess ABCs
- Assess vital signs
- Obtain history, including medication use
- Conduct initial assessment

Triage

EMERGENT

Potential threat to life or function requiring immediate medical attention. Examples:

- Cardiopulmonary arrest
- Shock (hypovolemic, anaphylactic, cardiogenic)
- Severe respiratory distress or failure
- Severe burns
- Status epilepticus or first-time seizure
- Altered mentation
- Severe trauma
- Limb trauma with loss of distal pulse
- Spinal cord injury
- Severe pain in significant location (e.g., chest or abdomen)

- Support ABCs
- Activate EMS
- Initiate appropriate interventions as per specific protocol or IHCP or IEMP
- Contact parent/guardian and school administrator
- Follow up

URGENT

Acute condition that is not severe or life-threatening, but requires medical intervention within 2 hours. Examples:

- Long bone deformity or fracture without circulatory compromise
- Lacerations requiring sutures without excessive blood loss
- Head injury with temporary loss of consciousness
- Brief seizure, not first-time seizure or status epilepticus
- Wheezing, unresponsive to medication
- Diarrhea/vomiting with mild dehydration
- Febrile illness (T>100°F)

- Determine need for EMS
- Continuously observe student
- Initiate appropriate interventions as per specific protocol or IHCP or IEMP
- If stable, notify parent/guardian to transport student to medical care or home
- Follow up

NONURGENT

Condition is nonacute or not severe. May require referral for routine medical care. Examples:

- Minor abrasions/ecchymosis
- Muscle sprains/strains
- Headache without fever or other abnormal findings
- Wheezing without respiratory distress
- Minor pain (e.g., abdominal, menstrual, headache)
- SIS of URI
- Toothache

- Initiate appropriate interventions or administer medications as per specific protocol or IHCP or IEMP
- Observe student
- Return student to class or send home as indicated
- Contact parent/guardian
- Follow up

The School Nurse Task Force of the Illinois Emergency Medical Services for Children has exercised extreme caution that all information presented is accurate and in accordance with professional standards in effect at the time of publication. The information does not serve as a substitute for the professional advice of a physician; does not dictate an exclusive course of treatment; and should not be construed as excluding other acceptable methods of treatment. It is recommended that care must be based on the child's clinical presentation and on authorized policies.

Source: Illinois Emergency Medical Services for Children, Maywood, IL, 2003. Adapted with permission.

Importance of a Formal Emergency Plan

Schools should develop a detailed written plan to respond to individual and group emergencies in the school community, whether the emergencies are life-threatening or potentially life-threatening illnesses, injuries, and/or emotional and behavioral crises. The comprehensive emergency plan should:

- include building-specific plans as well as school district-wide plans;
- address before- and after-school emergencies; and
- be linked to local, state, and federal Emergency Management Systems (EMS).

All school staff and adjunct personnel should become familiar with the plan, which should be presented as part of both annual staff in-service training and new staff orientation. At a minimum, this training and the plan itself should spell out how school staff will:

- recognize that an emergency is occurring;
- implement the emergency plan;
- provide immediate first-aid care;
- remain with the injured person while summoning assistance;
- activate the local EMS system; and
- notify the parent/guardian or person identified as an emergency contact.

An emergency plan includes an algorithm designating individuals who will respond to an emergency, including the presence or absence of a school nurse.

Developing a Formal Emergency Plan

Legal/Regulatory Issues

This section provides a brief overview of *some* general laws relevant to prevention of intentional injuries and violence in Massachusetts public schools. For more detailed information on each law, please check the DOE website at http://www.doe.mass.edu, as well as other websites listed here.

What the Law Says

Requirements for formulation of a multi-hazard evacuation plan for school districts are codified in Section 363 of Chapter 159 of the Acts of 2000. It begins with the following:

> "Notwithstanding any general or special law to the contrary, the superintendent of each school district shall, prior to the beginning of the school year, meet with the fire chief and police chief of the city, town or district to formulate a school specific "multi-hazard evacuation plan" for each school under the superintendent's supervision. Said multi-hazard evacuation plan shall encompass, but not be limited to, evacuations for fires, hurricanes and other hazardous storms or disasters in which serious bodily injury might occur, shootings and other terrorist activities, and bomb threats. Said plan shall be designed for each school building after a review of each building. Said plan shall include, but not be limited to:
> (1) establishment of a crisis response team;
> (2) a designation as to who is in charge of said team and designated substitutes;
> (3) a communication plan;
> (4) crisis procedures for safe entrance to and exit from the school by students, parents and employees; and
> (5) policies for enforcing school discipline and maintaining a safe and orderly environment during the crisis.

> Each district, with the assistance of the local police and fire departments, shall annually review and update as appropriate said plan. At the beginning of each school year, students at each school shall be instructed as to the plan that is developed."

Here are some links to additional resources for school safety and security:
http://www.state.ma.us/eops/publications/preplan.htm.
http://www.state.ma.us/eops/download/council_report.pdf.
http://www.ed.gov/offices/OSERS/OSEP/Products/earlywrn.html.

The first step in developing a basic written emergency plan is to convene an Emergency Planning Committee for the school. (This may be the same as or a subcommittee of the School Health Advisory Committee.)

The purpose of the Committee is threefold:

- bring together all of the individuals and agencies involved in providing emergency care;
- develop policies & protocols for individual and group emergencies; and
- develop policies & protocols to prevent emergencies from occurring or minimize their effect.

Participants should, at a minimum, include a school administrator, school health personnel (school nurse, school physician, school-based health center personnel (when applicable), etc.), guidance, intervention and adjustment counselors, educators, special program staff (e.g., industrial arts, consumer science, music and creative arts, laboratories), physical education staff (e.g., coaches, athletic directors), support staff (e.g., administrative assistants), activities advisors, food service staff, custodians, students, parents/guardians, and representatives of the local police, fire and health departments, ambulance service, and community hospital emergency department.

Once the Emergency Planning Committee is in place, its first priority should be to perform an emergency preparedness needs assessment in the school. This entails surveying both staff and community resources and assessing the infrastructure of the school.

It should also include identifying the potential for multicasualty and/or terrorism emergencies, based on the school's location (see also Chapter 13). School staff and community services personnel who are prepared to handle an emergency should be identified, and an inventory of these resources, their services, and response times should be compiled and documented. For example, this group should identify how many individuals on staff and within the community have completed the American Heart Association's Heartsaver Automatic External Defibrillator (AED) Course and Heartsaver AED with Pediatric CPR Course**.** These courses teach the basic techniques of CPR, use of an AED, first aid for choking, and recognition of 4 major emergencies: heart attack, stroke, cardiac arrest, and choking.

Ideally, everyone on the school staff should be able to administer basic first aid. The Massachusetts Department of Public Health (DPH) recommends that, as a *minimum standard,* at least 5 persons trained in first aid/CPR be available in each school at all times when students are on the school grounds, including before and after school. The actual *suggested ratio* is 1 trained staff member for every 50 students (1:50). In high-risk populations, it is recommended that there be one first aid trained person for every medically or emotionally fragile person (1:1).

The Department also recommends that all coaches and athletic trainers, as a prerequisite for employment, should be trained in CPR and other first aid techniques, including Automatic External Defibrillator (AED) implementation*. **The school's emergency planning should include a system of assurance that CPR, first aid-trained individuals will be available** to respond to an emergent event at all times when the school facilities are open and in use.*

Information should be collaboratively exchanged between the school community and the surrounding community. Responding to emergencies requires a coordinated effort between the school district and local service providers (e.g., EMS, Fire, Police, ER). Representatives from each of these organizations should tour the school at the beginning of each school year, prior to the occurrence of any emergency, to familiarize themselves with all entrances and exits. As renovations occur, additional walkthroughs may be necessary to maintain current knowledge of the building layout. EMS providers should be made aware of the scope of special health needs (urgent and chronic) within the student population, without identifying individuals. (Written parental permission is required if individual health information is shared.) EMS providers should also be informed of any language, cultural, and/or religious diversities existing in the school that might affect their ability to provide basic or advanced life support, ensure scene safety, or transport patients to an appropriate health care facility.

Community EMS providers will be able to provide an assessment of the acceptability of the existing school and classroom layout in terms of emergency response requirements. In addition, it is essential to ensure that sufficient numbers of telephone lines are available to allow school personnel to place an outside call to the EMS system (including fire, police, and poison control centers). ***Procedures for accessing an outside telephone line should be defined and posted.***

When all of the critical information has been collected, the next step is the development of policies and protocols to be followed in case of an emergency. These policies should factor in any suggestions made by the community service providers and include the chain of command for decision making, as well as responsibilities for implementation of the emergency plan. Once the chain of command has been established and responsibilities have been defined, actual names must be attached to those itemized responsibilities. It is essential to identify school personnel who will assume responsibility for administering first aid, calling an ambulance (activating EMS), and notifying a parent/guardian or other emergency contact.

Clinically trained personnel (school nurses and nurse practitioners) should be the first responders to the scene when an emergency is identified. Include alternative personnel for backup if the school nurse is not readily available.

***Key components of the basic emergency plan include*:**

- plans to maintain the school emergency response preparedness and provisions for training the requisite number of staff members in universal precautions, CPR, the abdominal thrusts maneuver, automatic external defibrillators, and basic first aid;
  Note: This training should, as policy, also be offered to other school personnel and to students whenever possible. A list of trained individuals should be kept current and made available to administrators and school personnel.

- policies on first-aid and lifesaving protocols;
  Note: These should be published and widely disseminated.

- provisions for the distribution and posting of a list of life-threatening or potentially life-threatening or disabling situations;
  Note: This list should be provided to all staff members and be posted in visible and appropriate places, especially near entrances and exits and in gyms, hallways, the administrative offices, cafeteria, auditorium, and bathrooms. Protocols should include standards of care for specific and common illnesses and injuries. (Algorithms for an extensive list of specific injuries and conditions are available in the Illinois Emergency

Medical Services for Children document, *Guidelines for the Nursing in the School Setting,* at http://www.luhs.org/depts/emsc/Schl_Man.)

- protocols for the location and use of first aid supplies, as well as who will be responsible for maintaining the inventory of supplies;

- policies and protocols for the implementation of an AED (Automatic External Defibrillator) Program, which must be approved by the school committee;
  Note: These policies and protocols should, at a minimum:
  - meet the requirements of Massachusetts General Laws c.112 section 12V and 12V1/2, relating to public access defibrillation programs (refer to exhibits 2-15 and 2-16 for wording of the law and a sample AED policy);
  - ensure proper training for targeted responders that meets the standards of the American Heart Association or the American National Red Cross;
  - designate individuals responsible for equipment and accessory maintenance and replacement (daily, monthly, yearly);
  - allow for AED placement(s) within each school building with consideration given to convenient access to trained individuals before, during, and after school hours; and
  - identify a targeted source of revenue to assure sustainability of the program.

- provisions for the maintenance of a current emergency card for each student and staff member;
  Note: These cards should be kept in a centralized place, available and accessible to administrative and health care staff in case of emergency. At a minimum, information on the card should include medications, allergies, and a brief past medical history (see exhibits 2-17 through 2-19 for sample student cards). Written parental/guardian permission for emergency treatment of the student should be included, as should written parental/guardian permission to share information. In the case of staff emergency cards, the above information and their permissions should also be obtained. See Exhibit 2-20 for a sample employee emergency information form.

- policies and protocols for a range of possible events requiring a lock-down and the appropriate responses, while adhering to the emergency planning principles described previously;
  Note: A lock-down may occur when there is a potential threat, either internal or external, in accordance with local emergency protocols. Because students and faculty may not be able to leave the premises for an extended period of time, it is critical to pre-plan for meeting their health care and medication administration needs. Sufficient medications and supplies need to be maintained at the school. See Exhibit 2-21 for a sample student 24-hour shelter emergency medication and care plan.

- policies and protocols for dealing with a behavioral health emergency;
  Note: In the event of a behavioral health emergency (e.g., student suicide, attempted suicide), refer to Chapter 11.

- communication plans and protocols for emergencies (e.g., cell phones, walkie-talkies);

- telephone numbers of the local EMS system and the process for accessing an outside telephone line, both of which are to be prominently displayed at all telephones in the school;

- policies for the publishing of emergency plans for special school situations, such as before- and after-school activities, school bus incidents, field trips, and sporting events;
- protocols for adult supervision in both high-risk and normal-risk areas;
- schedules for practice/drills and review of both individual and group emergency procedures (no less than once a year);
- protocols for recognizing signs of impending violence;
- a clearly defined protocol for informing the public and media to: (a) prevent erroneous information from being disseminated and (b) ensure that the public and parents/guardians are receiving accurate and consistent information; and
- language requiring debriefings after the emergent situations are resolved.

Group Emergency (Multicasualty) and Disaster Plans

Planning for group emergencies is a significant component of a school's comprehensive emergency plan. It is critical to have policies and protocols in place to address disasters, such as fires, explosions, gas or hazardous materials leakages, weather hazards, or bioterrorism threats, which may result in multiple casualties. These policies and protocols should be determined in collaboration with community representatives. The local EMS provider, with consultation from state and federal emergency services, and the local board of health, in partnership with the state Department of Public Health, should participate in designing the plan. They should always be notified in the event of a disaster or a large-scale incident. School personnel should learn how to deal with possible casualties, as well as how to provide emotional support for students, families, and staff during and after the disaster. Recent multicasualty experiences have shown that disasters of great magnitude often overwhelm the affected population and invalidate the emergency preparedness plan in place.

The Massachusetts Emergency Management Agency (MEMA) requires every city and town to have a community disaster plan. Schools should contact local boards of health and fire and police departments to assure the school's inclusion in the community disaster plan. School buildings may be designated as evacuation, treatment, or dispensing sites and must be prepared to handle the housing of large numbers of displaced residents, mass immunization, or triage.

Included in schools' plans for group emergencies should be policies governing how a community disaster is determined, how local authorities are contacted, how the school should be organized and evacuated to pre-determined sites, how transportation will be identified and mobilized, and how parents/guardians should be notified about the evacuation. Predetermine the chain of command and identify participants' roles (e.g., who will communicate to the media, who will provide crowd control).

The following websites contain materials to assist schools and communities to plan for multicasualty emergencies:

- http://www.mass.gov/dph/topics/bioterrorism/bt.htm (DPH Emergency Preparedness and Response)
- http://www.mass.gov/dph/fch/emsc/emerplan.htm (DPH *Developing an Emergency Response Plan for Your School: Guidelines*)
- http://www.ed.gov/admins/lead/safety/emergencyplan/index.html (U.S. Department of Education's emergency planning site for schools)

- http://www.vaers.org
- http://www.bt.cdc.gov/agent/smallpox
- http://www.cdc.gov/smallpox
- http://www.cdc.gov/nip
- http://www2.cdc.gov/nip/isd/spoxsh/launch1.html (CDC Smallpox Vaccine Storing and Handling)

A community listing of Emergency Management Directors may be found on the MEMA website, which can be accessed through the Massachusetts state government portal: http://www.mass.gov.

Special Considerations

Children with special health care needs: Each child who has a critical or potentially life-threatening special health concern should be identified and have an individual health care plan (IHCP) that anticipates possible emergency situations, with a response algorithm to the emergency clearly defined. With parent/guardian permission, inform the local emergency medical service of the above health care plans. Include a plan designating the appropriate hospital of destination for each child (see Chapter 7).

Emergency medications for allergic reactions: *In an emergency in which the child has a known allergy or preexisting medical condition, epinephrine (as prescribed by the child's licensed provider) may be administered by the school nurse or a person authorized to administer epinephrine by auto injector in accordance with 105 CMR 210.000.* (See Chapter 6 for more information on administering medications.) Because of the danger of biphasic reactions, trained emergency medical personnel should transport all individuals receiving epinephrine to the local emergency medical facility (see Chapters 6 and 7 for additional information).

For any individual with *no* previous history of life-threatening allergic reactions, the use of epinephrine as an emergency medication requires *written protocols and a written order from the school physician.* **Each school should ensure that this standing order and protocol are completed, signed, and in place.** Only a licensed person (school nurse) may administer epinephrine to a person who has *no* previous history of a life-threatening allergic reaction. If the school nurse is unavailable, the school must immediately activate the EMS system, provide first aid as applicable, and then notify the school nurse and the parents/guardians. Anyone who has received epinephrine treatment must be transported by trained emergency personnel to a hospital emergency facility immediately, via ambulance. Upon the student's return to school, the school nurse should develop an individual health care plan and ensure that a policy for the care of the child with a life-threatening allergy is in place (see Chapters 6 and 7 for details, including required reporting).

Note: Managing students with life-threatening allergies offers an excellent opportunity for school nurses and emergency room nurses to collaborate.

Use of oxygen in the school setting: Generally, oxygen is not appropriate for emergency use in the school setting. It is a treatment that requires a physician's order for a specific child with a specific diagnosis. In some school districts or communities where emergency medical services may not be readily available, schools may consider protocols, as defined by the Board of Registration in Nursing, which permit oxygen to be used in emergency situations until the emergency medical services arrive. These protocols must be clearly delineated and signed by the school physician. Nurses must be trained in administration of oxygen treatment, the use of pulse oximeters, and recognizing signs of hypoxia.

Oxygen is highly flammable. If it is to be stored in school, the local fire department should be notified and requested to visit the school to make recommendations for storage and maintenance, with appropriate signs posted and precautions in place.

Special populations in a group emergency: As schools work with their local partners (e.g., local emergency management directors, boards of health, police and fire departments) to enhance their community's Comprehensive Emergency Management Plan, it is very important that special populations be included in planning efforts. The Massachusetts Department of Public Health's Center for Emergency Preparedness (DPH CEP), through its Special Populations work group, has developed a guide to assist this process. The guide is intended to be an evolving document and should be revised, based upon community-specific needs and populations. Because hyperlinks are provided for many of the resources, this document is best viewed electronically. It may be found at: http://www.mass.gov/dph/bioterrorism/advisorygrps/pdfs/spop_guidance_5_05.pdf.

Psychosocial implications of responding to an emergency: Emergency planning should also include provisions for any critical event precipitating a widespread psychosocial response. Protocols should be developed for a team approach to respond to the needs of students and staff in the event of a death, serious injury, or serious illness within the school community. As more students with DNR (Do Not Resuscitate) Orders attend school, such planning becomes even more critical (see Chapter 7 for more information about DNR orders and the Comfort Care/DNR Order Verification Program). However, precipitating events may also include suicide; violence in the school; terrorism threats and actions; or the sudden death of a student, faculty, or family member (see also Chapter 11).

The school should determine internal and external resources ready to provide psychological and emotional assistance (e.g., guidance and adjustment school counselors, school nurses, physicians, community mental health counselors, social workers). This group should be convened as an emergency preparedness crisis team on a regular basis to evaluate potential emergencies to which the team would be called to respond. *Establish a communication chain that could be activated with little advance notice. Include participants who would be available during the school day, before and after school hours, and during the weekend, as needs dictate.*

Distributing and Maintaining the Emergency Plan

The emergency plan should be approved by and distributed to all members of the emergency planning committee. After approval by the school committee, it should be distributed to all constituents of the local EMS system.

All school personnel, including temporary or substitute faculty members, should be provided with a copy of the written emergency plan. Provide an annual staff in-service for a review and discussion of life-threatening or potentially life-threatening or disabling situations, with discussion of staff responsibilities and resources available in an emergency.

Review, evaluate, and revise the emergency plan annually, or more often if an emergency has occurred. The school committee, school administrator, and school health personnel should sign and date the approved plans, as should other members of the emergency planning committee.

Conduct periodic drills to determine effectiveness of the plan, identify strengths and weaknesses, and make appropriate modifications. If an actual emergency occurs, the school should conduct a debriefing. This supports the measures taken and provides an opportunity to improve the plan prior to the next event. It also provides an opportunity for participants to share experiences and gain mutual support.

Recordkeeping and Documentation

Recordkeeping is essential to an emergency preparedness program. Records are vital for settlement of insurance claims, to protect school personnel against charges of negligence, and to plan prevention programs. Forms should be developed that include the date, time, place, and nature of the incident; general condition of the victim; what care was administered, by whom, when, and where; and the school's disposition of the case (i.e., to whom referred, if anyone). Forms also should include places for appropriate signatures. Per school policy, forms may be completed in duplicate by school faculty at the scene of the incident and filed in the principal's and nurse's offices. Each report should be placed in the appropriate student's health record. Some school districts require forms to be completed in triplicate, with one copy filed in the superintendent's office. Schools may also wish to provide a copy to the person(s) affected in the emergency. (See discussion of HIPPA and FERPA later on in the chapter.)

Incident reports should be reviewed periodically by school health personnel and administrators to determine the location and nature of incidents. A plan should be developed to prevent or minimize future injuries due to environmental or activity-caused factors. (Please see Chapter 13 for further discussion of injury prevention and risk reduction.) A review of emergency situations could be assigned to a subcommittee of the School Health Advisory Committee, which would then recommend implementation of proposed interventions to both school administrators and school health personnel.

What the Law Says

School personnel who provide first aid in good faith (first aid that is reasonable under the circumstances) to a student in an emergency are protected from civil liability by the following provision of M.G.L. c.71, s.55A:

> "No public school teacher and no collaborative school teacher, no principal, secretary to the principal, nurse or other public school or collaborative school employee who, in good faith, renders emergency first aid or transportation to **a student** who has become injured or incapacitated in a public school or collaborative school building or on the grounds thereof shall be liable in a suit for damages as a result of his acts or omissions either for such first aid or as a result of providing emergency transportation to a place of safety, nor shall such person be liable to a hospital for its expenses if under such emergency conditions he causes the admission of such injured or incapacitated student, nor shall such person be subject to any disciplinary action by the school committee, or board of such collaborative for such emergency first aid or transportation."

***First aid* is defined as immediate, temporary care provided to the victim of an injury or illness, until the service of a physician can be obtained.** This care includes cardiopulmonary resuscitation (CPR), abdominal thrusts for choking victims, and other life-saving techniques, such as the use of Automatic External Defibrillators (AEDs). *As a general rule, there is no legal duty outside the school context to aid a person in distress or danger.* However, within the school setting, school personnel have a duty to provide reasonable assistance to an injured or ill student.

See Chapter 5 for discussion of the State Tort Claims Act, M.G.L. c.258, s.2. This law provides that public employers "shall be liable for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any public employee while acting within the scope of his office or employment..."

SCHOOL HEALTH FACILITIES

The overall environment of the school health facility should be designed to promote the well-being of students, while providing a wide range of services. Students consult with the school nurse about a variety of health concerns, including an assessment of a health issue, medications and/or treatments, educational materials, first aid and/or emergency care, and assistance with psychosocial/behavioral health issues. School health facilities should be designed to meet the increasingly complex and diverse student health needs. They also must be prepared to expand in size if large numbers of students seek health services. Privacy considerations for treatments and counseling are of paramount importance. As the school health service programs are increasingly coordinated with the health service delivery system serving children, school nurses need advanced communication technology to manage information, communications systems, and data systems.

When choosing or renovating a space for the health facility, consideration should be given to a number of factors, including:

- projected school enrollment;
- the number of staff;
- the availability of a nurse's workstation with appropriate electronic communications systems;
- the need for a private treatment and consultation area, with space for clinical technological equipment; and
- the need for storage space.

The ideal location for the health facility is close to the school's guidance and counseling services. Proximity promotes the team concept of health care delivery, facilitates referrals of students, and ensures confidentiality. In planning new facilities, consideration should also be given to making the space flexible, so that additional services (e.g., oral health, behavioral health, and nutrition counseling) may be added.

Functions of a School Health Facility

The school health facility provides a safety net during the school day for children and adolescents with physical and psychosocial/behavioral health needs. In this role it serves multiple functions with specific facility requirements. Functions include:

- office for the school nurse managing the health of the student population;
- assessment area;
- medication dispensing area;
- first aid and emergency care treatment area;
- temporary isolation area for students who are suspected of having a communicable disease or are awaiting transport home or to another facility;
- resting areas for students who are ill or injured (Although most students are returned to class, some must remain, because of illness, in the health suite until the arrival of parents/guardians.);
- a service area for such procedures as immunization administration and vision, hearing, and postural screening;
- a private conference space for counseling and guidance, as well as meetings with parents/guardians, students, and team members;
- a secure area for storing student health records;
- a resource center for health education materials;
- a storage area for health supplies and equipment; and
- a secure area for medication storage.

The following are recommended features of a basic essential school health facility. See Exhibit 2-22 for 2 sample floor plans — one for a school health suite and one for a school-based health center. See Chapter 4 for information on building codes.

Recommended Features of a Basic Essential Health Facility

Ideal Location/Physical Layout:

- is reserved for health purposes only;
- is adjacent to administrative offices and guidance and counseling services;
- is in a quiet part of the school building, away from playgrounds, music rooms, gymnasium, or noisy machinery; and
- allows for individual privacy.

General:

- air-conditioning and adequate ventilation;
- excellent lighting (50 foot-candles or more), with adjustable overhead lights in rest areas, in a closet, and over the first-aid station;
  Note: Lighting may be defused with the use of environmentally approved deflectors.
- natural light from windows;
- private examination and consultation room with examination table;
- adequate private rest areas with beds or cots for students, preferably with washable surfaces;
  Note: The number of rest spaces should be based on student enrollment and frequency of use. Rest areas should be visible from the nurse's station and fitted with an outlet for their own light source. Folding screens or draperies should be available to provide privacy in the rest area.
- an examination room soundproofed for audiometric (hearing) tests;
- sound-absorbing ceilings and walls in all areas, as well as adjustable door closers to eliminate excess noise;
- at least 15 feet of unobstructed space available for screening programs;
  Note: Screenings may take place in another part of the school building that meets these specifications.
- first-aid station with washable (preferably stainless steel) counter tops, under counter drawers for storage, and over counter hanging cabinets with see-through sliding doors; and
- flooring — washable surface, no carpet.

School Nurse Office Space:

- separate furnished office space, preferably with a door that can be closed;
- communication area adjacent to nurse's desk, fully equipped with computer, software, facsimile machine, printer, dedicated telephone line, and additional telephones as needed;
  Note: Consideration should be given to preserving confidential exchange of information.
- bookcase(s) stocked with labeled and accessible health promotion materials, health-related textbooks, and information on referral agencies; and
- filing cabinets that can be secured and locked for storage of current health records, emergency response cards, and daily maintenance files.

Waiting Area:

- adequate seating, based on student enrollment and frequency of use;
- wall space with room for educational posters; and
- rack for pamphlets and other current health information, either fastened to the wall or free-standing.

Plumbing/Sanitation:

- adequate plumbing to ensure hot and cold running water for assessment and treatment area;
- at least one handicapped-accessible toilet facility with hot and cold running water;
- private lavatories adjacent to examination room, with toilets, toilet paper, sinks with hot and cold running water, foot-operated soap dispensers, paper towels, and pedal-controlled waste receptacle lined with polyethylene bag;
- pedal-controlled, covered trash receptacles, lined with polyethylene trash bags at various places throughout the facility;
- hospital faucets (with long handle on/off levers and overhanging spout faucet) in lavatories and first-aid station;
- filled wall-mounted paper towel holders and air hand dryers adjacent to all sinks in lavatories; and
  Note: Motion sensor equipment should be considered for both handwashing and drying.
- easily cleaned hard surfaces on floors and walls, with availability of disinfectant and bleach cleaning materials.

Storage/Supplies:

- storage closet with countertop along one wall and a secure, wall-attached, double-lock medicine cabinet (either inside or outside closet);
- refrigerator specifically designated for storage of medication and cold packs;
- blankets, sheets, pillows, and disposable pillow paper covers; and
- sharps container for disposal of hazardous medical waste.

Electrical:

- double electrical outlets throughout the unit; and
- surge protectors.

Movable Equipment:

- automatic external defibrillator;
- clock with a second hand;
- magnifying light (either table or floor model);
- nebulizer (for inhalation therapy) with disposable accessories;
- oto/ophthalmoscope;
- physician's scale with height rod or stadiometer;
- portable first-aid kit;
- pure tone audiometer;
- sphygmomanometer (calibrated annually) and appropriate cuff sizes;
- stethoscope;
- stretcher;
- two-way communication device (walkie-talkie);
- vision testing equipment, such as Random Dot E and HOTV tests, consistent with current standards (see Chapter 5); and
- wheelchair.

Suggested First Aid and Other Supplies:

- ace bandages;
- airway/Ambu bag;
- baking soda;

- band-aids;
- bandages (various sizes);
- backboard;
- basins;
- batteries;
- cold packs/hot packs/heating pad;
- cotton-tip applicators (swabs);
- cotton balls;
- crutches;
- disinfectant for surfaces and spills (approved by the U.S. Environmental Protection Agency);
- disposable diapers (may be used for compression);
- disposable gowns;
- EpiPens® (adult and junior) with expiration dates checked regularly;
- eye cup;
- eye pads;
- eye wash solution;
- flashlight/penlight;
- latex gloves and nonlatex gloves;
- magnifying glass;
- masks;
- paper cups;
- paper towels;
- peak flow monitors;
- pediculosis combing tools (i.e., LiceMeister®);
- pulse oximeter (optional);
- record forms (emergency cards, physician order forms, medication administration forms, accident/incident reports, asthma action plans, state forms, etc.);
- ring cutter;
- salt;
- sanitary pads, individually wrapped (may be used for compression);
- scissors (blunt end);
- slings;
- soap (preferably in dispenser);
- splints/ finger splints;
- surgipads;
- tape (different widths, as well as nonallergic tape);
- thermometer (disposable) or other mechanism for measuring temperature, such as temp dots;
- tissues;
- tongue depressors;
- triangular bandages;
- tweezers;
- vinyl gloves (for latex allergies);
- walkie-talkies or other communication device; and
- washcloths (disposable).

Note: School nurses may wish to have a portable bag with critical emergency and communication equipment that can be carried to the site of an emergency (e.g., athletic field).

Further guidance regarding these recommended features will be available on the School Health website when the revised regulations are completed:
http://www.mass.gov/dph/fch/schoolhealth/index.htm.

General Requirements for a Health Facility Providing School-based Primary Care Services (School-based Health Center)

A school-based health center (SBHC) that is operated by a hospital, clinic, or community health center is licensed (M.G.L. c.111, s.51) as a satellite clinic of that health care facility. The following are the basic physical plant requirements for clinic licensure (which are the responsibility of the licensed entity), as defined by DPH health facility licensing regulations:

- waiting/reception area with public telephone and public drinking fountain;
- offices, including space for secure records storage;
- nurses' area with medicine preparation/storage and hand-wash sink;
- examining room with 80 square feet, hand-wash sink, and privacy for sight and sound;
- utility room with flush rim sink, hand-wash sink, and work counter;
- storage for equipment and linen, with separation of clean and soiled;
- janitor's closet with service sink;
- toilet facilities;
- ventilation for all rooms without operable windows and for janitor and toilet rooms;
- handicapped access;
- corridors 5 feet wide; and
- doors 2 feet, 10 inches wide.

Plans for the SBHC must be sent to the DPH Bureau of Health Care Systems, Division of Health Care Quality, for approval. No renovations should take place until the department approves the plans.

Clinics with existing space, to which renovations are not planned, must provide the following:

- dimensioned plan with all functional areas identified;
- information about heat, light, and ventilation; and
- information about required spaces that are not provided within the clinic.

Clinics planning renovations must provide the following:

- construction documents for the area to be renovated, with functional areas identified;
- architectural, plumbing, mechanical, and electrical plans; and
- copies of plan approval from the Department of Public Safety and the local building inspector.

SCHOOL HEALTH RECORDS

Each student must have a health record. This legal record should contain accurate and complete demographics, immunizations, licensed provider orders, the health care plan, problems or concerns to which plans are addressed, sequential narrative notes, services and treatments provided, and outcomes of specific procedures or interventions. It should contain an accurate and complete database. The format, whether paper or electronic, should be sequential and consistent. See the DPH website for school health record forms in PDF and Word:
http://www.mass.gov/dph/fch/schoolhealth/health_record.htm

The value of the health record lies in the information it contains and the manner in which it is used. An effective written account of the facts and events related to the individual's health should focus on

the student and his/her needs. It must be accurate, cumulative, specific, objective, and confidential. A problem oriented health record, sometimes called a positive oriented health record (POHR), establishes a legal, consistent format for documenting and communicating the health status, problems identified, and services provided to the individual student. If immunizations are administered by the school nurse, the records for these immunizations must be kept for 30 years.

What the Law Says

> "Under M.G.L c.71, s.37L, the sending school of any student transferring into a new school district must provide the new district with "a complete school record," which includes the original copy of the student's health record. Student health records (in or out of district) should be sent to the school nurse. This can be facilitated by placing the student health record in a sealed envelope with a notation on the front: "Attention School Nurse: Confidential Records" or "To be opened by the School Nurse of _____ District". A copy may be retained at the sending school to facilitate re-entry of said student at a later date. The original health record and the copy shall be destroyed no later than 7 years after a student transfers, graduates, or withdraws from the school. Written notice to the eligible student and his/her parent of the approximate date of the destruction of the record and their right to receive the information, in whole or in part, shall be made at the time of such transfer, graduation, or withdrawal. (See Massachusetts Department of Education Student Records: Questions, Answers and Guidelines, September 1995, which is available online at http://www.doe.mass.edu/lawsregs/advisory/cmr23qanda.html.)"

If records are computerized, the Massachusetts Department of Public Health recommends that each child should have a paper file that includes at a minimum (a) the Massachusetts School Health Record face sheet with a statement indicating that all pertinent information is electronically filed, (b) the licensed prescriber's physical examination form and medication and treatment orders, (c) parent/guardian consent for treatment and sharing information, if appropriate, (d) incident reports (per school policy), (e) laboratory reports, (f) health-related correspondence, and (g) other paper forms that cannot be electronically transmitted and/or have the original signatures. Student records that are electronically maintained may be retained in electronic form until the student withdraws, transfers, or graduates from the school system, consistent with the DOE Student Record Regulations. When the student transfers or withdraws, the computer printout may go with the student. (For further information on computerization, see section on Systems Development later in this chapter.)

Components of the School Health Record

The following components of the Massachusetts School Health Record are mandated by law (M.G.L. c.71, s.57). The first three (Massachusetts School Health Record and memo; Health Care Provider's Examination Form, memo, and certificate; and Massachusetts Immunization Information System Certificate) can all be found on the DPH website:
http://www.mass.gov/dph/fch/schoolhealth/health_record.htm

- *Massachusetts School Health Record (Includes an explanatory memo and face-sheet.* The form is used for all entering students. It documents identifying and emergency information, the results of population-based screenings (vision, hearing, postural, BMI, etc.), referrals for failed screenings, and other pertinent information.
- *Massachusetts School Health Record: Health Care Provider's Examination* is used for all physical exams (initial, subsequent, prior to participation in competitive sports, and prior to obtaining a work permit) performed by the primary care provider. The Health Care Provider's Examination form also includes the record of immunizations. Up-to-date versions of the following forms are found on the DPH website: (a) explanatory memo for use of the form, (b) Sample Health Care Provider's Examination form, and (c) sample immunization certificate.
- *Massachusetts Immunization Information System Certificate or other immunization record*

- *meeting the state requirements:* documents the immunization history.
- *Abnormal Findings Notification* documents parental notification of abnormal findings from school physical exams and feedback from the private physician.
- *Progress Notes* document encounters, communications, and home visits that may impact the student's learning and optimal well-being.
- *Growth Charts or Body Mass Index Records with Referral Information* document height and weight measurements by plotting on a standardized, sex-specific growth chart. The importance of graphing lies in the adequate interpretation of the student's growth status and early identification of those students at risk, who may need referral for further assessment. (See Chapter 5 exhibits for these charts and the growth screening section of that chapter for discussion of screening protocols.)

Other health-related information that may become part of the student's cumulative health record includes any documentation of interventions, services, and communications that may affect his/her learning. Incident/Injury/Crisis Reports may be included, as determined by school policy. See Chapter 6 for medication administration forms and Chapter 7 for Individual Health Care Plan form. Other general health-related documentation that may be maintained by the nurse includes delegations to unlicensed staff; in-service training; building or grounds inspections; health activity assessments, reports, or summaries; data reports; and/or program evaluations.

Documentation of Records

Documentation is the preparing and assembling of written records to authenticate health care provided to the individual student and the reasons for providing such care. According to standards of nursing practice, documentation should be accurate, objective, concise, and well organized. It must be legible, written in ink, have the signature of the person writing the entry, and be current with date and time of each entry. It also must be comprehensive, including all relevant statistics, problem statements, observations, assessments, actions, and outcomes.

Proper documentation is essential to communication and should demonstrate collaboration, coordination, and continuity of health care, including communication with parents/guardians. It is especially useful when:

- a student enters school;
- a student is promoted or transfers from one school to another;
- a student has a health encounter with the school nurse;
- a student's health status changes; or
- a student receives treatments or medications.

In addition, the nurse should document when:

- making referrals to other health care providers or coordinating care with health care agencies or practices, consistent with FERPA and HIPAA regulations;
- conducting personal health counseling or education;
- participating in nurse-parent/guardian or nurse-teacher conferences and team meetings; or
- there are legal issues or concerns.

Documentation organizes material and approaches student health in a systematic and retrievable format that facilitates the application of the scientific process (also called the nursing process). Recognizing the inter-relatedness of problems may help predict and thus prevent problems by highlighting risk factors.

Documentation ensures continuity of care, demonstrates accountability, provides a tool for quality assurance, and substantiates the level of care for legal purposes. Recording care demonstrates

compliance with professional standards described in the Nurse Practice Act, which is applicable to all settings where nurses are employed. The school nurse may be liable if the care provided is not clearly documented. The old adage, “If it's not documented, it was not done" emphasizes the importance of documentation when legal questions arise. Finally, in addition to the necessary recordkeeping for the individual student, documentation also furnishes useful aggregate data for appropriate evaluation and research, thus promoting evidence-based school nursing practice.

Confidentiality of Student Health Information

School health records are temporary records governed by the Massachusetts Department of Education's record regulations: Student Records, 603 CMR 23.00. Maintaining and accessing school health records must also adhere to the federal Family Educational Rights and Privacy Act of 1974 (FERPA). In addition, certain transactions may have Health Insurance Portability and Accountability Act (HIPAA) implications.

The Effect of HIPAA on School Health Programs

Many school nurses have expressed concerns about the effect of the Health Insurance Portability and Accountability Act’s Privacy Rule (HIPAA) on school health programs. Questions have also been raised regarding the interplay of HIPAA and FERPA.

How HIPAA affects a school health program is dependent on whether the program is administered by an education institution that receives federal funds under any program administered by the U.S. Secretary of Education. If so, the privacy of any health information maintained by the program will not be subject to HIPAA’s privacy requirements. Rather, the information will be subject to the requirements of FERPA, and any corresponding state regulations (e.g., 603 CMR 23.000). Thus, for these programs HIPAA does not apply to any health information in the student's health record and in a nurse’s personal notes.

However, educational agencies or institutions that do not receive federal funds are not subject to FERPA’s requirements. Thus, a school health program at a privately funded educational institution may not be covered by FERPA, and under certain circumstances may have to comply with HIPAA’s requirements.

A more complete discussion of HIPAA and FERPA as they relate to school health records, including applicable legal references, any updates, and answers to commonly asked questions about HIPPA, is available at: http://www.mass.gov/dph/fch/schoolhealth/hipaa_info.htm.

The Impact of Confidentiality Requirements on How and Where Records are Documented

Health professionals are legally and ethically bound to document all treatment provided to individuals under their care. Records kept by the school nurse pertaining to a student's health status and medical care may be regarded as medical records or as part of the educational record. Depending upon how a record is characterized, it may be subject to differing requirements as to maintenance and confidentiality. As a consequence, the school nurse needs to consider carefully issues of documentation and confidentiality.

As more health care is delivered in the school setting, the following questions may arise:

- What constitutes a medical record, to which the principles of confidentiality apply, versus an educational record, governed by student record regulations?
- How should school nurses document the care they provide?
- How should nurses ensure confidentiality of this information?

Recognizing the complexity of these issues, both state and national agencies are beginning to address the many questions raised by the schools. In general, records kept by the school nurse

pertaining to a student's health status and clinical care should be documented as either part of the student's health record or as separate documentation to be retained in the school nurse's personal notes. *Depending upon how information is documented, it may be subject to differing maintenance and confidentiality requirements.*

Health Information That Should Be Part of the Student's Health Record

Health care information that is relevant to the student's educational progress should be entered into the student's health record. (See Department of Education regulations governing student records: 603 CMR 23.000). This information includes medication administration, nursing care/treatments, special diet, and impaired vision or hearing — provided such information is not of a type that should be protected from disclosure (see the discussion below on private notes).

Student health records are considered part of a student's temporary record and as such are protected from disclosure to third parties without the written consent of an eligible student or parent/guardian. Consistent with the current temporary records regulations, these records are accessible to an eligible student, the student's parents or guardians, and authorized school personnel as discussed below. Relevant student health information may be disclosed to public health officials if warranted by an outbreak of a serious disease in the school or community.

The school nurse, whether employed by the school committee or board of health, is responsible for keeping these records. For written records, the school should have policies regarding safe storage (locked cabinets) and a protocol for accessing the records. If the student health record is maintained electronically, the record should be protected by security measures, such as the use of passwords, limiting access to authorized school health personnel.

Communication of Student Health Record Information to Other Authorized School Personnel

There may be circumstances in which there is a need to share information in the student health record with authorized school personnel — either to enhance the educational progress of the student or protect his/her safety or well-being. For example, staff may need to be alerted to signs or symptoms of a medical problem and offered a course of action. This type of disclosure should be made only to those authorized school personnel who work *directly with* the student in an instructive, administrative, or diagnostic capacity. It is important to stress that *only the minimum necessary information* should be disclosed to other school personnel under these circumstances. For example, this information should not be shared in a public written list that is posted or circulated to all educators. Finally, authorized school personnel should be instructed not to re-disclose the information.

If there is any question about the sensitivity of the information in the student health record, the permission of the parent/guardian and student, if appropriate, should be sought prior to disclosure to authorized school personnel. Ultimately, however, federal regulations permit information in the student health record to be seen by authorized school personnel, and the basis for such sharing seems even more compelling when necessary to protect the well-being or safety of the student.

Health Information That Should be Documented as Part of the Nurse's Private Notes

Not all health information belongs in the student health record. While it is appropriate practice for a nurse or other health professional to document observable facts with respect to a health condition, health needs, treatment plan, and the care provided, some information is not sufficiently related to the educational progress of a student to be appropriate for documentation in the student record. In addition, health professionals may have an ethical and legal duty to protect certain medical information which they possess. Placement of medical information in the school record, where persons other than the school nurse may see it, may violate this duty.

Specific Statutory Protections for Confidential Information

There are a number of statutes that create a duty to protect the confidentiality of medical information pertaining to diagnosis and treatment of a minor. Most of these statutes do not specifically address the duty of nurses or the provision of care in a school setting. The statutes do indicate a legislative intent to encourage minors to promptly seek certain types of medical diagnosis and treatment, in part by their being assured that information related to that treatment will be protected as confidential.

For example, M.G.L. c.111, s.70F, prohibits health personnel, including nurses, from disclosing HIV test results, or even the fact that someone has been tested, without the consent of the test subject. Similarly, M.G.L. c.112, s.12F, creates a category of "emancipated minors" who are given legal authority to make decisions about their own medical diagnosis and treatment. For example, a minor who believes s/he has been exposed to a dangerous disease (e.g., a sexually transmitted disease) or a minor who believes she is pregnant may legally consent to diagnosis and treatment without parental involvement. In such cases, the statute requires that the information be held confidential between the treating physician and the minor. Such information may be released only with consent of the minor or a judicial order; it must be disclosed if the life or limb or the minor is endangered. Other sensitive information (e.g., treatment for substance abuse) has similar protection.

Use of a Health Professional's Personal Notes

Many of these laws do not specifically apply to nurses or many school nursing activities, but still indicate a general legislative intent to protect the confidentiality of certain types of information pertaining to care of minors. In addition, there is a statute (M.G.L. c.214, s.1A) that protects everyone in the Commonwealth from an “unwarranted” invasion of privacy. The wording of the statute suggests that there must be a solid justification for disclosure of personal information, particularly if it is of a sensitive nature.

Given these statutes concerning confidentiality, it is recommended that information of the types covered by the statutes (and other sensitive material) be placed in a nurse's personal files and regarded as confidential. According to Department of Education regulations, 603 CMR 23.04, information maintained in the personal files of a school employee, if not accessible to or revealed to school personnel or third parties, is not considered part of the school record. Such information may be shared with the student, parent, or a temporary substitute of the maker of the record but otherwise should be released only with proper consent or court order. Such records should be kept in a separate locked file, accessible only to the nurse or the nurse's substitute. Federal regulations provide that once information in a nurse’s personal files is disclosed to a third party, it must afterwards be included as part of the student’s health record and will subsequently be subject to all the provisions of 603 CMR 23.00

Note: Physician's records and records of school-based health centers are not considered school health records and are subject to unique confidentiality protections afforded medical records.

Disclosing Information to Protect Health or Safety

Regardless of the discussion above, there may be times when a school nurse has the legal obligation to disclose health or related information to protect a student’s health or safety. In particular, M.G.L. c.119, s.51A, requires a school nurse to file with the Department of Social Services a report when there is “reasonable cause to believe” that a student under 18 “is suffering physical or emotional injury resulting from abuse inflicted upon him which causes harm or substantial risk of harm to the child’s health or welfare including sexual abuse, or from neglect, including malnutrition…” (see also Chapter 13). The statute provides that school staff shall immediately notify the school department or person in charge of the school.

In addition, for a minor who obtains medical care as an "emancipated minor" under M.G.L. c.112, s.12F (see above), there is a legal requirement that the physician notify the parents or legal guardian of the minor if the physician "reasonably believes the condition of said minor to be so serious that his life or limb is endangered." As noted above, the statute does not specially address the duties of a nurse in this situation but does indicate a legislative intent to protect a minor facing an immediate threat to life or limb.

This approach seems consistent with a decision of the Massachusetts Supreme Judicial Court, Alberts v. Devine, 479 N.E. 2d 113 (Mass., 1985), which held that a physician generally owes a patient a duty not to disclose medical information about the patient without consent. The court, however, recognized an exception allowing (but not requiring) disclosure when there is a "serious danger to the patient or to others." While there is no comparable case law with respect to nurses, the case suggests that public policy requires the protection of a patient's right to privacy by medical professionals, unless there is an immediate threat of serious harm to the student or others.

Impact of Computerized Systems on Health Record: Benefits and Additional Confidentiality Issues

Computerization of school health data improves management of school health records in a number of ways. Computerization:

- enables standardization of documentation through common interfaces and standard menu selections;
- facilitates retrieval of student information (e.g., encounter histories, health status, phone numbers);
- facilitates tracking of referrals and follow-ups;
- facilitates problem identification through creation of exception reports (e.g., students missing immunizations);
- facilitates practice management and quality improvement (daily medication schedules help prevent missed doses);
- automates mathematical calculations and charting for tasks such as multiyear BMI-for-age charting;
- tracks risk factors (e.g., weight, behavioral health) and chronic health conditions (e.g., asthma, diabetes) over time; and
- helps ensure that appropriate security measures are taken to protect confidential information (e.g., password protection, automated audit trails).

Because computerized school health information systems make the collection and sharing of data much easier, they also raise many issues related to the privacy and security of school health information. This manual's section on the confidentiality of school health information addresses these issues at a basic level. However, schools developing computerized school health information systems should conduct a thorough analysis of system-specific privacy and security concerns. This would include an analysis of the regulations affecting collecting and sharing information (e.g., FERPA), and the technological risks and vulnerabilities of the proposed system (e.g., system access security).

SCHOOL HEALTH DATA AND SCHOOL HEALTH INFORMATION SYSTEMS

Categories of Data Collected

There are 5 basic categories of data collected in any comprehensive school health and human services program:

1. *Health status indicators*. These include chronic illnesses or conditions (e.g., asthma, diabetes, mental retardation), injuries (intentional and unintentional), and functional levels (e.g., physical limitations, behavioral problems, cognitive levels). Data on the number and types of diagnoses of children with special health care needs have implications for staffing and program development.
2. *Service provision measures*. These include information on the number and type of health encounters, as well as the specific interventions performed by the school nurse (e.g., medication administration, clinical procedures such as glucose monitoring, case management activities). These data are essential for defining the role of school nurses in the provision of student health services.
3. *Service utilization measures*. These include information on the utilization of health and human services programs within the community, such as the use of emergency room services; participation in Medicaid's Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) Program; and hospitalizations. The number of students who lack a primary care provider or regular source of medical care may have implications for the types of services offered by the school.
4. *Sociodemographic and environmental measures*. These include variables such as race/ethnicity, number of siblings and family structure, air and water quality indexes, and neighborhood characteristics.
5. *Behavioral risk indicators*. These include indicators on smoking, alcohol and drug use, seatbelt usage, sexual behavior, and nutritional intake, among others.

Accurate and timely data are critical to reflect the nature of school health services and document the impact of these services on the student population. School health programs perform data collection for a variety of reasons. Data are used to:

- conduct local and state needs assessments;
- track health status indicators;
- direct program planning;
- monitor program management;
- identify opportunities for improvement;
- develop policy directions and initiatives;
- evaluate programs and services;
- educate the public on school health services; and
- comply with federal reporting requirements.

Program Monitoring and Surveillance

Program monitoring is a crucial aspect of a school health program and involves the systematic collection of data for the purpose of determining the quantity of service provision. This information is essential for documenting need and also contributes to the evaluation process. Examples of the data collected for program monitoring include:

- the number of school health advisory meetings conducted per year, as well as attendees;
- the number of school buildings with a full-time school nurse and nurse/student ratios;
- the number of medications administered in schools; and
- health and/or education needs.

Program surveillance is the systematic collection and interpretation of data on specific indicators related to health. Examples are:

- the number of students in a school district with asthma;
- the number of students who report using tobacco;
- the number of playground injuries; and
- BMIs.

Program monitoring and surveillance are frequently used interchangeably, and both assess the activities of the school health program. Program monitoring usually deals with what is being done, whereas surveillance usually tracks health status indicators for populations of children.

Computerized Systems and School Health Data

School health data can quantify the scope and extent of health services provided in schools. It also provides information about the make-up and health of the ever-changing school-age population. It may demonstrate the extent to which environmental factors (such as air quality) and school and community influences (such as the availability of healthy nutrition and physical activity choices) impact student health.

The primary method for collecting school health data is the use of computerized data collection systems. Computerized school health data facilitates more informed program planning and management in the following areas:

- completion of local and state needs assessments;
- application of utilization and productivity measures to improve resource allocation;
- development of evidence-based programs, policy directives, and initiatives;
- evaluation of programs and services; and
- identification of opportunities to improve practice, including implementation of systematic continuous quality improvement programs.

Computerized school health data systems facilitate improved local, state, and federal reporting through the:

- creation of annual reports for local school committees, administrators, and community leaders;
- ability to monitor state-mandated programs and screenings;
- supplementation of existing statewide public health surveillance of the school-age population;
- ability to comply with federal reporting requirements; and
- tracking of infectious disease outbreaks.

In addition to school health data, there are other sources of data that computerized systems make accessible and that nurses may find useful for purposes of program planning, development, and implementation. MassCHIP includes data from over 28 data sources, including the U.S. Census, Hospital discharge data, and the Behavioral Risk Factor Surveillance System. The Youth Risk Behavior Survey and the Massachusetts Youth Health Survey provide statewide (and, in some cases, regional) estimates of levels of risk behaviors such as smoking, alcohol and drug use, seatbelt usage, sexual behavior, and nutritional intake.

While data collection and analysis may prove useful for purposes of program planning and development, school nurses should consider the cost of collecting and using data, including equipment, training, maintenance, and human resources. It is preferable to collect fewer pieces of data and conserve resources to carry out the proper analysis and reporting steps.

Continued Development of Computerized School Health Information Systems

Computerized school health information systems have been in widespread use for a relatively short period of time. The technology is still evolving, but the direction of development is clearly toward more complex and integrated systems that allow for greater data sharing and manipulation. This is inevitable, because capturing more and better information about student health status and school nursing services requires increasing the quantity of data elements. Making efficient and effective use of the information collected also requires integration of the multiple, overlapping systems used by different schools, governmental offices, and agencies. For example, district-wide health reporting and maintenance of information relating to individual students throughout their school years could be greatly simplified by all the schools in a district using standardized network software.

Integration can be achieved in a number of ways. One method involves increasing the capability to exchange data across different systems. For example, school health software vendors have been creating and improving tools for importing data from a school district's administrative system into the school health information system. Another method involves creating a single unified or centralized data system. Some school districts do this by using a "modular" administrative information system that includes school health data as one module. The continued evolution of these systems could eventually lead to a further integration of school health data across various local and state agencies, perhaps through a single point of entry (such as a Web application). However, such a system may be several years away.

Identifying all of the factors one should consider in the selection of a school health software package is beyond the scope of this manual. School nurses should be involved in the selection of software and need to be informed about the issues involved. Sources of information about selecting school health software include the *School Health Data Systems Resource Guide* (Massachusetts Department of Public Health, 1999) and contact with other local school nurses who have used various data systems.

The greatest challenge to developing and maintaining local school health information systems is the availability of technical expertise for ongoing support and development. School nurses should be an integral part of the development of screening and reporting design as their local system is developed. Computer coordinators should be knowledgeable concerning hardware and software acquisitions and locally sited to provide technical assistance and consultation, as needed.

ESTABLISHING COMMUNITY CONNECTIONS

Accessing key decision makers, stakeholders, organizations, and communications systems within the community can be a challenge for the school health program leadership. Because each community is unique, strategies that are effective in one community may need to be altered dramatically in another. The following recommendations address various community stakeholders and focus on developing "connectivity," which the Harvard Center for Public Health Preparedness defines as the development of "a seamless web of organizations, people, resources, and information" across the community to promote positive outcomes.

- **School Committee:** As representatives of the community, school committee members have a stake in both the health and education of youth. It is important for school health personnel to share school health data, including service data, with school committee members on a regular basis, highlighting health trends and issues in the school population.

- **School Health Advisory Committee:** Critical to a quality comprehensive health program, this committee should include a range of community representatives as well as school personnel, students, and parents. The committee offers a structure for discussing youth health issues in depth and obtaining advice from community members. (See Chapter 2 for more detail.)
- **Board of Health (BOH):** The BOH is responsible for the health of the community's population. Among its responsibilities affecting schools are enforcing isolation and quarantine regulations and leading the community's planning for emergency preparedness, including flu pandemic and bioterrorism. The BOH and school health personnel should act as partners in addressing communitywide issues such as indoor air quality and overweight prevention. In addition, schools need to share aggregate information such as asthma surveillance data.
- **Parent/Teacher Organizations and School Site Councils**: Parents can be the greatest supporters of quality school health programs. Regular presentations about the issues can be a vehicle for securing their support.
- **Public Safety and Emergency Medical Services:** Schools need to form working relationships with public safety services on a variety of issues, such as response to individual and group emergencies and prevention of violence.
- **Coalitions and Committees Addressing Health Issues Affecting the Student Population:** A school nurse or other member of the school health program can assist these groups by offering unique insights into such areas as teen pregnancy, violence, tobacco use, behavioral health, or drug abuse. Conversely, the school's participation may lead to new resources and relationships to assist students in these areas.
- **Key Leaders in Civic, Faith, and Business Organizations:** School health personnel are encouraged to seize opportunities to meet with key leaders in these organizations to interpret the school health program's mission and goals. Presentations at local meetings of these groups may also garner resources and support for efforts on behalf of the community's youth.
- **Representatives of Local Hospitals and Community Health Centers:** Collaborations and communication systems developed with local hospitals and community health centers are mutually beneficial in many ways. Communication on behalf of clients may be enhanced. Sharing continuing education offerings may benefit both groups. Presentations by school personnel at hospital rounds may emphasize that the school health program is an extension of health care into the community.
- **Primary Care Providers:** Inviting local pediatricians and other medical providers to visit the school and learn about the health program may enhance collaboration and lead to development of effective communication systems. Schools have used a variety of methods to improve collaboration, such as inclusion of providers on the health advisory committee, sharing the names of school nurses who cover each building, and holding an annual breakfast for local primary care providers.
- **Dental Providers:** As oral health is increasingly recognized as critical to health and well-being, school health programs have established creative collaborations to address this issue. In some communities, local dentists and dental hygienists have contributed time for oral health education, assessments, application of dental sealants, and treatment of children who lack dental providers.
- **Local Universities and Schools of Medicine and Nursing:** School health programs offer clinical practice opportunities for educating nurses and physicians. Collaborations with these institutions also may provide the impetus for much-needed research into the outcomes of school health programs.
- **Local Media:** Forging positive relationships with the media (e.g., newspaper or cable television) offers many opportunities for sharing important health promotion messages. In addition, as schools expand the use of technology, they are developing comprehensive websites accessible to a large percentage of the population.

As communities continue to develop comprehensive coordinated school health programs, they may discover unique opportunities to promote the health of their children and youth.

EVALUATION OF THE HEALTH PROGRAM

In order to determine the school's effectiveness in meeting the health needs of students and staff, it is essential to evaluate the comprehensive health service program. The purpose of program evaluation is to assess whether or not the goals and objectives of the school health program are being met.

School Nursing Research Agenda and Desired Outcomes

Many priorities around school nursing research and desired outcomes for school nursing practice have been identified over the years. Following are a few examples that may be useful to schools as they determine design and implementation of appropriate evaluation plans.

The National Nursing Coalition for School Health has developed a school nursing research agenda (Edwards, 2002). The top 3 research issues for school nursing were prioritized as follows:

- impact of school nurse services on student health;
- relationship between school nurse practice and educational outcomes; and
- benefits and cost-effectiveness of school health services.

Ten broad categories of desired outcomes for school nursing practice have been identified and prioritized by a group of school nurses representing all regions of the country (Selekman & Guilday, 2003). These originally appeared in the *Journal of School Nursing:*

- Students have increased time in the classroom;
- Students receive first aid, emergency services, and services for their acute care needs;
- Students receive needed, competent health-related interventions;
- Students with chronic conditions have their health care needs met;
- Overall health of the school is enhanced by wellness promotion and disease prevention measures;
- Students receive appropriate referrals related to the assessments made;
- The environment in which students learn is safe;
- Overall health of the school is enhanced by community outreach to meet student needs;
- School nursing services are cost-effective; and
- Parents, educators, administration, and staff express satisfaction with health-related services.

Types of Evaluation

Ongoing data collection and evaluation are central to promoting responsiveness in programs, staffing, funding, and resources. The results and recommendations that come from an evaluation then become input for subsequent planning. This feedback loop allows plans to be revised as needed in order to keep programs appropriate, realistic, and effective. It also provides the health team with measures of accountability.

There are several ways to design an evaluation, depending on the questions that are being asked about the program, and each design has a different name. For example, evaluations can be referred to as Continuous Quality Improvement projects, formative evaluation, process evaluation, and outcome evaluation. Each type is discussed briefly below.

Continuous Quality Improvement (CQI)

A continuous quality improvement (CQI) project is a type of evaluation that focuses on monitoring one aspect of a program with the intent of improving that particular program component. Specific indicators are developed to measure performance; activities are implemented; indicators are monitored; changes are documented; and progress toward an established goal is measured. Once improvement has occurred and the goal has been achieved, another aspect of the program is selected for monitoring. As the name implies, this is a dynamic and ongoing process of constantly striving for performance improvement.

Formative Evaluation

Formative evaluation is an ongoing type of evaluation that is carried out while a program or materials are being developed. The assumption is that the results of an evaluation performed during this phase will be used to help improve the program or materials being designed. It begins at the start of the program planning and design and continues during development and implementation.

The first phase is *needs assessment*, which establishes baseline data on the need for a service, a program, a curriculum, or materials. It should always take place before embarking on a project. The *School Health Index* (SHI) is a self-assessment and planning guide developed by the Centers for Disease Control and Prevention (CDC) that may be used as part of the assessment process (see Exhibit 2-2).

During *field testing*, the program or materials are tested for effectiveness. Data collected will help fine-tune materials, pinpoint any problems, aid in the revision of process, and assist in the development of new materials. Developers should use different situations or settings (reflective of the target audience) to try out the program, whether it be students, faculty, parents, or all of them.

Process Evaluation

Another type of evaluation is process evaluation, which seeks to answer the question “Is the program or project being implemented as planned?” As the program is implemented, process evaluation helps staff answer questions such as: "Is the program being used?", "How?", "Is what we're assessing what was planned?", "Are we reaching our intended targets?", and "What should we be monitoring in our program?". This type of evaluation should be used as an ongoing self-assessment management tool that explores program process from beginning to end.

Outcome Evaluation

Outcome evaluation (also called summative evaluation) examines the success of the program in meeting specific objectives, such as whether there were changes in the health behavior or health status of students and/or staff. It may look at participant satisfaction, numbers served, and objective measures of change. Did the program make a difference? What are immediate changes as a result of the program? For instance, as a result of a program to improve food in vending machines, did students eat less junk food? What can be done to improve the program? Should it be continued?

Impact evaluation looks at longer-term changes that can help answer the question of overall program effectiveness. Some examples may include reducing costs, improvement in student health or productivity, or lower rates of school violence over an extended period of time.

For both outcome and impact evaluations, it may be helpful to consult a skilled, experienced external evaluator who has some medical knowledge and understands the mechanics behind day-to-day triage in a health office. More rigorous evaluations have a control or comparison group. The basis of any good outcome evaluation is a good management information system for all children in the program.

SUMMARY

Establishing an effective school health program maximizes students' educational experience, while providing a safe, caring, and healthful environment for both students and staff. Because of the important role that health plays in educational achievement, health services are critical elements of a comprehensive, coordinated health and human services program. School health service programs continue to serve traditional roles of infection control and health screenings. However, the increasingly complex and diverse health conditions presented by students demand extensive and rapidly expanding services, many of which were formerly provided only in formal health care settings, such as hospitals and clinics. Furthermore, because of societal changes and the restructuring of the health care system, schools and school nurses now serve as a health safety net for all children, often providing the point-of-entry for obtaining health care. In this role, school nurses have become critical components of community health care delivery systems serving children.

As school health needs grow and more children are served, health service programs must establish the infrastructure and standards to support high-quality practice. Highly qualified professional school nurses form the basis of the program and provide the services necessary to permit many children to attend school. Additional key elements include: a vision of school health, a nursing leader, student health needs assessment, an advisory committee, policies and programs, protocols, emergency planning, well equipped health care facilities, documentation and recordkeeping, computerized data systems, a mechanism for evaluation, and coordination with community youth-serving agencies and providers.

Although this chapter has focused on the health care service component of the comprehensive, coordinated school health program, many of the same elements and principles may be applied to other components (e.g., an advisory committee, policies). Highly qualified staff in all areas must work together to ensure that the infrastructure is functioning smoothly and that the systems facilitate close coordination and communication, to avoid duplication.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS

American Heart Association (AHA)
20 Speen Street
Framingham, MA 01701
Phone: 508-620-1700
Fax: 508-620-6157
(The office above is the headquarters of the Northeast Affiliate. For information on other AHA offices throughout Massachusetts, call here or go to http://www.americanheart.org/presenter.jhtml?identifier=10000028)

American Red Cross
Website: http://www.redcross.org/where/chapts.asp#MA
There are multiple local chapters across Massachusetts. Use this website to find the closest.

Boston Area Nursing Informatics Consortium (BANIC)
Website: http://www.baniconline.org
A not-for-profit organization that provides a forum for resource and information exchange in the field of clinical informatics.

Massachusetts School Nurse Organization (MSNO)
P.O. Box 1287
Marblehead, Massachusetts 01945
E-mail: thomson@msno.org
Website: http://www.msno.org
Founded in 1970, the Massachusetts School Nurse Organization (MSNO) has been a strong voice for school nurses throughout the Commonwealth. MSNO is a growing nonprofit organization with approximately 800 members, including school nurses, school administrators, public health nurses, practitioners, consultants, educators, and retired school nurses. MSNO promotes and advances the professional practice of school nursing throughout Massachusetts. Members are encouraged to take an active stance in decisions directly impacting school nursing, especially in the legislative, economic, and educational arenas.

Massachusetts Organization of Nurse Executives (MONE)
101 Cambridge Street, Suite 220
Burlington, MA 01803
Phone: 781-272-3500
Fax: 781-272-3505
E-mail: info@massone.org
Website: http://www.massone.org/
MONE represents over 500 nursing leaders from diverse practices across Massachusetts. The mission of the organization is to provide direction and leadership for the advancement of professional nursing and patient care, and for the achievement of excellence in nursing management practice.

Massachusetts Coalition of School-Based Health Centers
95 Berkeley Street, Suite 201
Boston, MA 02116
Phone: 617-451-0049
Fax: 617-451-0062
E-mail: mcsbhc@tmfnet.org
Website: http://www.mcsbhc.org
School-based health centers are places where children have access to quality health care in school. There are over 10 such centers in Massachusetts and the Massachusetts Coalition for School-Based Health Centers' (MCSBH) website provides a summary message of efforts and goals for these centers from the executive director.

Massachusetts Department of Public Health
Center for Emergency Preparedness
250 Washington Street, 2nd floor
Boston, MA 02108
Phone: 617-624-5275
Fax: 617-624-5587
Special Populations guidance for Local Boards of Health

Massachusetts Department of Public Health
Coordinated School Health Program
250 Washington Street
Boston, MA 02108
Phone: 617-624-5537
Fax: 617-624-6062
TTY: 617-624-5992
Website: http://www.mass.gov/dph/fch/schoolhealth/cshp.htm
The Coordinated School Health Program is a collaborative effort between the Massachusetts Department of Education (DOE) and the Massachusetts Department of Public Health (DPH) to improve the health of K-12 students in order to advance their academic performance.

Massachusetts Department of Public Health
School Health Services
250 Washington Street
Boston, MA 02108
Phone: 617-624-6060
Fax: 617-624-6062
TTY: 617-624-5992
Website: http://www.mass.gov/dph/fch/schoolhealth/index.htm
School Health Services is a collaborative effort between professional staff and other Department of Public Health and Massachusetts Department of Education personnel to improve school health services, develop policies, and provide information about health issues and needs.

Massachusetts Emergency Management Agency (MEMA)
400 Worcester Road (Route 9)
Framingham, MA 01702-5399
Phone: 508-820-2000
Website: http://www.mass.gov/?pageID=eopsagencylanding&L=3&L0=Home&L1=Public+Safety+Agencies&L2=Massachusetts+Emergency+Management+Agency&sid=Eeops

Region 1
365 East Street, Tewksbury, MA 01876
Phone: 978-328-1500

Region 2
12 I Rear, Administration Road
Bridgewater, MA 02324-0054
Phone: 508-697-3111

Regions 3 & 4
7 Berkshire Avenue
Belchertown, MA 01007-8900
Phone: 413-323-6306

The MEMA website also provides a list of Emergency Management Directors by town.

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS

AED Instructor Foundation
600 N. Jackson Street, Suite 1
Media, PA 19063
Phone: 800-572-2227 or 610-566-2824
Fax: 610-566-2826
E-mail: director@aedif.org
Website: http://www.aedif.org
The AED Instructor Foundation was created to assist and support instructors in preparing communities and workplaces — especially public gathering places and small businesses — for appropriate and effective emergency medical response. The Foundation provides resources, educational seminars, and promotional tools to help instructors provide critical training in CPR and early defibrillation. It also maintains a searchable online database of qualified, Foundation-affiliated AED instructors.

American Heart Association (AHA)
National Center
7272 Greenville Avenue
Dallas, TX 75231
Phone: 800-AHA-USA-1 or 800-242-8721
Website: http://www.americanheart.org
AHA is a national voluntary health agency whose aim is to reduce the incidence of cardiovascular disease and stroke.
Materials: *Medical Emergency Response Plan for Schools (MERPS) Sample Plan* — a model plan developed as a starting point and resource for schools developing a Medical Emergency Response Plan. Available at: http://www.americanheart.org/presenter.jhtml?identifier=3018039

American Nursing Informatics Association (ANIA)
PMB 105
1908 Foothill Blvd., Suite H
San Clemente, CA 92672
Website: http://www.ania.org
ANIA was created in 1992 as a networking organization for informatics nurses in Southern California. It has since grown as a non-profit organization with members across the U.S.

The American Organization of Nurse Executives (AONE)
Liberty Place
325 Seventh Street, NW
Washington, DC 20004
Phone: 202-626-2240
Fax: 202-638-5499
Website: http://www.aone.org
Official publications are: *Nurse Leader, as well as AONE eNews Update* and *Voice of Nursing Leadership.*™

American Red Cross
National Headquarters
2025 E Street, NW
Washington, DC 20006
Phone: 202-303-4498
Website: http://www.redcross.org
Founded in 1881 by Clara Barton, the American Red Cross is the nation's premier emergency response organization. In addition to its original purpose of providing disaster relief, the American Red Cross now offers services in five other areas: community services for the needy, support for military members and their families, processing and distribution of lifesaving blood, educational programs advancing health and safety, and international relief and development programs.

Publications: *Emergency Supplies for Schools* contains information on recommended supplies for schools, classrooms, and students. It includes instructions on assembling supplies and provides background information, as well as specific listings of suggested items that schools and schoolchildren should have. This list was developed from lists created by the California Senate Select Committee on the Northridge Earthquake, Task Force on Education, and updated October, 2000, by the American Red Cross. Available online at http://www.redcross.org/disaster/masters/supplies.html

Videos: Y*our Guide to Home Chemical Safety and Emergency Procedures*. A 22-minute video that provides visual description of chemical emergency response procedures. Local Red Cross chapters can order as stock number A5045V. *Adventures of the Disaster Dudes.* Video-based program comes with a Presenter's Guide and a 14-minute video. The video is designed to be shown in 3 segments that feature children describing what a disaster really is, information on correct response, and how to create a family disaster plan. Local Red Cross chapters can order as stock number A5024 for a nominal fee.

American School Health Association (ASHA)
7263 State Route 43
P.O. Box 708
Kent, Ohio 44240
Phone:330-678-1601
Fax: 330-678-4526
E-mail: asha@ashaweb.org
Website: http://www.ashaweb.org/

Publication: *Health in Action*, a quarterly newsletter for school health professionals.

Bureau of Primary Health Care (BPHC), Healthy Schools, Healthy Communities Program
Health Resources and Services Administration
U.S. Department of Health and Human Services
Parklawn Building
5600 Fishers Lane
Rockville, Maryland 20857
Website: http://bphc.hrsa.gov/
BPHC is one of four Bureaus of the Health Resources and Services Administration (HRSA), an agency in the Department of Health and Human Services. Healthy Schools, Healthy Communities was established in 1994 to encourage the development of new, comprehensive, full-time, school-based primary care programs that serve high risk children. This website includes project files, full text publications, and links.

The Center for Health and Health Care In Schools
2121 K Street, NW Suite 250
Washington, DC 20036
Phone: 202-466-3396
Fax: 202-466-3467
E-mail: chhcs@gwu.edu
Website: http://www.healthinschools.org
Publication: *Health and Health Care in Schools,* a monthly online report on “the policies, politics and financing of health programming in schools.”

Drugs @ FDA
Website: http://www.accessdata.fda.gov
A searchable database that includes information on approved prescription drugs, over-the-counter drugs and discontinued drugs. Located on the website of FDA's Center for Drug Evaluation and Research (CDER), it is the first Web resource to offer a comprehensive overview of a drug product's approval history.

Emergency Medical Services for Children (EMSC)
Phone: 202-884-4927 (main) or 703-902-1203 (EMSC Clearinghouse-product orders)
Fax: 202-884-6845
E-mail: information@emscnrc.com (general) or emsc@circlesolutions.com (Clearinghouse)

Website: http://www.ems-c.org/contact/framecontact.htm

The Emergency Medical Services for Children Program is a national initiative designed to reduce child and youth disability and death due to severe illness and injury. Medical personnel, parents and volunteers, community groups and businesses, and national organizations and foundations all contribute to the effort. HRSA administers the program in partnership with the U.S. Department of Transportation's National Highway Traffic Safety Administration.

Publications:

- *Disaster Preparedness for School Nurses: Instructor Manual*. (001039)
- *Guidelines for the Nurse in the School Setting*. Revised. (001040)

FEMA Region 1
99 High Street
6th Floor
Boston, MA 02110
Website: http://www.fema.gov/regions/i/index.shtm

National Assembly on School-Based Health Care
666 11th Street NW
Washington, DC 20001
Phone: 202-638-5872
Fax: 202-638-5879
E-mail: info@nasbhc.org
Website: http://www.nasbhc.org/
The National Assembly is a not-for-profit membership association whose mission is to promote interdisciplinary school-based health care.

National Assembly on School-Based Health Care
Center For Technical Assistance & Training
Website: http://www.nasbhc.org/TAT/Index.htm
The National Assembly strives to serve as the premiere professional development and information arm of the school-based health care field. Its Center for Technical Assistance & Training offers tool kits on creative financing and operations, training opportunities, a virtual tour of an SBHC, links and general resources.

National Association of School Nurses (NASN)
8484 Georgia Avenue, Suite 420
Silver Spring, Maryland 20910
Phone: 866-627-6767 or 240-821-1130
Fax: 301-585-1791
E-mail: nasn@nasn.org
Website: http://www.nasn.org
NASN was founded in 1968 by the National Education Association (NEA) as an association committed to the betterment of school nursing practice and the health of school-aged children. Originally established as the Department of School Nurses (DSN), NASN formally separated from the NEA in 1979 and now continues to be the largest national association for school nurses. NASN partners with national health organizations to develop educational programs, publishes issue briefs on subjects affecting student health and school nursing, and maintains a legal representative in Washington, D.C. to promote school nurse issues.

National Clearinghouse for Educational Facilities (NCEF)
Website: http://www.edfacilities.org/rl/health_centers.cfm
Created by the U.S. Department of Education, NCEF is a free public service that provides information on planning, designing, funding, building, improving, and maintaining schools. The Web address above connects to NCEF's resource list of links, books, and journal articles on the planning, design, furnishings, and equipment of school-based health facilities, including health centers, health suites, clinics, or a health room.

National School Boards Association — School Health Programs
1680 Duke Street, Alexandria, VA 22314
Phone: 703-838-6722
Fax: 703-683-7590

E-mail: Schoolhealth@nsba.org
Website: http://www.nsba.org/site/page_SH_home.asp
The website supports NSBA's commitment to help school policy makers and educators make informed decisions about health issues affecting the academic achievement and healthy development of students and the effective operation of schools. Project staff are able to assist with development and technical review of local district policies. The School Health Resource Database contains sample policies, journal articles, program descriptions and more.

Northeast States Emergency Consortium (NESEC)
1 West Water Street, Suite 205
Wakefield, MA 01880
Phone: 877-99-NESEC (877-996-3732)
Fax: 781-224-4350
Website: http://www.nesec.org
NESEC is a non-profit organization dedicated to hazard mitigation and emergency management. It is the only organization of its kind in the country and is funded by The Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA).

Office of School Health
University of Colorado Health Sciences Center
School of Nursing
Campus Box F-541
P.O. Box 6508
Aurora, CO 80045
Phone: 866-724-0645 (toll-free) or 303-724-0643 (direct to librarian)
Fax: 303-724-0905
E-mail: osh.librarian@uchsc.edu
Website: http://www.uchsc.edu/schoolhealth/index.htm
Course offerings include: Fundamentals in School Health and School Nursing; Certificate Program for School Health Coordinator; School Nurse Achievement Program; and Center City USA, a course that provides nurses with necessary skills to develop a strategic management plan for a comprehensive school health program.

School Health Alert Newsletter
P.O. Box 150127
Nashville, TN 37215
Phone: 615-370-7899
Fax: 615-370-9993
E-mail: cs@schoolnurse.com
Website: http://www.schoolnurse.com
This website is an online version of *School Health Alert*, a monthly newsletter intended to keep school nurses and other relevant health professional up-to-date on the latest developments in student health services, health education, and safe school environment.

School Health Evaluation Services (SHES)
Office of School Health
University of Colorado Health Sciences Center
School of Nursing
Campus Box F-541
P.O. Box 6508
Aurora, CO 80045
Phone: 303-724-0644
Website: http://www.uchsc.edu/schoolhealth
School Health Evaluation Services (SHES) provides technical assistance, training and onsite services to educational administrators, health professionals, and community groups in managing data related to all aspects of school health services. The data may include school health records, health needs assessment/surveys, program evaluation and report generation, and continuous quality improvement efforts.

School Health Resource Services (SHRS)
Office of School Health
University of Colorado Health Sciences Center
School of Nursing
Campus Box F-541
P.O. Box 6508
Aurora, CO 80045
Phone: 866-724-0645 (toll-free) or 303-724-0643 (direct to librarian)
Fax: 303-724-0905
E-mail: osh.librarian@uchsc.edu
Website: http://www.uchsc.edu/schoolhealth/index.htm
School Health Resource Services (SHRS) is a network of services designed as a coordinating link between school health services professionals and the information available from school health, maternal and child health, education, and other disciplines. SHRS provides technical information, resource materials, and research assistance, along with full service library and database of school health and related information, including commercially available databases such as Medline, CINAHL, ERIC, PsycInfo, and other biomedical and evidence-based resources.

Materials: *School Health Needs Assessment: A Starter Kit*. The kit is a notebook containing information and step-by-step worksheets to guide school health professionals through the process of needs assessment.

TrainingFinder.org
Public Health Foundation
1220 L Street, NW Ste. 350
Washington, DC 20005
Phone: 202-898-5600
Fax: 202-898-5609
Website: http://www.trainingfinder.org
The Public Health Foundation, with funds from the Health Resources and Services Administration, offers a one-stop, online central repository of distance learning material. At no cost, users can search the site containing more than 200 courses by subject, target audience, credit type, or keyword.

REFERENCES

American Academy of Allergy, Asthma and Immunology. (1998). Anaphylaxis in schools and other child care settings. *Journal of Allergy and Clinical Immunology*, *102*, 173–176.

American Academy of Pediatrics, Committee on School Health, Policy statement (2001). The role of the school nurse in providing school health services. *Pediatrics*, *108*(5), 1231–1232. Retrieved in 2006 from http://www.aap.org.

American Academy of Pediatrics, Committee on School Health. (2001). Guidelines for emergency medical care in school. *Pediatrics, 107*, 435–436.

American Academy of Pediatrics, Committee on Pediatric Emergency Medicine. (1999). Emergency preparedness for children with special health care needs. *Pediatrics, 104*, e53.

American Heart Association. (2004). Response to cardiac arrest and selected life-threatening medical emergencies: The medical emergency response plan for schools: A statement for health care providers, policymakers, school administrators, and community leaders. *Circulation, 109*, 278–291. Retrieved in 2006 from http://circ.ahajournals.org/cgi/content/full/109/2/278.

American School Health Association. (2000). *Guidelines for protecting confidential student health information*. Kent, OH: Author.

Barrett, J. C. (2001). Teaching teachers about school health emergencies. *Journal of School Nursing*, *17*(6), 316–322.

Black, S. (2004). When disaster strikes: Sound crisis management means being prepared for the worst. *American School Board Journal*, *191*(7).

Bergren, M. D. (2004). Privacy questions from practicing school nurses. *Journal of School Nursing, 20*(5), 296–301.

Bergren, M. D. (2004). HIPAA-FERPA revisited. *Journal of School Nursing, 20*(2), 107–112. PMID: 15040763.

Bergren, M. D. (2001). HIPAA hoopla: Privacy and security of identifiable health information. *Journal of School Nursing, 17*(6), 336–341.

Bobo, N., Hallenbeck, P. & Robinson, J. (2003). Recommended minimal emergency equipment and resources for schools: National consensus group report. *Journal of School Nursing: 19*(3), 150–156.

Butin, D. (2000). School health centers. *National Clearinghouse for Educational Facilities*. Retrieved in 2006 from http://www.edfacilities.org/pubs/healthctr.html.

Center for Health and Health Care in Schools. (2003*). 2002 State survey of school-based health center initiatives*. Washington, D.C.: George Washington University. Retrieved in 2006 from http://www.healthinschools.org/sbhcs/survey02.htm.

Coulam, R. F., Irvin, C.V., Calore, K. A., Kidder, D. E. & Rosenbach, M.L. (1997). Managing access: Extending Medicaid to children through school-based HMO coverage. *Health Care Finance Review, 18*(3), 149–175. PMID: 10170346.

Denehy, J. (2003). Documentation dilemma: What to record and why. *Journal of School Nursing, 19*(4), 187–190.

Dickey, S. B., Kiefner, J. & Beidler, S. M. (2002). Consent and confidentiality issues among school-age children and adolescents. *Journal of School Nursing, 18*(3), 179–186.

Edwards, L. H. (2003). Research priorities in school nursing: A Delphi process. *Journal of School Nursing, 19*(3), 157–162.

Guttu, M., Engelke, M. K. & Swanson, M. (2004). Does the school nurse-to-student ratio make a difference? *Journal of School Health*, *74*(1), 6–9. PMID: 15022369.

Hodge, J. G. Jr., Brown, E. F. & O'Connell, J. P. (2004). The HIPAA privacy rule and bioterrorism planning, prevention, and response. *Biosecur Bioterror, 2*(2), 73–80. PMID: 15225400.

International Liaison Committee on Resuscitation. (2003). Use of automated external defibrillators for children: An update. *Advisory Statement From the ILCOR Pediatric Advanced Life Support Task Force*, *107*, 3250. Retrieved in 2006 from http://circ.ahajournals.org/cgi/content/full/107/25/3250.

Katz, J. (2004). Partners for health: Working with a local hospital, a school district reaches out to students**.** *American School Board Journal, 191*(5), 40**–**42.

Kelly, M. W., McCarthy, A. M. & Mordhorst, M. J. (2003). School nurses' experiences with medication administration. *Journal of School Nursing*, *19*(5), 281–287.

Kieltyka, E. G. (1997). *Developing a school-based health center: An assistance manual.* (Report No. PS026782). Augusta, ME: Maine State Department of Human Services, Bureau of Health. (ERIC Document Reproduction Service No. ED431504).

Lewis, A. & Belmonte-Mann, F. (2002). Decision support tools aid school nursing practice. *Journal of School Nursing, 18*(3), 170–173.

The Life-Threatening Food Allergies in Schools Task Force. (2002). *Managing life threatening food allergies in schools.* Malden, MA: Massachusetts Department of Education. Retrieved in 2006 from http://www.doe.mass.edu/cnp/2002/news/allergy.pdf.

Markenson D. S & Domeier R. M. (2003). The use of automated external defibrillators in children. *Prehospital Emergency Care, 7*, 258–264.

Maryland State Dept. of Education, Division of Business Services, School Facilities Branch. (2002). *School health services: A facility planning and design guide for school systems*. Baltimore, MD: Maryland State Department of Education. (Eric Document Reproduction Service No. ED468855).

Massachusetts Department of Education. (1995). *Student records: Questions, answers and guidelines.* Malden, MA: Massachusetts Department of Education. Retrieved in 2006 from http://www.doe.mass.edu/lawsregs/advisory/cmr23qanda.html?section=summary.

The Massachusetts Statewide School Emergency Care Planning Council. (2001). *Developing an emergency response plan for your school: Guidelines.* Boston, MA: Author. Retrieved in 2006 from http://www.state.ma.us/dph/fch/emsc/emerplan.htm.

McIntyre, C. L., Sheetz, A., Carroll & Young, M. (2005). Administration of Epinephrine for life threatening allergic reactions in school settings. *Pediatrics, 116*(5), 1134–1140

Morris, R. I. & Strong, L. (2004). The impact of homelessness on the health of families. *Journal of School Nursing, 20*(4), 221–227.

The National Assembly on School-Based Health Care. (2000). *Floor plan: Edison Elementary School clinic*. Washington, DC: Author. Retrieved in 2006 from http://www.nasbhc.org/TAT/FloorPlan.htm.

National Association of School Nurses. (2003). Issue brief: School health nurse's role in education: Privacy standards for student health records. *Journal of School Nursing, 19*(2), 119–123.

Newell, S., Schoenike, S. L. & Lisko, E. A. (2003). Quality assurance in school health. *Journal of School Nursing, 19*(3), 157–162.

Porter, Stephanie et al. (1997). *Children and youth assisted by medical technology in educational setting:, Guidelines for care* (2nd ed.). Baltimore, MD: Paul H. Brookes, Publishing Co.

Robinson, V. (2003). The other health privacy law: What FERPA requires of schools. *InFocus,* the online newsletter of the Center for Health and Health Care in Schools. January. Retrieved in 2006 from http://www.healthinschools.org/focus/2003/no1.htm.

Romano, J. (2001). The complicated task of managing school health programs. *Journal of School Nursing, 17*, 126–130.

Samson, R. A., Berg, R. A., Bingham, R. et al. (2003). Use of automated external defibrillators for children: An update. *Circulation, 107*, 3250–3255.

Schwab, N. C. & Gelfman, M. H. B. (Eds.). (2001). *Legal issues in school health services: A resource for school administrators, school attorneys and school nurses (*2nd ed.). North Branch, MN: Sunrise River Press.

Schwab, N. C. & Pohlman, K. J. (2004). Records — The Achilles' heel of school nursing: Answers to bothersome questions. *Journal of School Nursing, 20*(4), 236–241.

Selekman, J. & Guilday, P. (2003). Identification of desired outcomes for school nursing practice. *Journal of School Nursing*, *19*(6), 344–350.

Sheetz, A., Goldman, P., Millett, K., Franks, J., McIntyre, C.L., Carroll, C. et al. (2004). Guidelines for managing life-threatening food allergies in Massachusetts schools. *Journal of School Health, 74*(5), 155–160.

Sheetz, A. (2003). Developing school health services in Massachusetts: A public health model. *Journal of School Nursing, 19*(4), 204–211.

Sheetz, A. (2002). Developing a strategic plan for school health services in Massachusetts. *Journal of School Health, 72*(7), 278–281.

Sheetz, A. (1998). School entry: A safety net for children's health. *ShotClock: Immunization Information for Health Care Providers from the MCAAP Immunization Initiative, 4*(2), 1.

Sheetz, A. & McIntyre, L. (2005). Anaphylaxis experienced by school children offers opportunities for ED Nurse, School Nurse Collaboration. *Journal of Emergency Nursing, 31* (1), 102–104.

Telljohann, S. K., Price, J. H., Dake, J. A. & Durgin, J. (2004). Access to school health services: Differences between full-time and part-time school nurses. *Journal of School Nursing*, *20*(3), 176–181. PMID: 15147224.

Weiss, C., Muñoz-Furlong, A., Furlong, T. J. & Arbit, J. (2004). Impact of food allergies on school nursing practice. *Journal of School Nursing, 20*(5), 268–278.

Winland, J. & Shannon, A. (2004). School staff's satisfaction with school health services. *Journal of School Nursing, 20*(2), 101–106.

Wolf Grant, T. (2002). Bring your first aid kit: An unannounced mock drill. *Journal of School Nursing, 18*(3), 174–178.

Note: Articles with PMID number have been indexed by PubMed for MEDLINE.

EXHIBITS

Exhibit 2-1 Sample School and Community Needs Assessment

Exhibit 2-2 The School Health Index

Exhibit 2-3 Logic Model of School-Based Asthma Program

Exhibit 2-4 Sample Action Plan

Exhibit 2-5 Action Plan: Sample Form

Exhibit 2-6 Identification and Referral Program

Exhibit 2-7 Sample Position Description: School Nurse Leader

Exhibit 2-8 Sample Position Description: School Nurse

Exhibit 2-9 Template for MA School Physician/Medical Consultant Role

Exhibit 2-10 Sample Position Description: School Health Aide/Assistant

Exhibit 2-11 Sample Position Description: School Nurse Practitioner

Exhibit 2-12 Sample Position Description: Health Education and Human Services Coordinator

Exhibit 2-13 Sample Agreement: Formal Written Agreement with the Local Board of Health

Exhibit 2-14 Sample Content Outline: Policies and Protocols Manual

Exhibit 2-15 General Laws of Massachusetts Chapter 112: Section 12V

Exhibit 2-16 Sample Policy: Procedures for Automated External Defibrillator (AED)

Exhibit 2-17 Student Health Memo to Parents/Guardians

Exhibit 2-18 Student Health and Emergency Information Form (Form A)

Exhibit 2-19 Student Health and Emergency Information Form (Form B)

Exhibit 2-20 Sample Employee Emergency Information Form

Exhibit 2-21 Sample 24-Hour Shelter Emergency Medication and Care Plan

Exhibit 2-22 Sample Floor Plans for School Health Suite and Center

Exhibit 2-1 Sample School and Community Needs Assessment

I. Describing the Student Population of Your School

1. Grades the school(s) include:

2. Total school(s) population:

3. Number of students in each age group that you serve?

Pre-kindergarten (4 yrs and under): _____
Ages 5-7: _____
Ages 8-10: _____
Ages 11-14: _____
Ages 15-17: _____
Ages 18 and over: _____

4. Description of community (e.g., urban, suburban, rural, mixed):

5. a) Racial composition of the student body (percentage of following)

White: _____ African American: _____ Asian/Pacific Islander: _____ Hispanic: _____ American Indian/Alaskan Native: _____
Other: _____ (specify: _____) Unknown: _____

b) Ancestry (check each that is represented in your school):

___ Puerto Rican
___ Dominican
___ Central American
___ Other Hispanic
___ Brazilian
___ Cape Verdean
___ Other Portuguese
___ Haitian
___ West Indian
___ Chinese
___ Cambodian
___ Vietnamese
___ Laotian (including Hmong)
___ Other Asian (including Pacific Islander)
___ Pakistani/Asian Indian
___ European
___ African
___ North American
___ Other (specify)
___ Unknown

6. Languages spoken by students at your school(s):
   a) percentage of the student body that does not speak English: _____ b) percentage speaking English as a second language: _____

7. Socioeconomic status of students at your school(s):
   a) average family income (or range of family incomes) of the students at the school: _____
   b) percentage of student body eligible for the free-lunch program: _____
   c) percentage of parents/guardians currently unemployed: _____

Source: Education Development Center, Newton, MA., 1993. Adapted with permission.

II. Assessing the Capacity of Your School(s) in Comprehensive School Health

1. Reproduce as many copies of this page as you need. You may wish to conduct this assessment using the 3 components of health education, health and human services, and school health environment, or you may wish to break them down into more areas.

Comprehensive School Health Area*	Person(s) in charge in your school	Your working relationship with this person: good, average, no relationship	Activities you have carried out in past in this area	School resources (e.g., human, $, info, and material resources, existing collab or committees	School needs (e.g., human, $ info, material, collaborative)	Local, county, or state regs. or policies related to this area (describe)

Source: Education Development Center, Newton, MA., 1993. Adapted with permission.

2. Is there a school health advisory council, committee, or board in your school(s)? What does it do?

3. Based on the capacity of your school (district) as described above and the direction in which you want to move, what are the next steps you might take to expand the comprehensive school health program for students in your school(s)?

III. Assessing the Health-Related Needs of the Students in Your School(s)

1. Which of the following are major health-related problems or issues among the students in your school(s)?

Rank Top Five	PROBLEMS/ISSUES	NO	YES	ESTIMATED PREVALENCE*	SERVICES/SUPPORT FOR STUDENT AVAILABLE IN YOUR SCHOOLS(S)
	Absenteeism				
	Nutrition/eating disorders				
	Sexually transmitted diseases				
	HIV/AIDS				
	Pregnancy				
	Chronic illness				
	Children assisted by medical technology				
	Unintentional injuries				
	Depression				
	Stress				
	Suicide				
	Relationships with family and friends				
	Sexual identity issues				
	Alcohol and other drug abuse				
	Sexual assault/rape				
	Acquaintance violence				
	Family violence and abuse				
	School dropout				
	Parental substance abuse				
	Runaway				
	Lack of regular physical activity				
	Other (describe:)				

2. In the column to the left on the above chart, rank the 5 most important health-related problems or issues for students in your school(s). (1 = most important, 2 = second most important, etc.)

Source: Education Development Center, Newton, MA., 1993 * Number of persons who have a stated problem at a given time.

IV. Assessing the Community's Capacity to Provide Comprehensive Health Services to Students

1. List below the 5 student health problems or issues you rated as most important on the previous page and provide the following information about related services available in your community.

PROBLEMS/ ISSUES	Community Services Available Yes	No	Name, Address, & Phone Number of Agency(s)	Name of Contact Person(s)	Criteria Students Must Meet to Obtain Services	Days & Hours Services Available	Fees for Services ($)	Are Available Services Adequate & Appropriate for Students	If services are not adequate or appropriate, what needs can you identify?

Source: Education Development Center, Newton, MA., 1993.

2. In general, do students in your school(s) know they can get information and/or health services from the agencies you listed on the previous chart?

3. List community coalitions or task forces that have been active in school-age or adolescent health issues.

4. What does each coalition or task force do? (For example, name a concrete product, goal, or outcome.)

5. Are you or any other school staff involved with each coalition or task force?

6. If *yes*, describe the involvement:

7. How could your school(s) and the community work together more effectively to meet students' health needs?

Source: Education Development Center, Newton, MA., 1993

Exhibit 2-2 The School Health Index

Promoting healthy behaviors among students is a critical component in helping schools achieve their central mission of providing youth with the knowledge and skills they need to become healthy and productive adults.[1] The *School Health Index* (SHI) is a self-assessment and planning guide developed by the Centers for Disease Control and Prevention (CDC). This tool will enable schools to:

1. identify the strengths and weaknesses of a school's health promotion programs and policies;
2. develop an action plan for improving student health as a result of the self-assessment, and
3. use a team approach, involving administrators, teachers, school staff, parents, and students in improving the school health promotion programs and policies

The *School Health Index* seeks to improve the overall school health environment to support the health of students and staff through the commitment and involvement of the entire school community. The SHI is composed of 8 modules that correspond to the Coordinated School Health Program model. These modules are:

1. school health policies and environment;
2. health education;
3. nutrition services;
4. physical education;
5. school health services;
6. counseling, psychological, and social services, and
7. health promotion for staff and family and community involvement.

The SHI is intended for use at the school level. However it may be used on a district level, if the school district has a few schools and the health promotion policies and programs at those schools are similar. The SHI has 2 versions, one for elementary school and one for middle school and high school. The most recent version of the SHI (2004) addresses school policies and programs related to physical activity, healthy eating, a tobacco-free lifestyle, and safety (unintentional injury and violence prevention). Subsequent versions will address school policies and programs related to the use of alcohol and other drugs and sexual health.

The School Health Index is available free of cost from the CDC through the following options:

- Download from the CDC website: http://www.cdc.gov/nccdphp/dash/SHI/index.htm
- Request by e-mail: healthyyouth@cdc.gov
- Request by phone: 888-231-6405
- Request by fax: 888-282-7681

1 Centers for Disease Control and Prevention. *School Health Index for Physical Activity, Healthy Eating and a Tobacco-Free Lifestyle: A Self-Assessment and Planning Guide*. Middle school/High school version. Atlanta, GA. 2002.

Exhibit 2-3 Logic Model of School-Based Asthma Program

Goal: Students with asthma are able to participate in school activities with no decrease in class time due to asthma

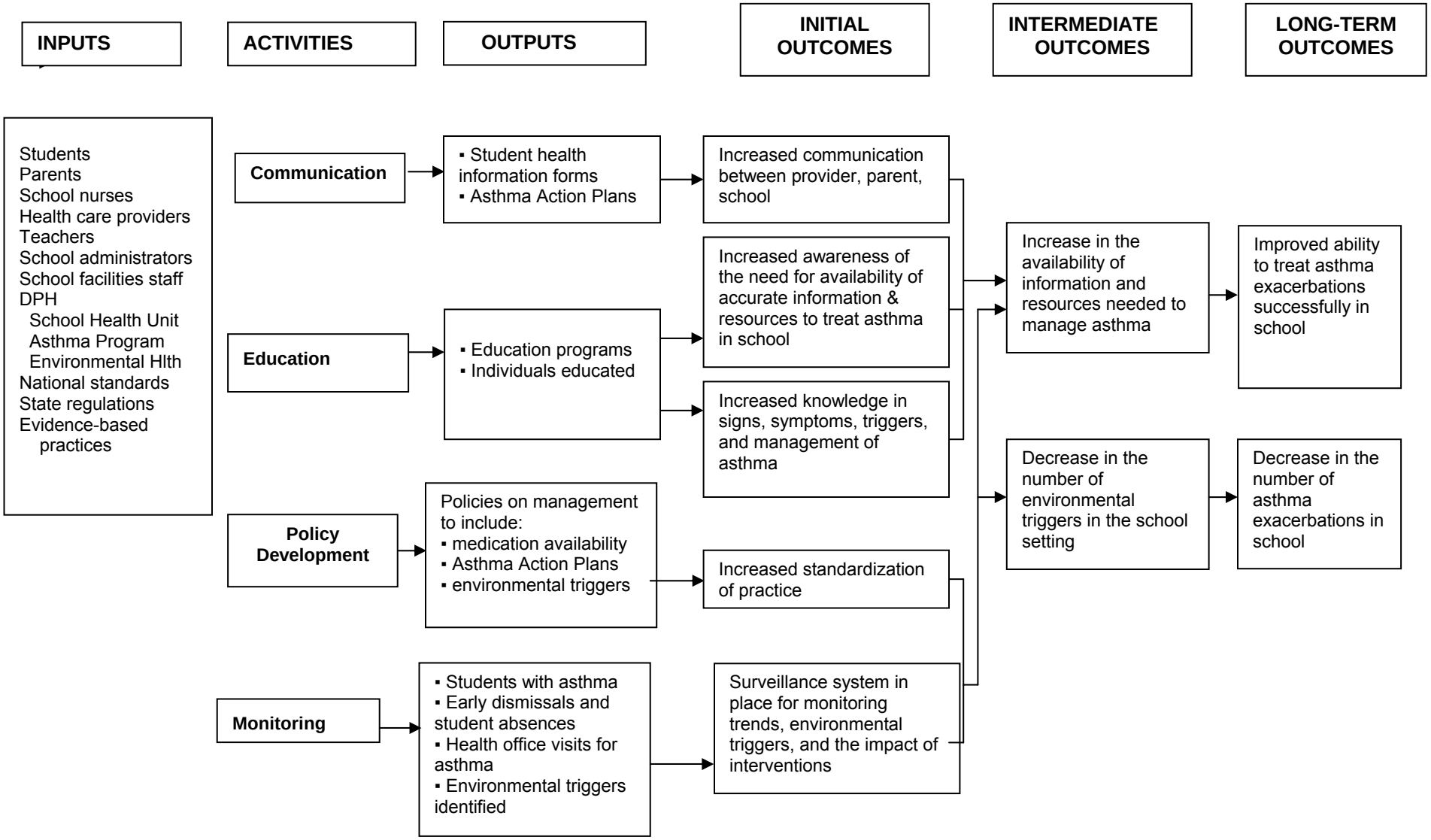


Exhibit 2-4 Sample Action Plan

Here is an example of an issue and its actions for the action plan form on the next few pages:

Issue/Problem	Component(s) of Comprehensive School Health Program Involved	Vision Statement*
1) "50% of students have no access to primary care."	Health Services	"100% of students will have access to quality health care within 2 years."

* A vision statement is a broad, general statement describing a desired change or goal.

Outcome Objectives

"Coordinate access to health services for all students"

Related Strategies
- Needs assessment
- Program development
- Outreach

Exhibit 2-5 Action Plan: Sample Form

The 4 most important issues/problems relating to comprehensive school health for students in our school that we feel a need to address now are:

Issue/Problem	Component(s) of Comprehensive School Health Program Involved	Vision Statement*
1)		
2)		
3)		
4)		

* A vision statement is a broad, general statement describing a desired change or goal.

5) The single most important issue/problem relating to comprehensive school health and human services in our school that we feel a need to address now is: (choose 1 from the above)

6) Describe the situation:

7) Our vision statement related to this issue/problem:

Exhibit 2-6 Identification and Referral Program (Student Assistance Program)

A Student Assistance Program identifies and helps students with health or behavior problems. It provides a structure, which promotes effective and efficient use of resources within the school and linkages with community-based health and human service agencies. It strives to prevent duplication of services and provide support to students with a range of problems.

Many schools have established student assistance or intervention programs that focus on alcohol and other drug issues. One out of four students is a child of alcoholic and/or drug-addicted parents. Studies indicate that support programs for these students can be quite effective and may be expanded to deal with other health issues such as suicide prevention, child and sexual abuse, eating disorders, and teen parenthood.

- The school agrees on policies, which address how it will identify and refer students.
- A school team is designated as the overall coordinating body, consisting of school administrative, counseling, nursing, teaching, and support staff, as well as community agencies where appropriate. A clinically trained coordinator serves as key contact and is typically either on staff or employed by contract with a community agency. Team members participate in specialized training on methods of designing and implementing programs.
- Appropriate case identification is key. In some cases, teachers easily recognize that student behavior has changed. They dress differently, may change class work habits, fall asleep in class, or are increasingly absent. School nurses may note students appearing in the health room or school-based health center on a regular basis. Students may seek out staff to talk frequently.
- Teachers, school nurses, parents, or students recommend and encourage students to seek help and contact the team coordinator. Some students may refer themselves for help. The team and/or coordinator receives the referral, consults with appropriate professionals, meets with the student and his or her parent (if appropriate), and refers the student to an appropriate program. Some schools provide support groups and individualized counseling by specially trained school personnel, or through linkages with community-based agencies that provide services onsite in the school building. *Student confidentiality is maintained in these groups and individual counseling sessions.*

Exhibit 2-7 Sample Position Description

SCHOOL NURSE LEADER

Scope of Responsibilities

The School Nurse Leader manages the total school health service program, providing nursing leadership within the school system. The Nurse Leader develops a needs assessment, plans and implements programs, and provides for continuous quality assurance and evaluation. She/he coordinates the clinical aspects of the comprehensive school health program, collaborating with other members of the health services and health education team, The Nurse Leader collaborates with community providers, other community organizations, and coalitions addressing health issues of children and adolescents. The School Nurse Leader should be freed from direct clinical care in order to fulfill her/his management and coordination responsibilities.

As a nurse registered through the Massachusetts Board of Registration in Nursing (BORN), the Nurse Leader must adhere to the Nurse Practice Act, pertinent regulations governing nursing practice and standards of care established by the professional organizations.

Supervision Received

The School Nurse Leader reports to the school administrator as defined in her/his position description, is a member of the school management team, and collaborates with the designated School Physician in developing and implementing the school health service program. Because of the multifaceted nature of the role, and its relationship to all school divisions, the School Nurse Leader may have reporting responsibilities to the Superintendent.

Supervision Given

The School Nurse Leader supervises and clinically evaluates all clinical nursing staff providing services in the school health program, as well as those unlicensed personnel (e.g., health aides) as designated in the organizational chart.

Required Qualifications

The School Nurse Leader must:

- have a valid license to practice as a Registered Nurse in Massachusetts;
- possess a minimum of a baccalaureate in nursing from an accredited nursing program (a masters degree in nursing or related field is preferred);
- be licensed as a school nurse by the Massachusetts Department of Education;
- have a minimum of 3 years of experience in school nursing or a related field, one of which is in a management position;
- maintain certification in cardio-pulmonary resuscitation, including AED training (trainer's certification for the Nurse Leader or her delegatee is recommended);
- assume responsibility for updating knowledge and skill in community health, management, and related fields as new information emerges; and
- complete ongoing continuing education programs pertinent to the evolving specialty area of school health and school nursing practice, as well as meet the continuing education requirements for licensure in Massachusetts.

Responsibilities

Needs Assessment

- using available demographic, health, school system, and community data, identifies health needs of the student population;
- collaborates with the school health advisory committee, local board of health, and other community agencies in developing the needs assessment; and
- develops surveys, questionnaires, and other tools for obtaining information; compiles data and presents it to decision makers (e.g., school health advisory committee, superintendent, school committee, mayor's office), as appropriate.

Planning

- assumes leadership in the establishment of a school health service advisory committee, consisting of representation from such groups as school administration, faculty, students, parents, and community providers based on needs assessment; develops program goals, objectives, and action steps; and
- coordinates planning with interdisciplinary colleagues in the comprehensive school health education and human services program and community agencies, as appropriate.

Implementation

- employs, orients, assigns, and supervises qualified personnel to implement the school health program;
- implements communication systems which promote participatory management, such as regularly scheduled meetings and e-mail systems;
- participates in the development of an interdisciplinary plan *for each building* to ensure that students in need of services are identified in a timely manner and appropriate intervention is initiated;
- develops and implements written policies and protocols (with staff assistance) for the clinical services and programs addressing health issues (e.g., immunizations, medication administration, services for children with special health care needs, schoolwide injury prevention programs) and special programs groups (e.g., overweight prevention, asthma management, eating disorders, smoking cessation, violence prevention);
- develops and implements documentation systems at both the individual student and programmatic level;
- develops and implements data systems to review trends in health status indicators, make adjustments in the health service program, and provide the required aggregate data for local and state agencies;
- provides clinical consultation to the health education staff, physical educators, and other administrative and teaching staff;
- participates in interdisciplinary teams, (e.g., crisis, child abuse, emergency planning) to ensure that integrated systems are in place which address the comprehensive health needs of the student population;
- serves as the school health spokesperson on community initiatives such as skin cancer prevention;
- carries out communicable disease prevention and infection control based on current guidelines for universal precautions, prevention of bloodborne pathogens exposure, and hazardous medical waste disposal;
- ensures that there is an emergency care plan in place, which is communicated to all staff and is closely coordinated with community emergency care protocols;
- participates in communitywide bioterrorism and emergency response planning with other members of the multidisciplinary team; provides leadership in the school for bioterrorism preparedness and is linked to the Health and Homeland Alert Network (HHAN);
- collaborates with other school administrators and teachers to promote a physically and psychologically healthy school environment;
- promotes positive linkages and referral mechanisms to community providers for a range of services dealing with child and adolescent health;
- seeks opportunities to interpret the health needs of school-age children and adolescents, the goals of the health service program, & the importance of health education to administrators, school committee members, faculty, families, the general community, local and state decision makers, through special reports, the media, health fairs and other special events;

- prepares and administers the health services budget; seeks opportunities to apply for grants and other external sources of funding for the school health service program;
- implements a school health service data system, capable of tracking trends, activities and outcomes;
- uses the media (local cable stations, newspapers, and bulletin) and school health service website to share health promotion information, as well as to interpret the role of the school health service program;
- presents written and oral reports regarding the school health program to the superintendent, school committee, and other stakeholders; and
- seizes opportunities to present the challenges and opportunities of school health to other members of the health care delivery system.

Evaluation

- compiles statistical reports as required by the school system and by state agencies;
- completes ongoing continuous quality improvement programs and adjusts school nursing practice based on findings;
- evaluates nursing and other health service staff;
- actively participates in the accreditation process of the school;
- implements a client satisfaction feedback system;
- reviews changing trends in health needs and the outcomes of programs to determine need for revision of goals and objectives; and
- develops partnerships with local colleges and universities to (a) provide student practice in the school health programs, (b) obtain assistance with continuing education, (c) develop nursing research aimed at enhancing the body of evidence-based practice; and (d) publish in professional journals when possible.

Staff Development

- implements an ongoing continuing education program for staff to facilitate their meeting of the requirements for licensure through the Massachusetts Department of Education and maintain and expand clinical skills;
- encourages staff to participate in pertinent conferences and workshops addressing a range of school health issues; and
- provides ongoing formal and informal feedback to staff about their progress in achieving the goals of the program, encouraging their continued educational and professional development.

Exhibit 2-8 Sample Position Description

SCHOOL NURSE

Recommendation: The Nurse Leader and school nurse should review and revise the position description at a minimum of every 2 years based on changing student health needs.

Scope of Responsibilities

The school nurse is responsible for developing, implementing, and managing a school health program for a school population as defined by the school district. Responsibilities include program management, nursing services, collaboration, health education, community health and emergency planning, and professional practice.

As a nurse registered through the Massachusetts Board of Registration in Nursing (BORN), the Nurse Leader must adhere to the Nurse Practice Act, pertinent regulations governing nursing practice and standards of care established by the professional organizations.

Supervision Received

The school nurse reports to the School Nurse Leader and to the chief administrator of the school building. In some cases, the school nurse reports to the board of health administrator or nursing supervisor. School physicians are also available for consultation.

Supervision Given

The school nurse supervises the health aide/technician and others as defined by the position description (e.g., licensed practical nurse, health services secretary).

Required Qualifications:

Be licensed as a school nurse by the Massachusetts Department of Education.

Initial License

- valid license to practice as a Registered Nurse in Massachusetts;
- a bachelor's or master's degree in nursing;
- a minimum of 2 full years of employment as a Registered Nurse in a child health, community health, or other relevant clinical nursing setting;
- completion of an orientation program based on the requirements for delivery of school health services as defined by the Department of Public Health; and
- passing score on the Communication and Literacy Skills test.

Professional License

- possession of an Initial license;
- three years of employment as a school nurse; and
- completion of one of the following:

  a) Achievement and maintenance of certification or licensure by a nationally recognized professional nursing association as a school nurse, community health nurse, or a pediatric/family/school nurse practitioner.

  b) A master's degree program that may include credits earned in a master's degree program for the Initial License in community health, health education, nursing, or public health. Achievement of certification by a nationally recognized professional nursing association as a school nurse, community health nurse, or a pediatric/family/school nurse practitioner.

Responsibilities

Program Management establishes and manages a comprehensive school health program consistent with the Massachusetts guidelines, regulations and statutes governing nursing and school health, and local school district policy:

- participates in the school health advisory committee that is appointed by the school committee or designee;

- consults with the Nurse Leader, school physician, school administrators, and others to establish, review and revise policies, protocols, and specific programs for comprehensive school health education and services;
- works with others to develop a needs assessment and data collection protocols;
- ensures the orientation, training, supervision, and evaluation of paraprofessionals as needed to comply with the Nurse Practice Act and other relevant statutes and regulations;
- organizes and implements state-mandated programs such as immunization surveillance and screening programs;
- promotes positive safety practices both within and outside of school buildings, and ensures that the school has an emergency plan that is communicated to personnel and students;
- participates in the community emergency planning, including bioterrorism planning as appropriate;
- maintains comprehensive school health records;
- collaborates with school administrators and personnel in assessing and improving the social and emotional climate of students and faculty; involves them in maintaining a healthful school environment;
- uses population-based data to plan and evaluate the school health program; completes continuous quality improvement programs as needed to improve practice and outcomes;
- prepares regular written reports for school officials, the school committee, and DPH and other agencies describing the services provided by the program, numbers of students served, and so forth; interprets school health service needs and the role of the school nurse to the school and community;
- implements communicable disease prevention and infection control based on current guidelines for universal precautions, prevention of bloodborne pathogens exposure, and hazardous medical waste disposal; coordinates activities with the local board of health.

Nursing Services

Using the nursing process, collaborates with the parent/guardian and student, where appropriate, to develop and implement an individualized health care plan for the student:

- collects information about the health and developmental status of the student, his/her family, and significant others, in a systematic and continuous manner including health and social histories, screening results, physical assessment, emotional status, performance level and health goals; makes home visits as needed;
- develops a nursing diagnosis and care plan with specific goals and interventions delineating school nursing actions specific to student needs and coordinated with the efforts of other providers and school personnel; implements plans in a manner aimed at improving health and educational status;
- provides medically prescribed interventions, including medication administration (based on state regulations), and provides care to ill children on a daily basis;
- responds to frequently encountered health issues, providing counseling and crisis intervention when required (e.g., adolescent pregnancy, substance abuse, death of a family member, suicide); responds to child neglect or abuse issues (as required by Massachusetts statute);
- assesses student response to nursing actions in order to revise the database, nursing diagnoses, and nursing care plan and to determine the progress made toward goal achievement; documents pertinent information in student records or confidential nursing notes;
- provides first aid to injured children and staff; provides everyday care of acutely ill children; manages children with communicable disease;
- administers CPR; and
- responds promptly to emergencies.

Collaboration

Collaborates with other professionals, team members and community providers in assessing, planning, implementing, and evaluating programs and other school health activities, so as to maximize and coordinate services and prevent duplication:

- establishes a process to identify students at risk for physical and psychosocial problems, communicates health needs to other school personnel as appropriate, and establishes a referral system using both internal and community resources;
- participates as a team member; with parental consent when indicated, shares information with other team members about children with special health care problems which affect their safety, learning and growth; acts as an advocate for the student and family when appropriate; attends Special

Education Team meetings;
- includes the student and parent in the team conference whenever possible and appropriate;
- identifies health-related needs for inclusion in the individual education plan;
- serves as a member of pertinent committees and teams (e.g., crisis intervention team, support groups for grieving students);
- when the school is planning or implementing a school-based health center, participates on both the planning committee and the SBHC advisory committee; and
- serves as the school representative on appropriate community committees (e.g., those addressing overweight, teen pregnancies, violence prevention).

Health Education
Assists students, families, and groups to achieve optimal levels of wellness through health education and promotion:
- serves as a member of the curriculum committee for health education;
- identifies need for health education; teaches the basic principles of health promotion and disease prevention to students and staff, using principles of learning and appropriate teaching methods;
- assumes responsibilities for in-service programs for school personnel for first aid, emergency care protocols (including CPR and the use of the automatic external defibrillator), and current health issues; and
- acts as a resource in health education to school personnel, students, and families.

Community Health Planning
Participates with other members of the community to assess, plan, implement, and evaluate school health services and community services which include the broad continuum of primary, secondary and tertiary prevention:
- uses population-based data;
- understands and applies core public health functions of assessment, policy development, and assurance;
- uses community resources for referral of students with unmet health needs, including the need for a primary care provider; participates in the planning and implementation of new services;
- establishes working relationships with community providers and organizations (e.g., hospitals, primary care providers, boards of health, civic associations) and communicates the role and scope of school health to other community providers and organizations; and
- uses the media (newspapers, cable television, etc.) to convey important health information and advocate for the role of the school health program in promoting the health of the student population.

Professional Practice
Applies appropriate nursing theory as the basis for decision making in the school setting while expanding knowledge and skills in response to the student health needs and participating in research:
- demonstrates current knowledge in such areas as (a) professional issues in school nursing, (b) school and community health, (c) communicable disease control, (d) growth and development, (e) health assessment, (f) special health conditions, both chronic and acute, (g) injury prevention and emergency care, including bioterrorism planning, (h) health counseling, health education and promotion, and (i) current adolescent issues;
- assumes responsibility for continuing own education; obtains expert consultation, supervision, and peer review as needed;
- collaborates with local schools of nursing to provide student practice in community health, as well as to obtain nursing education resources; and
- forms partnerships with colleges and universities to identify topics for study and research in order to expand the scope of evidence-based school health and school nursing practice.

Adapted and updated from American Nurses' Association *Standards of School Nursing Practice*, 2001.

Exhibit 2-9

TEMPLATE FOR MASSACHUSETTS SCHOOL PHYSICIAN/MEDICAL CONSULTANT ROLE

Introduction: The school physician/medical consultant role is continuing to evolve in Massachusetts. Recently, in response to questions as to what constitutes the role, the Massachusetts School Physician Committee, collaborating with the Massachusetts Department of Public Health School Health staff, drafted the following template containing a composite list of certain responsibilities included in various communities throughout the Commonwealth. The template is intended to offer guidance to the school administrator and physician as they define the role for their specific school district and student population.

The school physician functions as part of a health team addressing the health issues of the students in each school district. In this unique position the school physician has opportunities to affect the health of large numbers of children and adolescents in many ways. Coordinated, comprehensive school health programs, as defined by the United States Centers for Disease Control and Prevention, include the following components: health education, health services, social and physical environment, physical education, guidance and support services, food service, school and work-site health promotion, and integrated school and work-site health promotion. Depending on the school district, the school physician may play a role in any or all of these components. In addition, the school physician may act as a liaison to community providers. As the health care system undergoes dramatic restructuring, the school (the place where children spend many hours each day) offers unique opportunities for the school physician to join the school nurse in developing coordination and communication systems with local primary care providers, thus ensuring continuity of care.

While the school physician in most school districts will continue to work most closely with the school nurse, who is responsible for the daily management of the health service program, additional health team members may include, but not be limited to, the health coordinator/educator, social worker and other mental health professionals, food service directors, athletic directors, and so forth. The role of the school physician will continue to expand in different ways in different school districts. The template, which will continue to grow and change, offers some concrete choices based on the needs of the specific school district, its student population, and the community, which it serves.

The depth and breadth of the physician role can be categorized into 9 different functions: administration and planning, liaison to community physicians, direct service, clinical consultation, policy consultation, health education, public relations, advocacy, and systems development consultation.

Administration and Planning[2]: In collaboration with the school nursing leader and other staff who administer components of the comprehensive school health program, the school physician:

- supports the school nursing leader and school nursing staff in planning and implementing the school health service program;
- assists in administering the program cooperatively with the school nursing leader, administration and local school committee;
- meets on a regular basis[3] with the school nursing leader (and school nurses as appropriate) to review, evaluate and revise the program as needed;
- participates as an active member of the school health advisory council/committee, which meets quarterly, assists in emergency care planning for the school district; and
- participates in professional development relevant to school health.

In addition, the school physician may:

- assist in writing applications for health-related grants;
- assist in employing, supervising and evaluating school health personnel, as appropriate.

[2] This section adapted from the Connecticut document by Martin Sklaire, M.D., “Suggested Qualifications and Role of the School Medical Advisor.

[3] Meetings should occur, at a minimum, on a monthly basis.

Liaison to Community Physicians: Because the school health service program emphasizes health promotion and is an important part of the health care delivery system serving children in the community, the school physician:

- interprets the importance of the school's health education program for children, adolescents, and their families;
- interprets the role of the school health program in the continuum of health services for children, (e.g., medication management of ADHD, asthma, diabetes);
- interprets federal and state school health regulations to community primary care providers; (These regulations include but are not limited to the regulations governing physical examinations, immunizations, medication administration in the schools, and the rights of the disabled students.)
- consults with local providers on pertinent medical issues of individual students as they affect the child's performance in the educational environment (e.g., a child with a complex medical need);
- collaborates with local providers to prevent duplication of services between the school health program and the primary care providers (e.g., annual physical examinations for students participating in competitive sports, vision and hearing screening); and
- promotes communication and exchange of pertinent medical information (with parental consent) between the school health program and the primary care providers.

Direct Service: Every child and adolescent in Massachusetts should have a designated primary care provider. As more primary care providers are identified, the role of the school physician is moving from a direct service provider (e.g., performing physical examinations) to that of a medical consultant to the school and particularly to the school nurse. Based on the change in emphasis, the school physician:

- provides physical examinations (entry, every 3–4 years thereafter, annually prior to participation in competitive sports, and ages 14–16 prior to obtaining a work permit as per M.G.L. c.71, s.57, and 105 CMR 200.200) for only those students who lack a primary care provider; and
- may assume the role of sports team physician or assumes the responsibility for identifying a physician for coverage of school-sponsored sports events.

Clinical Consultation: As the role changes and the health needs of the students and staff become more complex, the school physician:

- consults on a regular basis with the school nurse; and
- consults with school administrators and other school personnel, as needed.

Examples of issues where school physician consultation may be useful include but are not limited to:

- ✓ students with special health care needs;
- ✓ students with individualized educational plans (IEP); individual health care plans (IHCP), and Section 504 plans as needed;
- ✓ immunizations or implementation of state mandated immunization regulations;
- ✓ infection and outbreak control (e.g., pertussis, meningitis, pediculosis);
- ✓ vision, hearing, and postural screening;
- ✓ staff health, wellness, and disability issues;
- ✓ mental health issues;
- ✓ classroom management of the child with physical or emotional issues (as requested by the school nurse, teacher, or parent);
- ✓ medical transportation issues for children with special health care needs;
- ✓ school environmental issues as they arise (e.g., air quality, building safety, playground safety, "sick building syndrome");
- ✓ school sports medicine program;
- ✓ medical orders for emergency medications (e.g., over-the-counter medications or epinephrine for children with undiagnosed life-threatening allergic conditions, immunization clinics);
- ✓ nutrition issues as they relate to such areas as the food service, eating disorders, and so forth; and
- ✓ health room facilities and equipment.

Policy Consultation: The school health program offers many opportunities to promote the health of large populations of children. To do this effectively, the school must have effective evidence-based policies. In the school physician's policy consultation role, he/she:

- participates in the school health advisory council/committee;
- collaborates with the school nurse, provides consultation on policies pertaining to the health and safety of school students and staff.

Policies may include but are not limited to:

- ✓ crisis intervention (depression, suicide, and violence);
- ✓ emergency and disaster planning and preparedness (collaborating with local emergency medical services);
- ✓ immunization policies;
- ✓ substance use/abuse, including tobacco;
- ✓ medical transportation;
- ✓ healthy school environment (both physical and social);
- ✓ nutrition issues including food services;
- ✓ infection control and universal precautions;
- ✓ attendance, including exclusion for illness;
- ✓ medication administration, including nonprescription medications;
- ✓ management of children with chronic illnesses (e.g., asthma, diabetes); and
- ✓ child abuse/neglect.

Health Education: The school offers many opportunities to encourage students to obtain information about health and learn skills, which promote healthy behaviors. The school physician:

- provides consultation, as needed, on health education curricula in grades PreK–12;
- presents classroom lectures on relevant topics;
- provides education to staff and athletes on issues relating to sports medicine and injury prevention;
- provides medical information and health education for parents as appropriate; and
- participates in school-sponsored health fairs.

Public Relations: The school physician:

- interprets health issues to the community (e.g., contributes articles to the local newspaper, provides health education); and
- may represent the school on health issues in the media (as requested by school administration) when a crisis occurs in the school or regarding the school-age population.

Advocacy: As the comprehensive school health programs continue to grow and change to meet the needs of the student populations in modern society, there is an increasing demand for advocacy from the medical profession. As a respected medical professional in the community, the school physician:

- supports comprehensive health education, grades kindergarten through 12;
- advocates for additional resources as needed;
- testifies at public hearings regarding school health issues (e.g., immunizations); and
- is in contact with policy makers (local, state, and national) about issues pertaining to the health of children and adolescents and the role of the comprehensive school health program.

Systems Development Consultation: As the health care delivery system caring for children continues to incorporate the school health program as an active partner, some school districts are exploring organizational structures and mechanisms to enhance access and efficiency by providing onsite services and/or arrangements with local agencies to provide services. In these schools, the school physician, in collaboration with the school nursing leader, administrators, and other appropriate staff, may:

- provide consultation on the development of a system of mental/behavioral health services delivered in the school and linked to local providers;
- identify new programs for integrating and coordinating services with both internal and external providers;
- establish an ongoing system to identify students at risk for health or education issues;
- establish standards and quality assurance programs for the provision of services by external providers in the school;

- identify the need for a school-based health center, if access to health care is an issue in the community;
- play an active role in coordinating services and developing collaborative arrangements with other municipal agencies having a role in school health (e.g., the local health department); and
- provide consultation on implementing school health data systems and data analysis, as well as information tracking systems (e.g., the Massachusetts Immunization Information System).

Minimum Qualifications

- a license to practice medicine in the Commonwealth of Massachusetts (M.G.L. c.71, s.53b); and
- knowledgeable about the health needs of children and adolescents.

Additional Preferred Qualifications: The school physician/medical consultant should, in addition, be board certified or board eligible in pediatrics or family practice. When the primary student population includes adolescents, the school physician/medical consultant should have additional education in the subspecialty of adolescent medicine.

Exhibit 2-10 Sample Position Description

SCHOOL HEALTH AIDE/ASSISTANT

Scope of Responsibilities

The school health aide assists in the school health program as determined by the school nurse (who is a registered nurse). Therefore the scope of responsibilities will vary according to school health program needs, the capabilities of the school health aide, and the availability of the school nurse to provide supervision. When the school nurse determines that certain tasks may be delegated to the school health aide, such delegation shall be under the supervision of the school nurse and consistent with the Board of Registration in Nursing regulations (244 CMR 3.05). (See also Chapter 6 for Regulations Governing the Administration of Prescription Medications in Public and Private Schools.)

Recommended Minimum Qualifications

- possess a high-school diploma or its equivalent;
- demonstrate sound judgment;
- be able to read and write English;
- respect and protect the confidentiality of students, staff, families, and others;
- be willing to accept nursing supervision;
- complete training in both cardio-pulmonary resuscitation and a basic first aid program, and maintain the necessary certifications;
- complete the Department of Public Health training program for vision and hearing screening; and
- demonstrate clerical proficiency.

Supervision Received

The Health Aide receives supervision from the school nurse appointed under the provisions of M.G.L. c.71, s.53.

Responsibilities

To be assigned by the school nurse, these responsibilities may include but are not limited to:

Assisting in Health Care Activities

- performs vision and hearing screening and related tasks (e.g., recording results, sending letters to parents/guardians);
- weighs and measures students; completes graphs of heights and weights;
- assists with preparation for health activities (e.g., physical examination of students, immunizations, Mantoux testing);
- administers medications as delegated by the school nurse, after having received the required training and according to the Regulations Governing the Administration of Prescription Medications in Public and Private Schools (105 CMR 210.00). (This is applicable only in school districts registered with the Department of Public Health for delegation of prescription medication administration.);
- provides first aid care to students with minor injuries;
- reports all illnesses/injuries to the school nurse for professional review, care and/or follow-up; and
- contacts parents of ill or injured children.

Performing Clerical Functions

- records health information (e.g., results of various screening tests, immunization information, BMIs);
- maintains an up-to-date master file (e.g., student health emergency information);
- sends notices to parents, tabulates returns, and follows up on nonrespondents;
- provides ongoing communication to the school nurse regarding the status of health notices;
- distributes information (e.g., forms) to teachers and administrative staff; and
- develops computer skills as needed.

Exhibit 2-11 Sample Position Description

SCHOOL NURSE PRACTITIONER
(Family Nurse Practitioner, Pediatric Nurse Practitioner)

Scope of Responsibilities
The Nurse Practitioner's responsibilities vary according to the specific school system. In some school systems, the Nurse Practitioner will be the primary care provider for the students registered in the school-based health center. In other systems where there is no school-based health center, she/he practices in an expanded role for the general student population.

Supervision Received
The Nurse Practitioner receives clinical supervision from a designated physician. When functioning as part of the school health service team, she/he receives administrative supervision from the manager as defined in the specific position description.

Supervision Given
The Nurse Practitioner functioning as the primary care provider within a school-based health center gives supervision to those licensed and unlicensed persons functioning within the SBHC and as defined by her/his position description. If the Nurse Practitioner functions within the general school health program, she/he likewise is responsible for those licensed and unlicensed personnel as defined by the position description.

Recommended Qualifications
- must have a valid license to practice as a Registered Nurse **in the Expanded Role** in Massachusetts (required); see M.G.L. c.112 — the Nurse Practice Act — for a description of this expanded role;
- possess a minimum of a baccalaureate in nursing from an accredited nursing program; (A Master's degree in nursing is preferred); possess/maintain certification as a School/Pediatric or Family Nurse Practitioner;
- have a minimum of 3 years experience in school nursing or a related field;
- maintain certification in cardio-pulmonary resuscitation, including AEDs, and first aid;
- have an identified physician who provides consultation;
- assume responsibility for updating knowledge and skill in community health, management and related fields as new information emerges; and
- complete ongoing continuing education programs pertinent to the evolving specialty area of school health and school nursing practice, as well as meet the continuing education requirements for licensure in the expanded role in Massachusetts.

Responsibilities
The Nurse Practitioner practicing within the school setting is responsible for many of those areas listed in the position description for the school nurse. In addition, her/his role includes:
- consulting and collaborating with a pediatrician, medical specialist in adolescent medicine, or other related field in addressing medical issues presented by the students and in developing practice guidelines;
- providing primary care to students;
- managing the health care of students with chronic and acute conditions while providing intervention and/or referral as necessary;
- providing physical examinations to identified students at appropriate intervals (prior to participation in sports, prior to obtaining work permits, etc.).
- establishing close communication and coordination systems with the school health service program, specifically the school nurse;
- consulting with teachers on health issues and provision of clinical in-service education as needed;
- participating in schoolwide programs addressing health (e.g., health fairs, overweight prevention, asthma management, tobacco cessation);
- participating in communitywide initiatives such planning for a bioterrorism event; and
- maintains data systems and provide ongoing data reports as required by the school, the parent organization, and the state.

Exhibit 2-12 Sample Position Description

HEALTH EDUCATION AND HUMAN SERVICES COORDINATOR

Please note: this position description applies to the Nurse Leader who is also the HEHS Coordinator.

Scope of Responsibilities

In addition to the position description of the Nurse Leader, the HEHS Coordinator (in the dual role) is responsible for planning, implementing, and evaluating the comprehensive health education and human services program in a school district.

Supervision Given

The Health Education and Human Services Coordinator reports to the Assistant Superintendent as defined in her or his position description.

Recommended Qualifications

- a Master's degree in education and have a valid license to practice as a Registered Nurse in Massachusetts or have an R.N. with Master's degree in education, public/community health, or nursing;
- strong managerial skills;
- experience with coordination of health education programs;
- experience with supervision and administration;
- highly organized, efficient, and thorough;
- ability to work independently to achieve goals and responsibilities;
- skilled and experienced in group facilitation and planning with diverse populations; and
- demonstrated ability to work effectively with school and agency personnel.

Responsibilities

- administer health-related grants and assist with preparation of health-related grant proposals;
- supervise the implementation of the early childhood through grade 12 health education curriculum;
- facilitate an interdisciplinary team approach to identify and respond effectively to student health issues;
- expand coordination of available health and human services within the school district and the community;
- work with consultants and staff to (a) research and investigate model programs; (b) assess student health needs; (c) evaluate comprehensive school health education and human services; and (d) develop a long-range plan with the goal of significantly reducing participation in high risk behaviors by staff, students, and families, and significantly increasing health promoting behaviors;
- participate in all surveys, studies, and evaluations on comprehensive school health education and services requested by the DPH and DOE;
- participate in community network activities and develop links with appropriate health care providers;
- participate, with appropriate clinical consultation, in the formation and revision of school health policies and protocols;
- prepare and administer school health budget as appropriate;
- oversee comprehensive school health program data collection as appropriate; and
- actively participate in School Health Advisory Committee.

Exhibit 2-13 Sample Agreement

FORMAL WRITTEN AGREEMENT WITH THE LOCAL BOARD OF HEALTH

_____ School Department agrees to contract with

_____ Board of Health to provide the following:

- all required school health services or selected school health and human services
- mandated immunizations
- mandated physical examinations and screenings for the following (check applicable examinations and screenings and fill in grades):
  - ❒ physical examinations, grades: _____
  - ❒ vision screening, grades: _____
  - ❒ hearing screening, grades: _____
  - ❒ scoliosis/kiphosis, grades: _____
- maintenance of school records
- care of children with special health care needs
- health education
- emergency care planning and provision
- case finding, referral, and follow-up
- health counseling
- tuberculosis screening
- communicable disease control, including prevention, case finding, and follow-up

The _____ School Department will provide the following services (if applicable):

Staffing

The _____ Board of Health will provide the following staff (FTE's):

- ❒ Registered Nurses/Public Health Nurses/School Nurses
- ❒ School Physician
- ❒ School Health Assistants or Aides
- ❒ Dental Hygienist
- ❒ Vision and Hearing Screeners
- ❒ Clerical Assistants
- ❒ Other (Specify):

Supervision

Supervision will be provided by:

Equipment and Space
The _____ Board of Health will provide:

The _____ School Department will provide:

Maintenance of records and policies regarding confidentiality (include responsibilities for computerization, technology assistance, and sharing of demographic data):

Mutual Responsibilities for Coordination and Cooperation

- To evaluate the program, plan for the future, and address any problems that have arisen, regular meetings (2-4 times per year) that include leading members from both parties will be held.
- Each board of health/school department will agree to appoint one person as liaison:

School Department liaison: _____

Board of Health liaison: _____

Terms of Agreement: (includes monthly and/or annual reporting of services provided and fees, if any)

Termination of Agreement
The following notice is required prior to termination of the agreement by either party:

Effective Date of Agreement: _____

Renewal Date: _____

_____ _____
Signature (Agency/Board of Health) ***Signature*** (School Department)

Exhibit 2-14 Sample Content Outline

POLICIES AND PROTOCOLS MANUAL

1. Purpose of Manual (including plans for review and revision)
2. Philosophy of the School Health Program
3. Program goals
4. Laws relevant to the School Health Program
5. Organizational Chart
   a.) In-school coordination and how it relates to the community
   b.) School Department (and Health Department)
   c.) School Health Services
6. Memorandum of Agreement or contract, if Board of Health provides school health services
7. Memorandum of agreement if the public school district provides school health services to the community nonpublic schools
8. Memorandum of agreement identifying the role of the public school in the agencies using the school facility (e.g., collaboratives, child care programs, before- and after-school programs)
9. Job Descriptions
   a.) Nurse Leader
   b.) School Nurse and/or School Nurse Practitioner
   c.) School Physician
   d.) School Health Assistant
   e.) Mental health providers
   f.) Nutritionist
   g.) Other clinical personnel (e.g., speech therapist, physical therapist)
   h.) Vision/Hearing Technician
10. Personnel policies as they relate to health, such as emergency contact information, immunization status and special health conditions
11. Professional Development Policies as they pertain to DOE licensure and currency of clinical and public health practice
12. Policies for health assessment and follow-up of students
    a.) Preschool
    b.) School entry, re-entry, and transfer
    c.) Physical examinations, including prior to participation in interscholastic sports and obtaining work permits
    d.) Screenings (e.g., vision, hearing, postural, growth (height/weight/BMI)).
13. Policies for Prevention and Control of Communicable Diseases
    a.) Handwashing as a control measure
    b.) Universal Precautions
    c.) Immunizations
    d.) Reportable infectious diseases, including surveillance and outbreak response measures
    e.) Policies pertaining to specific conditions (e.g., pediculosis, scabies, ringworm)
    f.) Disposal of medical waste
14. Policies for Provision of Emergency Care (individual and multicasualty)
15. Policies for the Care of a Sick Child in a Non-emergency Situation
16. Attendance Policies (including dismissal for health reasons)
    a.) Release or exclusion of student
    b.) Release of students to authorized persons or emergency transport personnel

17. Administration of Medication Policies (see Chapter 6)

18. Special Education Protocols: IEPs, 504 Plans, IHCPs

19. Policies for Management of Students with Chronic Illnesses
    - a.) Asthma
    - b.) Diabetes
    - c.) Seizure disorders
    - d.) AIDS
    - e.) ADHD/ADD
    - f.) Life-threatening allergies
    - g.) Other, as unique to the school district

20. Policies for Response to Frequently Encountered Health Problems
    - a.) Child abuse and neglect (including reporting)
    - b.) Substance use and abuse
    - c.) Injuries (orthopedic, etc.)
    - d.) Violence (including bullying, date rape, homicide, suicide)
    - e.) Pregnant students and school-age parents
    - f.) Eating disorders and other nutritional concerns
    - g.) Behavioral Health problems
        - 1.) Crisis intervention (e.g., death of a member of the school community)
        - 2.) Suicide prevention

21. Policy for Adherence to a Do Not Resuscitate/Comfort Care Only Order

22. Health Counseling Policies (e.g., pregnant or parenting teens)

23. Physical Education (e.g., requirement for medical recommendation for modified gym)

24. Athletic Participation (e.g., return after injury)

25. Policies for Maintenance of Student Health Records, including transfer and destruction

26. Policies for School Nurse-Teacher Conferences
    - a.) Annual scheduled conferences for the total school population
    - b.) Individual nurse-teacher-parent-student health conferences

27. Policies regarding health services for staff; staff wellness

28. Policies for Coordination of School Health Services with Community Resources (e.g., local board of health, health centers, primary care providers)

29. Health Education Policies

30. Food Services, such as nutritious food choices, use of vending machines and plans for students with life-threatening food allergies

31. Responsibilities for a Safe, Healthy School Environment
    - a.) Injury prevention
    - b.) Tobacco-free schools
    - c.) Indoor air quality

32. Health Suite
    - a.) Protocol for use by students, faculty, and visitors
    - b.) Health education materials
    - c.) Equipment
    - d.) Emergency supplies, including availability of EpiPens®, AEDs
    - e.) Information technology (e.g., computers, dedicated facsimile machine)

33. Health Services Budget

34. List of Community Resources

Exhibit 2-15

GENERAL LAWS OF MASSACHUSETTS
PART I.
ADMINISTRATION OF THE GOVERNMENT

TITLE XVI.
PUBLIC HEALTH

CHAPTER 112. REGISTRATION OF CERTAIN PROFESSIONS AND OCCUPATIONS

REGISTRATION OF PHYSICIANS AND SURGEONS

Chapter 112: Section 12V Exemption of certain trained individuals rendering emergency cardiopulmonary resuscitation from civil liability

Section 12V. Any person who is trained according to the standards and guidelines of the American Heart Association or the American National Red Cross in cardiopulmonary resuscitation or the use of semi-automatic or automatic external defibrillators or any person who has successfully met the training requirements of a course in basic cardiac life support, conducted according to the standards established by the American Heart Association, who in good faith and without compensation renders emergency cardiopulmonary resuscitation or defibrillation in accordance with his training, other than in the course of his regular professional or business activity, to any person who apparently requires cardiopulmonary resuscitation or defibrillation, shall not be liable for acts or omissions, other than gross negligence or willful or wanton misconduct, resulting from the rendering of such emergency cardiopulmonary resuscitation or defibrillation.

Exhibit 2-16 Sample Policy — Procedures for Automated External Defibrillator (AED)
Newton Public Schools
School-Based Public Access Defibrillation Program
POLICIES AND PROCEDURES
(PROCEDURES EXCERPT ONLY)

IV. PROCEDURES

A. Location, Mobility of Device(s):
The AED devices shall be at the sites and specific locations listed on Attachment IV.A. Each AED will be the responsibility of the Site Leader or a designee (indicated in writing), or his/her designated back up.

B. Maintenance:
See the AED manufacturer's Operating Instructions Manual for detailed maintenance information and instructions. The Site Leader or designee responsible for an AED will perform and document as follows:

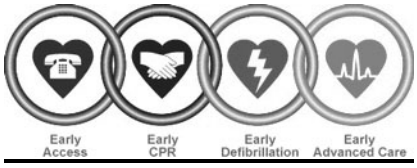
- Daily and after each use (see Attachment IV.B.1)
  - Check readiness display for 'OK' and confirm no battery indicator or service indicator displayed
  - Visually inspect AED: proper location, clean, no tampering
  - Initial daily log (Attachment IV.B.1)

- Monthly and after each use (see Attachment IV.B.2)
  - Inspect AED, case, connectors, battery according to Operator's Checklist
  - Check station against AED Station Inventory, and restock as needed
  - Enter date, print and sign name on monthly log (Attachment IV.B.2)

- After each use
  - Inspect exterior for dirt or contamination and clean if needed (see Operating Instructions)

Whenever results of inspection require action (per manufacturer's Operating Instructions Manual or these procedures) and after each dispatch or use (anytime defibrillator pads are attached to a patient), document in the AED General Log (Attachment IV.B.3). If the unit needs immediate service or supplies, remove from service and notify the Program Coordinator immediately. If the unit is still operational but requires service or supplies will expire soon, Site Leader should notify the Program Coordinator promptly.

C. Use of AED:



1. Early access to EMS (911)

- *Assess responsiveness – tap victim and shout "Are you OK?"*
- If unresponsive, activate emergency response system
  - If alone, activate EMS by calling 911∗ and get AED*
  - If not alone, stay with victim and assign someone to activate EMS by calling 911*
  - get AED*

∗ See site-specific response plan for procedures to activate EMS and retrieve AED.

When activating 911, provide: location, telephone number, nature of emergency, what aid is being provided (ex. “we’re using an AED”).

2. Early CPR

- Check ABC’s (Airway, Breathing, Circulation)
- If no breathing, provide rescue breathing
- If no circulation
  - if AED is immediately available, attempt early defibrillation
  - if AED is not immediately available, perform CPR and prepare to attempt defibrillation when AED arrives

3. Early defibrillation

NOTE: • DO NOT USE AED ON VICTIM <8 YEARS OLD OR <55 LBS/25 KGS
• REMOVE VICTIM FROM CONTACT WITH WATER AND DRY CHEST

- Power on AED
- Attach AED electrodes to victim’s bare chest
- Allow AED to analyze (do not touch victim)
  - Clear victim during analysis (“I’m clear, you’re clear, everyone’s clear”)
- If advised to shock (do not touch victim)
  - Clear victim (“I’m clear, you’re clear, everyone’s clear”)
  - Press shock button
- Continue to follow AED prompts until EMS arrives

4. Early advanced care

- EMS takes charge of victim upon arrival
- Provide victim information to EMS: name, age, known medical problems, details of incident, victim condition and aid provided (incl. number of shocks administered)
- Electrodes remain in place on victim (detached from device); school’s AED remains with representative of school who returns device to Site Leader as soon as possible

D. Post-incident:

Any time that defibrillator pads are attached to a patient and when otherwise appropriate:

- Targeted responder notifies Site Leader. Site Leader notifies Director of Clinical Services, who notifies Medical Director and Program Coordinator.
- AED responder must complete the event summary form (Attachment IV.D.) and return to Site Leader or provide the same information to Site Leader (who completes the form). Site Leader forwards copy to Program Coordinator, who retains one copy and forwards a copy to Medical Director. Site Leader documents additional information relating to incident as appropriate.
- Site Leader or designee takes AED out of service. Any AED data will be downloaded or printed from AED by or under the direction of the Program Coordinator. The Program Coordinator will retain one copy of the data report, and forward one copy to the Medical Director.
- Before AED is entered back into service, Site Leader will inspect, clean if needed and re-stock AED station (according to “Maintenance” above).
- The Medical Director will conduct a post-incident review (including quality improvement) and debrief program staff and those involved in the incident. As appropriate, the Medical Director will also ensure patient outcome monitoring and a trained rescuer emotional support process

Permission to Reprint: Newton Department of Health and Human Services, Newton, Massachusetts.

Exhibit 2-17 Student Health Memo to Parents/Guardians

The Commonwealth of Massachusetts
Executive Office of Health and Human Services
Department of Public Health
250 Washington Street, Boston, MA 02108-4619

DEVAL L. PATRICK
GOVERNOR

TIMOTHY P. MURPHY
LIEUTENANT GOVERNOR

JUDYANN BIGBY, M.D.
SECRETARY, EXECUTIVE OFFICE OF HEALTH & HUMAN SERVICES

JOHN M. AUERBACH
COMMISSIONER, MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

MEMO

Student Health and Emergency Information Form

As one of the Massachusetts Department of Public Health's continuing efforts to ensure that every child in Massachusetts is enrolled in a health care plan, two prototypes of *Student Health and Emergency Information Forms* were developed. The prototypes contain a space for the child's health insurance and a statement that, if a child lacks health insurance, the parent should call the school nurse for information about public health insurance plans.

The following forms may be reproduced. Each school district may wish to customize the form according to its individual needs. The school district should carefully determine which form to use depending on the storage location of the completed forms and the need to protect confidential information shared by the parent.

We recommend that school districts follow the same protocols as those for implementation of other new forms. This may include review by school nursing staff, administration, legal counsel and others.

We hope this information proves helpful.

Sincerely,

Exhibit 2-18 (Form A)

Student I.D. # _____ **Home Room** _____

STUDENT HEALTH AND EMERGENCY INFORMATION FORM

Please complete the following information below and return to school immediately. Please contact school nurse if assistance is needed to complete form.

Student's Name_____
Last First Middle

Street Address_____ **State** _____ **Zip Code** _____

Home Phone _____
(area code)

Grade_____ **Sex:** ❒ **Male** ❒ **Female** **Date of Birth** _____

Primary Language_____

Does your child have Health Insurance? ___ **Yes** ___ **No**

Health Insurance Company_____

Policy Number _____

If you have no health insurance, Massachusetts has health insurance plans that will provide uninsured children with affordable health care (restrictions may apply). Please contact the school nurse for more information about these programs.

All communications will be confidential.

Name of Parent 1/Guardian/Other_____ **Place of Employment** _____

Home Address_____ **State** _____ **Zip Code** _____

Work Address_____ **State** _____ **Zip Code** _____

Phone:

Home_____ **Work**_____ **Pager**_____
(area code) (area code) (area code)

Name of Parent 2/Guardian/Other_____ **Place of Employment** _____

Home Address_____ **State** _____ **Zip Code** _____

Work Address_____ **State** _____ **Zip Code** _____

Phone:

Home_____ **Work**_____ **Pager**_____
(area code) (area code) (area code)

Name/Grade of sisters/brothers in school building _____

Please indicate names of others who will assume responsibility and provide transportation for your student in case of illness/injury/emergency evacuation:

Name _____ **Relationship** _____

Daytime Phone_____
(area code)

Name _____ **Relationship** _____

Daytime Phone_____
(area code)

In case of medical emergency, the school will attempt to contact parent/guardian before calling student's primary care provider (physician). Your child will be transported by ambulance to an emergency care facility if necessary.

Physician Name_____ **Telephone Number** _____

Dentist Name_____ **Telephone Number** _____

Please list all medications that your child takes:

I understand that this information is confidential. However, federal law permits information in the school health record to be shared with school officials on a "need to know" basis and with a very limited number of other persons, including those who could help in an emergency. In other circumstances, my consent will be required. **I give permission to exchange information with my child's health care provider. I understand that I can limit or revoke this consent at any time**.

Signature_____ **Date** _____

2005A (DPH)

Exhibit 2-19 (Form B)

Student I.D. # _____ **Home Room** _____

STUDENT HEALTH AND EMERGENCY INFORMATION FORM

Please complete the following information below and return to school immediately. Please contact school nurse if assistance is needed to complete form.

Student's Name_____
Last First Middle

Street Address_____ **State** _____ **Zip Code** _____

Home Phone _____
(area code)

Grade_____ **Sex: ❒ Male ❒ Female Date of Birth** _____ **Primary Language**_____

Does your child have Health Insurance? ___ Yes ___ No

Health Insurance Company_____

Policy Number _____

If you have no health insurance, Massachusetts has health insurance plans that will provide uninsured children with affordable health care (restrictions may apply). Please contact the school nurse for more information about these programs.

All communications will be confidential.

Name of Parent 1/Guardian/Other_____ **Place of Employment** _____

Home Address_____ **State** _____ **Zip Code** _____

Work Address_____ **State** _____ **Zip Code** _____

Phone:

Home_____ **Work**_____ **Pager**_____
(area code) (area code) (area code)

Name of Parent 2/Guardian/Other_____ **Place of Employment** _____

Home Address_____ **State** _____ **Zip Code** _____

Work Address_____ **State** _____ **Zip Code** _____

Phone:

Home_____ **Work**_____ **Pager**_____
(area code) (area code) (area code)

Name/Grade of sisters/brothers in school building _____

Please indicate names of others who will assume responsibility and provide transportation for your student in case of illness/injury/emergency evacuation:

Name _____ **Relationship** _____

Daytime Phone_____
(area code)

Name _____ **Relationship** _____

Daytime Phone_____
(area code)

In case of medical emergency, the school will attempt to contact parent/guardian before calling student's primary care provider (physician). Your child will be transported by ambulance to an emergency care facility if necessary.

Physician Name_____ **Telephone Number** _____

Dentist Name_____ **Telephone Number** _____

Please list all medications that your child takes:

To better serve your child's medical/physical/emotional/educational/social needs, please check the following that pertain to your child:

❒ Heart Condition ❒ Diabetes ❒ Asthma ❒ Seizure Disorder ❒ ADD/ADHD ❒ Migraines

❒ Depression ❒ Other; Specify: _____ **❒ Allergies: To what (for example, food, insects, medication, environment):** _____

Does your child have hearing problems? ❒ Yes ❒ No If yes, ❒ Left ear ❒ Right ear ❒ Hearing Aids

Does your child have vision problems? ❒ Yes ❒ No If yes, ❒ wears glasses ❒ contact lenses ❒ preferential seating

---

I understand that this information is confidential. However, federal law permits information in the school health record to be shared with school officials on a "need to know" basis and with a very limited number of other persons, including those who could help in an emergency. In other circumstances, my consent will be required. **I give permission to exchange information with my child's health care provider. I understand that I can limit or revoke this consent at any time.**

Signature_____ **Date** _____ **2005B**

Exhibit 2-20 Sample Employee Emergency Information Form

Confidential
Employee Emergency Information
_____ School District
(*Optional*)

NAME _____

ADDRESS _____

_____

SCHOOL _____

ASSIGNMENT_____ _____

In case of emergency, please notify:
Name _____ **Relationship** _____
Day Address_____
Evening Address_____
Home Number _____ **Work Number** _____
Cell _____ **Other** _____

Please list any medical conditions (e.g., diabetes, heart disease, allergies, asthma, seizure disorders, mobility limitations):

Please list any medications (prescription and non-prescription) taken on a regular basis:

Primary Care Provider _____
Telephone Number(s) _____
Health Insurance _____

Dental Care Provider _____
Telephone Number(s) _____
Dental Insurance _____

Preferred Hospital (Medical Facility) _____
Date of last Vaccine: _____
Tetanus _____ **Varicella** _____ **MMR** _____ **Pneumococcal** _____ **Influenza** _____

Signature _____ **Date** _____

Exhibit 2-21 Sample 24-Hour Shelter Emergency Medication and Care Plan

CONFIDENTIAL

_____ SCHOOL DISTRICT

STUDENT 24-HOUR SHELTER EMERGENCY MEDICATION AND CARE PLAN

Certain emergency situations may indicate that students are best protected by remaining in their school buildings for an extended period of time, which may include overnight shelter. If such an emergency occurs, every attempt will be made to provide a safe environment. Therefore it is important for parents to complete and return this form, together with the required medication to your student's school nurse at the beginning of each academic year. (Please provide updated information to the school nurse as needed throughout the year.)

STUDENT NAME _____ DOB _____
SCHOOL _____ GRADE _____

In case of extended time in school due to an emergency situation, please notify:
(1) Name _____ Relationship_____
Home Number _____ Work Number _____
Cell _____ Other _____
In case of extended time in school due to an emergency situation, please notify:

(2) Name _____ Relationship_____
Home Number _____ Work Number _____
Cell _____ Other _____

Special Health Issues (Diabetes, Asthma, Allergies, Seizure Disorders, Mobility Limitations, Behavioral/Emotional, etc.)

Special Services Required (Nebulizer Treatment, Sleep Monitoring, Eating Habits, Etc.)

(1) Medication _____Date Prescribed _____
Dosage_____ Frequency_____ Rte of Administration _____
Reason for Medication: _____ Possible Side Effects: _____
Specific Directions:

Licensed Prescriber: _____ Telephone Number _____

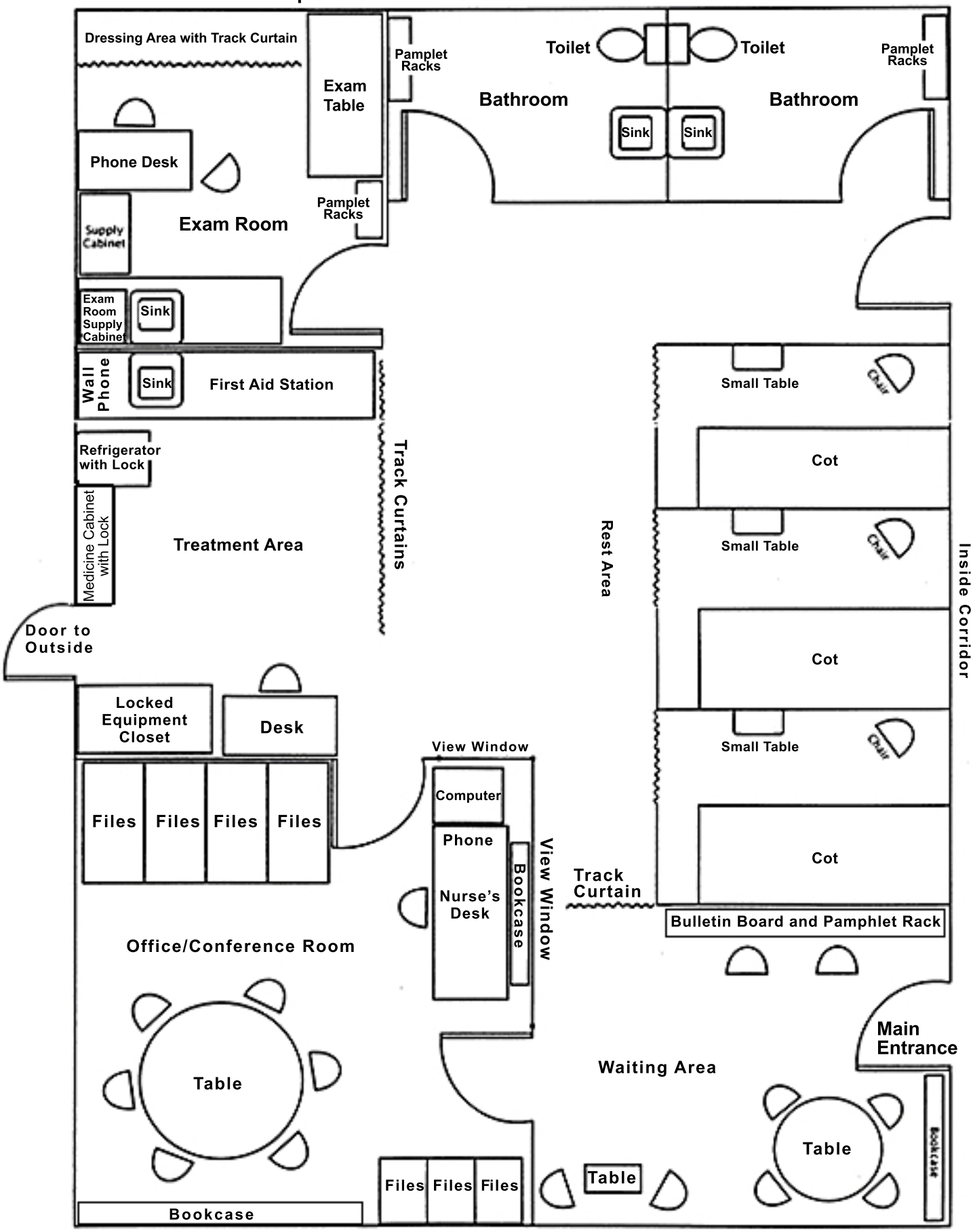
(2) Medication _____Date Prescribed _____
Dosage_____ Frequency_____ Rte of Administration _____
Reason for Medication: _____ Possible Side Effects: _____
Specific Directions:

Licensed Prescriber: _____ Telephone Number _____
Please provide further information on the bottom of this form (Additional medications, Special sleep aids, etc.).

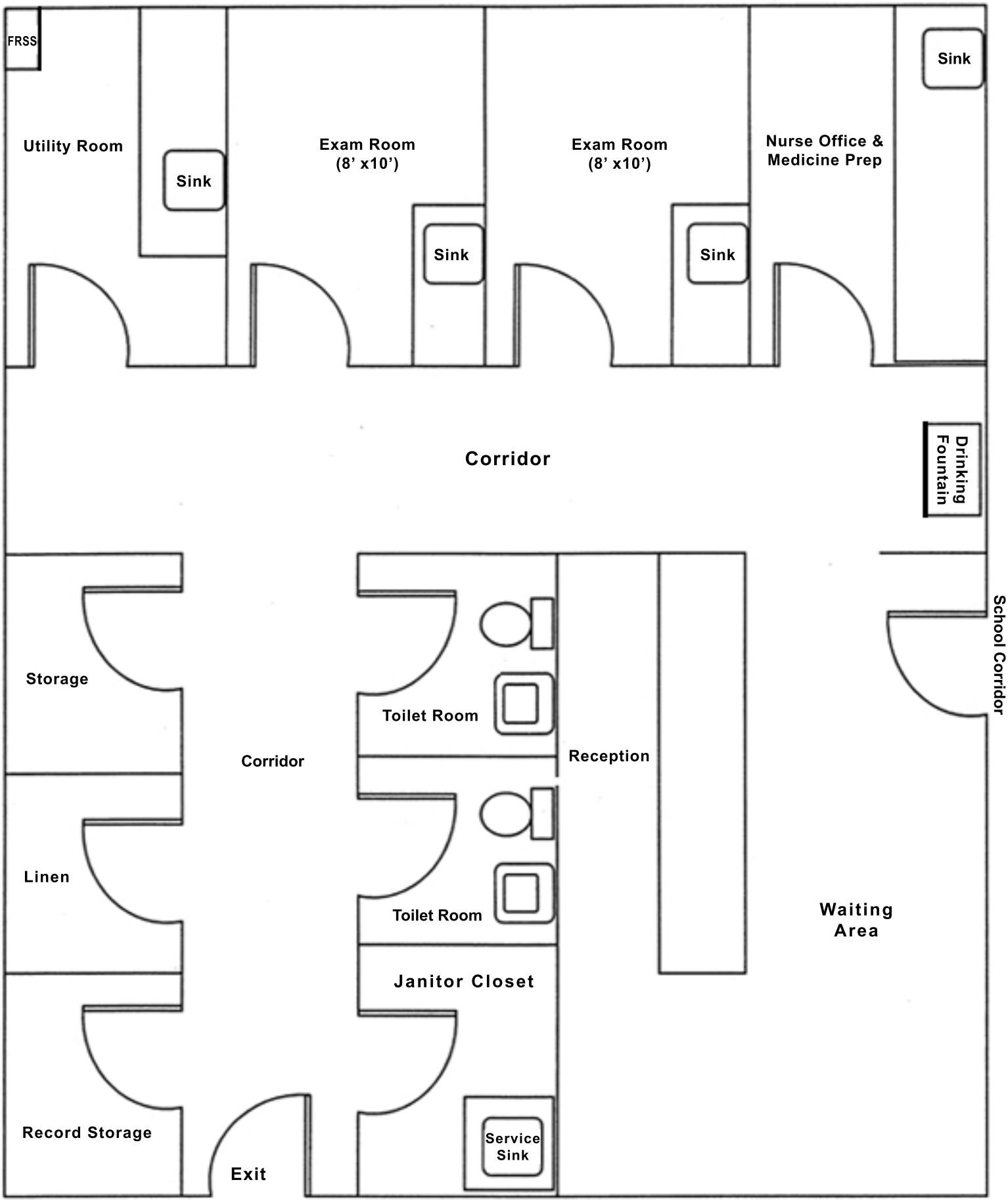
I give permission to the school nurse to share information relevant to my child's health condition with appropriate school personnel when needed to meet my child's health and safety needs. I also give permission to the school nurse and/or his/her designee to administer the medication and/or care plan as indicated.

Parent/Guardian Signature_____ Date_____
(4/07/05)

Exhibit 2-22 Sample Floor Plans for School Health Suite and Center



Sample Floor Plans for School Health Suite and Center



Chapter 3

COMPREHENSIVE SCHOOL HEALTH EDUCATION

Overview of Comprehensive School Health Education

Massachusetts Law and Health Education

Comprehensive School Health Education Standards

Selecting or Developing CSHE Curricula

Integrating CSHE with Other Components of the Coordinated School Health (CSH) Model

Training Health Education Instructors

Implementing the Curriculum

Assessing Student Progress

Summary

Resources: Massachusetts Agencies and Organizations

Resources: Curriculum Analysis and Teaching/Planning Tools

Resources: General Health Education Curricula

Resources: National Agencies and Organizations

References

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html . These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 3

COMPREHENSIVE SCHOOL HEALTH EDUCATION

OVERVIEW OF COMPREHENSIVE SCHOOL HEALTH EDUCATION

The centerpiece of a comprehensive school health education (CSHE) program is a documented, planned, sequential, and skills-based health education curriculum for students in pre-kindergarten through 12th grade. A high-quality curriculum is developmentally and culturally appropriate, is based on students' needs, and focuses on emerging health concepts and issues. The curriculum should be taught by trained teachers, using appropriate instructional methods. When possible, evidence-based approaches and teaching strategies should be used.

The purpose of a CSHE curriculum is to provide ongoing learning opportunities designed to maximize each student's prospects of making health-enhancing decisions throughout life. The desired outcome is both to prevent disease and disability and to promote wellness by integrating the physical, mental, emotional, and social dimensions of healthy development.

A CSHE curriculum is an integral part of an overall program, defined in Massachusetts as a comprehensive school health and human services program (CSHHSP), consisting of an organized set of policies, procedures, and activities designed to protect and promote the health and well-being of students and staff. It operates within a context of respect for the cultural diversity of the student population and encompasses many aspects of school life:

- health education;
- health services;
- the physical and social environment;
- guidance and support services;
- the food service program;
- physical education;
- family and consumer sciences;
- school and worksite health promotion; and
- family and community involvement.

A comprehensive curriculum is an interrelated set of age-appropriate and culturally relevant activities addressing students' health-related knowledge, attitudes about health risks and behaviors, and skill-building, to decrease risk while increasing health-promoting behaviors.

Additionally, a CSHE curriculum should be based on a well-planned scope and sequence of lessons that include all grade levels, K-12. Elementary-school students should learn basic health concepts and skills as a foundation. Intensive health education is especially important in the middle grades, because early adolescents may face intensified peer pressure to engage in behaviors that threaten their health and safety. Health education should continue through the final years of high school, when many adolescents have begun to drive cars, some have become sexually active, and all need

reinforcement for the development of healthy behaviors that will extend into adulthood. The knowledge and skills needed for a healthy lifestyle are developed, refined, and strengthened over the years through carefully sequenced health education.

MASSACHUSETTS LAW AND HEALTH EDUCATION

The legal basis for health education in Massachusetts Public Schools is M.G.L. c.71, s.1, which states:

> "Instruction in health education shall include, but not be limited to: consumer health, ecology, community health, body structure and function, safety, nutrition, fitness and body dynamics, dental health, emotional development, and training in the administration of first aid, including cardiopulmonary resuscitation . . . In connection with physiology and hygiene, instruction as to the effects of alcoholic drinks and of stimulants, including tobacco, and narcotics on the human system, as to tuberculosis and its prevention, as to the detection and prevention of breast and uterine cancer, and as to fire safety, including instruction in the flammable qualities of certain fabrics, and as to the prevention and treatment of burn injuries, shall be given to pupils in all schools under public control, except schools maintained solely for instruction in particular subject areas . . . No pupil shall be required to take or participate in instruction on disease, its symptoms, development and treatment, whose parent or guardian shall object thereto in writing on the grounds that such instruction conflicts with his sincerely held religious beliefs, and no pupil so exempt shall be penalized by reason of such exemption."

Although health education curriculum topics are listed in some detail, there are no hour, topic, or grade-level requirements at the state level for health education. Establishing health education requirements is the responsibility of local school districts. As a result, health education varies from district to district.

M.G.L. c.71, s.32A specifies that districts implementing any curriculum that primarily involves human sexual education or human sexuality issues must notify parents/guardians in writing about the curriculum, make the curriculum available for review, and allow parents/guardians the option of exempting their children from any part of that curriculum.

M.G.L. c.69, s.1D directs the Massachusetts Board of Education to develop academic standards for core academic subjects, not including health per se. However, the statute includes the provision that "standards may provide for instruction in the issues of nutrition, physical education, AIDS education, violence prevention, and drug, alcohol and tobacco abuse prevention. The Board may also include the teaching of family life skills, financial management and consumer skills." In 1999, the Massachusetts Department of Education (DOE) outlined such standards in the *Massachusetts Comprehensive Health Curriculum Framework*. The Framework, which incorporates health education, physical education, and family and consumer sciences, provides guidelines for developing or adopting K-12 curricula.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html . These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR).

You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

COMPREHENSIVE SCHOOL HEALTH EDUCATION STANDARDS

Through health literacy, healthy self-management skills, and health promotion, comprehensive health education teaches fundamental health concepts, promotes habits and conduct that enhance health and wellness, and guides efforts to build healthy families, relationships, schools, and communities. The Massachusetts Comprehensive Health Curriculum Framework discusses recommended health education content in terms of 4 separate but interrelated strands: physical health, social and emotional health, safety and prevention, and personal and community health. Each strand includes several PreK-12 standards (14 in all) that define topic-oriented content and set expectations for knowledge and skills that students should acquire from their health studies.

Physical Health Strand

- Growth and Development
- Physical Activity and Fitness
- Nutrition
- Reproductive Health

Social and Emotional Health Strand

- Mental Health
- Family Life
- Interpersonal Relationships

Safety and Prevention Strand

- Disease Prevention and Control
- Safety and Injury Prevention
- Tobacco, Alcohol, and Other Substance Use/Abuse Prevention
- Violence Prevention

Personal and Community Health Strand

- Consumer Health and Resource Management
- Ecological Health
- Community and Public Health

Within these standards, measurable student competencies are defined for each grade span (PreK-5, 6-8, 912). Detailed descriptions of the standards and the associated competencies may be found at http://www.doe.mass.edu/frameworks/health/1999/1099.pdf. Print copies are available upon request from the Department of Education.

The Massachusetts standards are organized primarily by topical content, although each standard also addresses skill development. The National Health Education Standards, developed by the Joint Committee on National Health Education Standards in 1995 and revised in 2005, place an even stronger emphasis on the critical health skills students need in order to adopt, practice, and maintain healthy behaviors. The National Health Education Standards state that:

- Students will comprehend concepts related to health promotion and disease prevention to enhance health.
- Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.
- Students will demonstrate the ability to access valid information and products and services to enhance health.
- Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.
- Students will demonstrate the ability to use decision-making skills to enhance health.
- Students will demonstrate the ability to use goal-setting skills to enhance health.
- Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.
- Students will demonstrate the ability to advocate for personal, family, and community health.

Cited from the Pre-publication document of National Health Education Standards, Pre-K through 12, American Cancer Society, December 2005 – August 2006.

The Massachusetts Framework and the National Health Education Standards can complement one another, with the former outlining important topic areas and the latter focusing on the development of health-related skills.

SELECTING OR DEVELOPING CSHE CURRICULA

In Massachusetts, health education curricula and textbooks are chosen locally. Most school districts have established processes to review and select texts and curricula. Ideally, this process involves a team or work group that includes health education specialists, curriculum specialists, physical education and family/consumer sciences teachers, school nurses, school physicians, school counselors, school administrators, food service administrators, parents, and community representatives. The School Health Advisory Committee may also be used for this purpose (see Chapter 2). Including parents and community members on curriculum review teams is important to ensure that the curriculum addresses health topics of local concern and that it is consistent with community values.

By reviewing the entire scope and sequence of the curriculum under consideration, the team can ensure that essential knowledge and skills are addressed, that there are no gaps or unnecessary redundancies in topic coverage, and that skills and concepts introduced in earlier grades are reinforced in later grades.

Effective curricula share eight characteristics:

- They are research-based and theory driven;
- They include basic, accurate information that is developmentally appropriate;
- They use interactive, experiential activities that actively engage students;
- They provide students with opportunities to model and practice relevant social skills;
- They address social or media influences on behavior;
- They strengthen individual values and group norms that support health-enhancing behaviors;
- They are of sufficient duration to allow students to gain the needed knowledge and skills; and
- They include teacher training that enhances effectiveness. (Lohrmann & Wooley, 1998)

Although many professionally developed health education curricula are available, most are either not comprehensive or not fully and rigorously evaluated. Some of the former category target specific age groups (e.g., K-3, early adolescents) rather than all ages. The majority of the latter, those with strong evaluation support for their effectiveness in influencing student behavior, have focused on a few specific outcomes, rather than covering the full range of important health topics. Recently, for example, a number of curricula or school programs which are focused on healthy eating and physical activity (Gortmaker et al., 1999) and suicide prevention (Aseltine & DeMartino, 2004) have been evaluated and have shown evidence of effectiveness. A list of research-based curricula and programs with evidence of reducing behaviors leading to teen pregnancy and sexually-transmitted disease is available from Advocates for Youth (2003). The U.S. Department of Education (2002) has published a list of exemplary and promising school programs with evidence of reducing violent behavior and substance use.

It is possible to find comprehensive school health education curricula with evaluation results supporting at least *some* objectives; four are listed at the end of this chapter under Resources: General Health Education Curricula. However, a school district may find that no single evaluated K-12 curriculum meets its needs and may decide to develop its own curriculum, to use different curricula at different grade levels, or to supplement topic-specific curricula with lessons from other sources. The district curriculum director and other school and community professionals who have expertise in health content and/or curriculum development should be key participants in such efforts.

In the future, the number of comprehensive, research-based programs is likely to increase. As availability increases, so will the expectation that schools will use programs and curricula that have been carefully evaluated. At present, the CDC-developed Health Education Curriculum Analysis Tool (HECAT) sets useful guidelines for schools or districts that need to select, review, or develop a school health education curriculum. In addition to step-by-step instructions for bringing together a curriculum review team, the HECAT also provides scoring sheets for team members to use in rating the extent of topic coverage and the depth of student skills practice. CDC has also developed a similar tool, called the PECAT, to assist with evaluation of physical education curricula. It has also provided the Consumer Guide to Health Education Curricula, an interactive, online program, based on the HECAT, which contains expert analyses of critical components of health education curricula. For more information about these tools, see CDC's Division of Adolescent and School Health (DASH) website at: http://www.cdc.gov/HealthyYouth/keystrategies/action.htm.

INTEGRATING CSHE WITH OTHER COMPONENTS OF THE COORDINATED SCHOOL HEALTH (CSH) MODEL

School health programs are most effective in helping youth develop healthy lifestyles when all components are coordinated and when they reinforce one another. Comprehensive school health

education can and should work with other CSH components in a number of ways. (See Chapter 1 for a detailed discussion of the elements of the Coordinated School Health model.)

School nurses, counselors, and other school health staff are key partners with classroom health teachers in promoting the health of children and adolescents. Health education content can also be strengthened when health teachers collaborate with other teachers and staff, as well as with students, families, and the community. School nurses are an excellent resource and can offer presentations on a wide range of health issues at all grade levels. They may be called upon to deliver behavioral health education lessons in some areas (e.g., puberty, staying healthy during flu season, dealing with depression and stress), and they can make youth aware of the school and community health and mental health services available to them. Additionally, by working with school health staff, teachers can learn how to access and use the school's identification and referral system so that they may guide students with health needs toward the appropriate staff professionals.

Physical education teachers and school food service staff are additional resources in promoting health. Students who learn about target heart rate in health class can be asked in physical education to monitor their own heart rates before and after exercise. Food service staff can give teachers and students information about nutrition and safe food handling. Teachers, in turn, can involve their students in analyzing the nutritional content of cafeteria offerings. Teachers of non-health subjects can sometimes be enlisted to deliver health education lessons. The *Planet Health* curriculum, for example (Gortmaker et al., 1999), includes nutrition and physical-activity lessons to be taught by middle-school math, science, social studies, and language arts teachers.

Older students can also be an effective resource. Some successful elementary and middle-school health education programs involve trained high-school peer leaders in conducting classroom health education activities. Children and youth are more likely to adopt a behavior if it is modeled or advocated by someone they wish to emulate.

Family and community involvement in health education is especially important. Parents/guardians and community agency members (including primary care providers) can and should be involved in school health advisory committees. Many school-based prevention programs also involve parents/guardians and community agency personnel in the implementation of health education curricula. For example, community agency personnel may assist students with assignments that ask them to identify the particular health needs of their communities and/or to locate health-related products and services available in their communities.

Health teachers can encourage family involvement by sending home information about health and by providing parent/guardian education programs focusing on topics that parallel those covered in the curriculum.

TRAINING HEALTH EDUCATION INSTRUCTORS

To be effective in increasing knowledge and influencing behavior, classroom health education should be delivered by well-trained instructors. In Massachusetts, teachers can earn a combined Health Education/Family and Consumer Sciences certification, licensing them to teach health education in secondary schools. This certification requires not only a solid background in health content knowledge but also experience in using interactive skills methods, dealing with sensitive issues in a group setting, devising activities and assignments that encourage students to practice skills, and assessing whether students meet learning standards. In Massachusetts, approximately 4 out of 5 lead health teachers in public secondary schools hold certification in health education (Massachusetts School

Health Education Profiles, 2004). Classroom teachers at the elementary school level may be less well prepared, however, since coursework in health education is not a requirement for elementary teacher certification. These teachers should be encouraged to obtain additional training in this area and request mentoring by licensed health educators from the school district.

It is also important that instructors be trained on the *specific* curriculum to be used in their classrooms. The effectiveness of research-based curricula depends on the lessons being implemented with fidelity. Although teachers can gain an overview understanding of a particular curriculum in an hour or two and can increase their knowledge base in several hours, more thorough and comprehensive training is needed if teachers are to implement the full curriculum skillfully. Like students, teachers need both in-depth information and extensive skill-building exercises related to the curriculum. It is especially important that teachers have multiple opportunities for practice, feedback, and reinforcement in those areas that may be unfamiliar or uncomfortable, such as managing student cooperative learning exercises or discussing sensitive topics.

IMPLEMENTING THE CURRICULUM

Whether dealing with a whole K-12 curriculum or just one topic, instructors in health education are encouraged to use methods that are likely to influence behavior, not merely impart knowledge. In general, methods that work best are interactive ones that encourage students to personalize the messages and apply them to their own lives. As with learning any skill, practice and feedback are essential. For example, students can construct healthy menus, role-play alcohol refusal skills, identify personal pressures to engage in risky behavior, or compare the trustworthiness of information about medications obtained from various Web-based information sources.

The likelihood of students learning and applying health skills increases if those skills are practiced in a variety of situations. For example, students can be asked to demonstrate goal-setting skills when constructing a personal plan for increasing their level of aerobic exercise, and these same skills can later be applied to designing a healthy weight-loss plan.

ASSESSING STUDENT PROGRESS

It is important to assess whether students have reached the learning standards set by the health education curriculum, acquired the necessary content knowledge, and developed proficiency in targeted health-related skills. Health education is not one of the subjects included in the statewide Massachusetts Comprehensive Assessment System (MCAS), so schools should develop health education assessments aligned with their own curricula. An extensive bank of health education test items, matched to the National Health Education Standards, has been developed and piloted by the Health Education Assessment Project of the Council of Chief State School Officers' (CCSSO) State Collaborative on Assessment and Student Standards (SCASS). This testing collection includes both selected response (multiple-choice) items to assess content knowledge and performance-based questions and activities that require students to demonstrate more complex skills. Additional information about SCASS and health education assessment resources is available at http://www.ccsso.org/projects/SCASS/. Test items are password-protected and can be made available only to authorized school personnel who have completed DOE health education assessment training requirements and sign a nondisclosure agreement. To find out more about health education assessment offerings and technical assistance from DOE, contact the department's Comprehensive School Health Education Coordinator.

SUMMARY

A carefully planned, sequential, evidence-based K-12 health education program, properly implemented by trained teachers and coordinated with other CSH components, can play a vital role in ensuring that young people develop the knowledge, attitudes, and skills they will need to be healthy as adults.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS

Massachusetts Association for Health, Physical Education, Recreation and Dance (MAHPERD)
P.O. Box 182
Attleboro, MA 02703
Phone: 774-254-4657
Fax: 508-342-7020
Website: http://www.ma-hperd.org
MAHPERD is a nonprofit, professional membership association of educators dedicated to enhancing quality of life through education based in the allied disciplines of health, physical education, recreation, and dance.

Massachusetts Department of Education
Coordinated School Health Program
350 Main Street
Malden, MA 02148-5023
Phone: 781-338-3603 or 781-338-6308
Website: http://www.doe.mass.edu/cnp/hprograms/cshp/
DOE's Coordinated School Health Program provides training and technical assistance related to comprehensive school health education curricula, instruction, and assessment.

Massachusetts Department of Public Health
Coordinated School Health Program
Bureau of Family and Community Health
250 Washington Street
Boston, MA 02108
Phone: 617-624-5537
Website: http://www.mass.gov/dph/fch/schoolhealth/cshp.htm

RESOURCES: CURRICULUM ANALYSIS AND TEACHING/ PLANNING TOOLS

Centers for Disease Control and Prevention
Division of Adolescent and School Health (DASH)
P.O. Box 8817
Silver Spring, MD 20907
E-mail: HealthyYouth@cdc.gov
Website: http://www.cdc.gov/HealthyYouth/
DASH seeks to prevent the most serious health risk behaviors among children, adolescents, and young adults. As part of this mission, CDC has developed 3 complementary curriculum analysis tools to assist state and local education agencies in selecting and/or developing quality, research-based health and physical education curricula. These user-friendly tools help educators determine the degree to which a curriculum includes critical elements of effectiveness, distilled from national education standards and CDC's school health guidelines. The tools are:

- Health Education Curriculum Analysis Tool (HECAT).
- Physical Education Curriculum Analysis Tool (PECAT).
- Consumer Guide to Health Education Curricula, an interactive, online program in a *Consumer Reports*-style format that contains expert analyses of critical components of health education curricula, based on the HECAT, as well as analyses of outcome evaluation findings.

CDC also offers the *School Health Index,* a self-assessment and planning tool that enables schools to identify the strengths and weaknesses of their health promotion policies and programs; develop an action plan for improving student health; and involve teachers, parents, students, and the community in improving school policies and programs. The School Health Index is available at http://apps.nccd.cdc.gov/shi/.

Finally, DASH periodically conducts a national survey, the School Health Policies and Programs Study (SHPPS), to assess school health policies and programs. Summaries of results for Massachusetts, as well as the nation, may be obtained from http://www.cdc.gov/HealthyYouth/SHPPS

Media Education Foundation
60 Masonic Street
Northampton, MA 01060
Phone: 800-897-0089 or 413-584-8500
Fax: 800-659-6882 or 413-586-8398
E-mail: info@mediaed.org
Website: http://www.mediaed.org
Media Education Foundation is a nonprofit educational organization devoted to media research and production of resources to assist educators in fostering analytical media literacy.

RESOURCES: GENERAL HEALTH EDUCATION CURRICULA

Each of the following has received research support for the efficacy of at least *some* aspects of its curriculum:

Great Body Shop (for grades PreK-8)
Children's Health Market
P.O. Box 7294
300 Danbury Road, Suite 102
Wilton, CT 06897
Phone: 800-782-7077
Website: http://www.thegreatbodyshop.net/

Growing Healthy (for grades K-6)
National Center for Health Education
375 Hudson Street
New York, NY 10014
Phone: 212-463-4053
Fax: 212-463-4060
Website: http://www.nche.org/

Michigan Model for Comprehensive School Health Education (for grades K-12)
Central Michigan University's Educational Materials Center (EMC)
139 Combined Services Building
Central Michigan University
Mt. Pleasant, MI 48859
Phone: 989-774-3953 or 800-214-8961
Website: http://www.emc.cmich.edu/mm/default.htm
EMC is the official distribution center for the Michigan Model®. The Center works with the Michigan Model® State Steering Committee to keep materials current.

Teenage Health Teaching Modules (for grades 6-12)
Center for School Health Programs
Education Development Center
55 Chapel Street
Newton, MA 02458
Phone: 617-969-7100
Website: http://www.thtm.org/

Note: Information about topic-specific curricula can be found in the Resources sections of the related chapters.

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS

Advocates for Youth
2000 M Street NW, Suite 750
Washington, DC 20036
Phone: 202-419-3420
Fax: 202-419-1448
E-mail: questions@advocatesforyouth.org
Website: http://www.advocatesforyouth.org

American Association for Health Education (AAHE)
American Alliance for Health, Physical Education, Recreation & Dance (AAHPERD)
1900 Association Drive
Reston, VA 20191-1598
Phone: 703-476-3400 x437 or 800-213-7193 x437
Website: http://www.aahperd.org
One of 6 organizations now joined as AAHPERD, AAHE develops standards and services related to health education for both professionals and nonprofessionals, promotes policies and evaluative procedures that will result in effective health education programs, and assists in the development and mobilization of resources for effective health education and promotion. AAHE publishes the *American Journal of Health Education,* the *International Electronic Journal of Health Education,* and project briefs aimed at strengthening the professional preparation of elementary, middle school, and special-education teachers in health education, including HIV prevention education.

American School Health Association
7263 State Route 43
P.O. Box 708
Kent, OH 44240
Phone: 330-678-1601
Fax: 330-678-4526
E-mail: asha@ashaweb.org
Website: http://www.ashaweb.org
ASHA publications include:

- *Health Is Academic: A Guide to Coordinated School Health Programs* (1998)
- *Introductory Guide to Advocacy: Working to Improve Advocacy for School Health Education and Services* (2001)
- *National Health Education Standards: Achieving Health Literacy* (1995)
- *Promoting Healthy Youth, Schools, and Communities: A Guide to Community-School Health Councils* (2003)
- *School Health Education Research: Methods, Protocols, and Instruments*
- *School Health Policies and Programs Study (SHPPS) 2000: A Summary Report* (2001)

Association of State and Territorial Directors of Health Promotion and Public Health Education
1101 Fifteenth Street NW, Suite 601
Washington, DC 20005
Phone: 202-659-2230
Fax: 202-659-2339
Website: http://www.astdhpphe.org/
This organization's mission is to serve as a channel for the exchange of information and experience among directors of public health education programs.

Coalition Organized for Health Education in Schools (COHES)
PMB 388, 738 Main Street

Waltham, MA 02451
Phone: 888-550-9600
Website: http://www.cohes.org
COHES is a statewide, voluntary coalition committed to improving the health of school-age youth in Massachusetts by advocating for and supporting comprehensive health education.

Comprehensive Health Education Foundation (CHEF)
22419 Pacific Hwy S
Seattle, WA 98198-5106
Phone: 800-323-2433 or 206-824-2907
TTY: 800-833-6388
E-mail: info@chef.org
Website: http://www.chef.org
CHEF is an organization dedicated to promoting health and quality of life through education. It offers prevention curricula and health education programs for K-12 students, as well as resources for educators.

Health, Mental Health and Safety Guidelines for Schools
Health and Safety Education
Website: http://www.nationalguidelines.org/chapter_full.cfm?chapter=health
This website contains guidelines developed by more than 300 health, education, and safety professionals from more than 30 different national organizations, as well as by parents and other supporters. The lead organizations for the guidelines were the American Academy of Pediatrics and the National Association of School Nurses.

National Commission for Health Educator Credentialing (NCHEC)
1541 Alta Drive, Suite 303
Whitehall, PA 18052-5642
Phone: 484-223-0770 or 888-624-3248
Fax: 800-813-0727
E-mail: nchec@nchec.org
Website: http://www.nchec.org
NCHEC's mission is to improve the practice of health education and to serve the public and profession of health education by certifying health education specialists, promoting professional development, and strengthening professional preparation and practice.

National Institute of Child Health and Human Development (NICHD)
Information Resource Center (IRC)
P.O. Box 3006
Rockville, MD 20847
Phone: 800-370-2943
Fax: 301-984-1473
E-mail: NICHDInformationResourceCenter@mail.nih.gov
Website: http://www.nichd.nih.gov
NICHD's IRC provides information on health issues to the public. Its website offers health information, access to trained information specialists, and viewing/download/order access to NICHD publications.

Rocky Mountain Center for Health Promotion and Education (RMC)
7525 West 10th Avenue
Lakewood, CO 80214
Phone: 303-239-6494
Fax: 303-239-8428
E-mail: info@rmc.org
Website: http://www.rmc.org
RMC is a private, nonprofit corporation that disseminates comprehensive school health education programs; offers technical assistance and training on the national health education standards; and provides in-service training to educators, parents, and others. The organization's newsletter, *RMC Health Educator,* is available free of charge.

Council of Chief State School Officers
State Collaborative on Assessment and Student Standards (SCASS)
Division of State Services and Technical Assistance
One Massachusetts Avenue NW, Suite 700
Washington, DC 20001-1431
Phone: 202-336-7000
Fax: 202-408-8072
Website: http://www.ccsso.org/projects/SCASS/
The State Collaborative on Assessment and Student Standards (SCASS) encourages and assists collaboration among states on design and development of assessment.

REFERENCES

Advocates for Youth. (2003). *Science and success: Sex education and other programs that work to prevent teen pregnancy, HIV, and sexually transmitted infections*. Washington, DC: Advocates for Youth.

Aseltine, R. & DeMartino, R. (2004). An outcome evaluation of the SOS Suicide Prevention Program. *American Journal of Public Health, 94,* 446–451.

Centers for Disease Control and Prevention, Division of Adolescent and School Health (forthcoming). Health education curriculum analysis tool (HECAT). Atlanta, GA: Centers for Disease Control.

Centers for Disease Control and Prevention, Division of Adolescent and School Health (2006). Physical education curriculum analysis tool (PECAT). Atlanta, GA: Centers for Disease Control.

Centers for Disease Control and Prevention, Division of Adolescent and School Health (2004). School Health Index. Atlanta, GA: Centers for Disease Control.

Denehy, J. (2001). Health education: An important role for school nurses. *Journal of School Nursing, 17*(5), 233–238. PMID: 11885338.

Deschesnes, M., Martin, C. & Hill, A. J. (2003). Comprehensive approaches to school health promotion: How to achieve broader implementation. *Health Promotion International, 18*(4), 387–396.

Gloppen, K. M. & Hunt, P. (2004, November). *Guidance for selection of research-based, effective health education curricula: A new initiative at CDC*. Presentation at Public Health and the Environment, Washington, DC.

Gortmaker, S., Peterson, K., Wiecha, J., et al. (1999). Reducing obesity via a school-based interdisciplinary intervention among youth: Planet Health. *Archives of Pediatric and Adolescent Medicine, 15,* 409–418.

Hausman, A. J. & Ruzek, S. B. (1995). Implementation of comprehensive school health education in elementary schools: Focus on teacher concerns. *Journal of School Health*, *65*(3), 81–86.

Hern, M. J., Gates, D., Amlung, S. & McCabe, P. (1998). Linking learning with health behaviors of high school adolescents. *Pediatric Nursing*, *24*(2), 127–132.

Joint Committee on National Health Education Standards. (1995). *Achieving health literacy: An investment in the future*. Atlanta, GA: American Cancer Society.

Lohrmann, D. & Wooley, S. (1998). Comprehensive school health education. In E. Marx & S. Wooley (Eds.), *Health is academic: A guide to coordinated school health programs,* 43–66. New York: Teachers College Press.

Massachusetts Department of Education. (1999). *Massachusetts comprehensive health curriculum framework.* Malden, MA: Massachusetts Department of Education.

Meeks, L. & Heit, P. (2003). *Totally awesome strategies for teaching health*. New York: McGraw-Hill.

Pateman, B., Grunbaum, J. A. & Kann, L. (1999). Voices from the field: A qualitative analysis of classroom, school, district, and state health education policies and programs. *Journal of School Health, 69*(7), 258–263. PMID: 10529963.

Tappe, M. K. & Galer-Unti, R. A. (2001). Health educators' role in promoting health literacy and advocacy for the 21st century. *Journal of School Health, 71*(10), 477–482.

Note: Articles with PMID number have been indexed by PubMed for MEDLINE.

Chapter 4

A SAFE AND HEALTHFUL ENVIRONMENT

Building and Environmental Standards
Indoor Air Quality
School Buses
Underground Fuel Storage Tanks
Asbestos
Radon
“Right-to-Know” and Environmental Hazards
Pesticides
Laboratory, Shop, and Art Studio Product Safety
Renovations in an Occupied Building
School Maintenance and Sanitation
School Food Service
Lighting
Water Supply
Plumbing
Fire Safety
Outdoor Safety
Building Security
Disaster/Terrorism Planning and Risk Mitigation
Summary
Resources: Massachusetts Agencies and Organizations
Resources: National Agencies and Organizations (General)
Resources: Specific Topics
References
Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 4

A SAFE AND HEALTHFUL ENVIRONMENT

A safe and healthy school environment is critical to education. Considerable evidence exists to suggest that substandard school environments impede learning. Substandard is defined as schools that lack appropriate heating, ventilation, and air-conditioning (HVAC) systems, have poor lighting or acoustics, are badly maintained, or have other environmental problems. For example, researchers have found that students in "poor" buildings score 5 to 10 percentile rank points lower on standardized tests than do students in functional buildings, after controlling for socioeconomic status (Earthman, 2004).

Indoor pollutants adversely impact the health, attendance, and performance of students (Mendell & Heath, U. S. DOE, 2004). Mold, mildew, dust, animal dander, radon, secondhand smoke, asbestos, and formaldehyde can trigger various allergies and asthma. The U. S. Environmental Protection Agency estimates that asthma alone accounts for 14 million missed school days each year. The rate of asthma in young children has risen by 160% in the past 15 years, and today 1 out of every 13 school-age children has asthma.

The school environment also affects teachers and other staff. Surveys have shown a significant connection between the condition of school facilities and teacher retention. Some research has even suggested that the teacher-retention benefits of facility improvement can be equal to or greater than those from pay increases (Buckley, Schneider & Shang, 2004).

A school's physical environment can also influence its social climate. The National Forum on Educational Statistics notes: "Students and staff interact more constructively in an environment that is orderly, clean, and safe." In a 2003 staff information report titled *Do K–12 School Facilities Affect Education Outcomes?,* the Tennessee Advisory Commission on Intergovernmental Relations reported, "The strong implication from the entire body of research [is] that the quality of facilities has more of an effect on factors such as student attitudes toward school, self-esteem, security, comfort, and pro-social behavior, which in turn affect learning and achievement." (See Chapter 13 for more information about social climate and safety in schools.) Clearly, providing well-maintained, hygienic, and safe school buildings should be a priority.

BUILDING AND ENVIRONMENTAL STANDARDS

In Massachusetts, the responsibility for establishing and enforcing minimal structural and safety standards for school buildings is shared by several state agencies, which in turn depend on local health, fire, and building inspection staff to ensure that school facilities conform with state codes and regulations. The major state agencies involved are the Department of Public Safety, Department of Education, Division of Professional Licensure (within Office of Consumer Affairs and Business Regulation), Department of Public Health, Department of Environmental Protection, and Massachusetts School Building Authority. The role of each agency is described below.

Massachusetts Department of Public Safety

The Department of Public Safety (MDPS) is responsible for consultation with and supervision of local building inspectors and inspection programs. Within MDPS, the Architectural Barriers Board issues and oversees regulations to facilitate the use of public buildings (including schools) by the disabled. The Board of Fire Prevention Regulations/State Fire Marshal issues regulations regarding local fire hazard inspections.

The State Building Code (780 CMR), most recently amended in 1997, establishes the minimum structural standards for school buildings. Local building inspectors are responsible for inspecting and approving school buildings within their municipalities. School buildings must be inspected annually and may not be occupied without a certificate of occupancy.

Massachusetts Department of Education

The Massachusetts Department of Education and its unit of Nutrition, Health, and Safety regulate the operation of school food service programs. The operation of a food service facility in a school also requires a permit from the local board of health.

Massachusetts Division of Professional Licensure

Within the Division of Professional Licensure, the Board of State Examiners of Plumbers and Gasfitters (28 CMR) establishes the minimum plumbing and gas standards, including the number of required plumbing fixtures in a school and their accessibility. Plumbing must be in compliance with Massachusetts regulations and codes and must be maintained in good working order.

Massachusetts Department of Public Health

The Massachusetts Department of Public Health's Division of Food and Drugs Food Protection Program has established standards for food service establishments (105 CMR 590.000: Minimum Standards for Food Establishments), which are administered by the local board of health. A minimum of 2 inspections per year by the board of health is generally required.

A permit must be issued by the board of health, dependent on the facility’s meeting the requirements of 105 CMR 590.000. These minimum standards cover all aspects of food sanitation: sources of food; food protection; health and cleanliness of personnel; design, construction, installation, and cleanliness of equipment and utensils; water supply; plumbing and sewage disposal; toilet and handwashing facilities; vermin control; garbage handling and disposal; lighting and ventilation; dressing rooms; and housekeeping.

The Center for Environmental Health's Division of Community Sanitation has established minimum standards for public and semipublic swimming pools (105 CMR 435.000) and the handling and disposal of infectious waste (15 CMR 480.000). The use of a swimming pool in a school building is contingent upon permitting by the local board of health.

The Center for Environmental Health's Emergency Response/Indoor Air Quality (ER/IAQ) Program has the responsibility to advise government concerning sanitary and other conditions in public institutions (M.G.L. c.111, s.5). Under this authority, the ER/IAQ unit conducts assessments of indoor air quality in public buildings, including schools, throughout Massachusetts. During an assessment, the ER/IAQ unit evaluates the ventilation system, determines the potential for microbial growth, and locates the point sources of environmental concerns.

In addition, this unit administers the regulations that require operators of indoor ice skating rinks to test for carbon monoxide and nitrogen dioxide (105 CMR 675.000). Other activities of the ER/IAQ unit include:

- emergency response to chemical spills;
- administration of the Massachusetts Right-To-Know law (M.G.L. c.111F), which entitles individuals in schools and workplaces to receive information about toxic substances that are used or stored; and
- participation in the activities of the State Emergency Response Commission with regard to the Emergency Planning and Community Right-To-Know Act of 1986.

Massachusetts Department of Environmental Protection

The Division of Water Pollution Control within the Department of Environmental Protection established the minimum standards for sewage disposal in unsewered areas (310 CMR 15.00). The division has the responsibility of approving installations that handle sewage greater than 15,000 gallons per day. Systems with a lesser flow are the responsibility of the local board of health. The Water Supply Division regulates the quality of the water supply. Schools that are not connected to a municipal water supply must conduct testing and reporting as specified (310 CMR).

Massachusetts School Building Authority

Chapters 201, 208, and 210 of the Acts of 2004 created the Massachusetts School Building Authority (MSBA), an independent public authority charged with achieving the objectives of effective management and planning of the Commonwealth's investments in school building assets; promoting positive educational outcomes; ensuring the health, safety, security, and well-being of students; easing and preventing overcrowding; maintaining good repair; efficient, and economical construction and maintenance, watching out for the financial sustainability of the school building assistance program; inviting thoughtful community development; pursuing smart growth, and providing accessibility.

MSBA oversees the School Modernization and Reconstruction Trust Fund (SMART Fund) and the school building assistance program. As part of this responsibility, MSBA is required to:

- collect and maintain data on all public school facilities in the Commonwealth, including information on size, usage, enrollment, available facility space, and maintenance;
- create a maintenance assessment program for school buildings; and
- use such an assessment program to issue ratings of building conditions for each school district.

MSBA is required to issue the maximum eligible cost standards and size standards for school projects annually in conformity with the minimum requirements of state law and in consideration of cost effects, prevailing educational standards in the Commonwealth, and the needs of efficient and creative school projects.

MSBA serves as a resource for local communities by providing:

- architectural or other technical advice and assistance;
- training and education to cities and towns, or to joint committees thereof, and to general contractors, subcontractors, construction or project managers, designers, and others in the planning, maintenance, and establishment of school facility space; and
- collection and maintenance of a clearinghouse of prototypical school plans, which may be consulted by eligible applicants.

INDOOR AIR QUALITY

Addressing indoor air quality (IAQ) in buildings can be challenging and complex. Key methods for controlling indoor air quality include: reducing exposure from known sources, ensuring adequate ventilation, and implementing air cleaning. An IAQ management plan that has both technical and administrative provisions is recommended for each school. Information about IAQ management planning can be obtained from DPH's Center for Environmental Health's Emergency Response/Indoor Air Quality Program and the EPA Regional Office.

EPA's premier resource on this issue is its *Indoor Air Quality Tools for Schools* kit, which provides schools with information and guidance on carrying out a practical plan of action to improve indoor air problems at little or no cost, using straightforward activities and in-house staff. (EPA's schools-related resources are available at http://www.epa.gov/iaq/schools.)

Causes of Indoor Air Quality Problems in Schools

Three major factors affect the quality of air in schools:

- heating, ventilating, and air conditioning (HVAC);
- microbial contamination; and
- respiratory irritants (i.e., vapors, gases, particulates).

The approach to resolving indoor air quality problems in schools and public buildings is generally twofold:

- improving ventilation to dilute and remove environmental pollutants; and
- reducing or eliminating exposure opportunities from materials that may be adversely affecting indoor air quality.

Heating, Ventilation, and Air Conditioning (HVAC)

The HVAC system is a critical element in the maintenance of a healthy school environment. HVAC system designs and system components can vary widely depending on both the purpose and age of the building. The mechanical air supply in schools is typically provided by a unit ventilator (univent), which is an air handling unit that provides fresh air for an individual room. Univents are preferred for use in rooms that require the introduction of a large amount of fresh air, while also providing temperature control.

The univent, which incorporates 2 vents — one to draw fresh air from outdoors and another to draw return air from the interior space — is usually positioned on the exterior wall of a classroom. Typically, units are placed beneath the window system. Air through each of the vents is controlled by louvers in the base of the univent. Fresh and return air are mixed, filtered, heated, and provided to a room through an air diffuser. Some univents are equipped to provide air conditioning during summer months. For univents equipped with cooling capabilities, a drip pan designed to collect condensation from cooling coils is typically provided. Univents are usually controlled through a thermostat located in the classroom. Centralized control through a pneumatic or computerized system can also be employed.

HVAC systems are designed, at a minimum, to provide heat in winter. The State Building Code requires buildings to meet certain minimal standards for ventilation prior to the issuance of a certificate of occupancy by the building inspector. The Massachusetts Building Code requires that each room have a specified minimum ventilation rate of fresh outside air (see Exhibit 4-1) or operable windows (780 CMR 1209.0; BBRS, 1997; BOCA, 1993).

A mechanical supply source such as a univent usually works in conjunction with an exhaust ventilation system, which physically removes air from a room, thereby removing environmental pollutants. Working together, a univent and the exhaust ventilation system create airflow through a room, which increases the comfort of occupants.

Any occupied building contains normally occurring environmental pollutants. Human bodies contribute water vapor, waste heat, carbon dioxide, and skin cells. Equipment, plants, cleaning products, and school supplies can produce gases, vapors, fumes, or dusts. An adequately operating mechanical ventilation system will dilute, reduce, and remove these normally occurring environmental pollutants. If any part of the ventilation system becomes inoperable, environmental pollutants may build up, increasing occupants' discomfort.

HVAC system failures that cause indoor air quality problems include an inadequate amount of outdoor air, poor distribution of air, inadequate exhaust, contamination due to inadequate cleaning/maintenance, and inability of controls to maintain temperature and humidity within acceptable limits. Component malfunctions, poor placement of a system with respect to room configuration, lack of preventive maintenance, and blockage of vents are just a few of the problems frequently identified during assessments. To examine the ventilation system's effectiveness, measurements for carbon dioxide, temperature, and relative humidity are taken during a general indoor air quality assessment.

Proactive steps that can be taken to ensure proper functioning of HVAC systems include:

- Have equipment checked by appropriate HVAC contractors (preferably prior to the beginning of the school year) and immediately repair any defects.
- Change HVAC filters in any mechanical systems prior to the start of the school year, at the end of the heating season, and more frequently when pollution, dust, or pollen levels are high.
- Make sure that the filter fits flushly into the rack, with no space around the filter frame. If multiple filters are used, ensure that seams between filters are air-tight.
- Ensure that any air-conditioning system drip pans are installed properly to permit complete drainage, and that they are kept free of biologic growth and debris.
- Check all belts and operating mechanical equipment monthly.
- Operate both supply and exhaust ventilation continuously during occupancy periods, to maximize air exchange.
- Keep HVAC equipment in proper balance. Systems must be balanced subsequent to installation and rebalanced every 5 years thereafter to ensure adequate function (SMACNA, 1994).

Carbon Dioxide

Carbon dioxide measurements are a standard method used to gauge the adequacy of ventilation systems within an occupied building. Any occupied building will contain excess carbon dioxide, a product of human respiration. The greater the number of occupants, the greater the amount of carbon dioxide produced.

Carbon dioxide can be a hazard within enclosed areas (known as "confined spaces") where there is no air supply (e.g., manholes, mines, sewer systems), as occupants' breathing gradually consumes available oxygen and increases carbon dioxide levels. This displacement of oxygen makes carbon dioxide a simple asphyxiant. At carbon dioxide levels of 30,000 ppm, severe headaches, diffuse sweating, and labored breathing have been reported. No chronic or acute (short-term) health effects are associated with low-level exposure to carbon dioxide (below 5,000 ppm).

A number of governmental health and industrial safety groups have established carbon dioxide air exposure limits for the indoor environment. The Occupational Safety and Health Administration (OSHA) standard is 5,000 ppm, to which workers may be exposed for 40 hours per week, based on a time-weighted average (OSHA, 1997). The American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE) recommends adjustment of a building's ventilation system at levels above 1,000 ppm (ASHRAE, 1989). Exhibit 4-2 lists carbon dioxide air concentrations and related health effects and standards.

DPH uses a guideline of 800 ppm for publicly-occupied buildings (SMACNA, 1998; Redlich et al., 1997; Rosenstock, 1996; OSHA, 1994; Gold, 1992; Burge & Hoyer, 1990; Norback et al., 1990). A guideline of 600 ppm or less is preferred in schools, due to the fact that the majority of occupants are young and considered a more sensitive population. Several sources indicate that indoor air problems are significantly reduced at 600 ppm or less of carbon dioxide (ACGIH, 1998; Bright et al., 1992; Hill et al., 1992; NIOSH, 1987).

Although carbon dioxide concentration can be used as a measure of HVAC system effectiveness, it is not a gauge for indoor air quality. The indoor environment must also be evaluated for identification and elimination/minimization of point sources of pollutants. Environmental pollutants indoors can often induce symptoms in exposed individuals regardless of the adequacy of the ventilation system. For example, an idling bus outside a building may have minimal effect on carbon dioxide levels yet introduce carbon monoxide, particulates, and odors into the ventilation system (see "School Buses" section in this chapter).

Temperature

HVAC systems also provide heat and, in some cases, cooling. M.G.L. s.113, c.149 requires that adequate heat be provided in all places of employment from October 15 through May 15. The minimum heating guidelines established by the Massachusetts Department of Occupational Safety (DOS) call for schools to maintain indoor temperatures between 66° F and 68° F during that time. DPH recommends that schools maintain indoor air temperatures between 70° F and 78° F. For information about *outdoor* temperature comfort and safety, see the "Weather Safety" section in this chapter as well as the following website:
http://www.idph.state.ia.us/hcci/common/pdf/weatherwatch.pdf.

Humidity

The recommended comfort range for indoor relative humidity is 40% to 60%, but for buildings in New England, periods of much lower relative humidity during winter are often unavoidable. The sensation of dryness and irritation is common in a low-humidity environment. Scrupulous cleaning practices can minimize common indoor air contaminants and their irritant effects, which are exacerbated by low relative humidity. Drinking water during the day can also help ease some symptoms associated with a dry environment, such as throat and sinus irritations. Humidifier use is discouraged, since these devices can harbor mold and other microbes if not maintained in accordance with the manufacturer's recommendations.

Mold

Mold and other microbial growth can have a pronounced negative impact on indoor air quality. At a minimum, the following conditions are necessary to support mold growth in an indoor environment:

- mold spores
- nutrients necessary to support mold proliferation
- adequate temperature
- moisture

Of these conditions, moisture is the only factor that can realistically be controlled to prevent microbial growth in the indoor environment. Microbial agents proliferate in warm, moist environments and often can be found in:

- humidification systems;
- crawl spaces beneath buildings;
- damp carpets and furnishings;
- water-damaged/poorly draining air-conditioning systems;
- poorly maintained ventilation systems; and
- moist areas where organic matter (such as paper, books, or dirt) is present.

Identifying and removing materials colonized by mold, as well as locating the source of moisture, are important first steps toward reducing possible indoor air pollutants. Merely replacing moldy materials without identifying and repairing the moisture source is likely to result in new mold growth. Nonporous materials such as cement, tile, metal, stone, and some hard plastic surfaces can be cleaned with the application of an appropriate antimicrobial agent (0.5% bleach solution) and subsequent cleaning with soap and water.

Porous materials such as paper, cloth, cardboard, ceiling tiles, carpeting, and insulation are more difficult to remediate. EPA and the American Conference of Governmental Industrial Hygienists (ACGIH) recommend drying porous materials with fans and heat within 24 to 48 hours of their becoming wet (U.S. EPA 2001; ACGIH, 1989), or else mold growth may occur. Once this has begun, adequate cleaning is not possible, and affected items should be replaced.

For areas where moisture can be a periodic problem, non-carpet flooring material is recommended. If carpeting is necessary, it should be readily removable (e.g., carpet tiles, throw rugs). (For further information on issues related to carpeting, see the “Carpeting” section). For further information on mold and mold cleanup, consult “Mold Remediation in Schools and Commercial Buildings” (U.S. EPA, 2001), available at http://www.epa.gov/iaq/molds/mold_remediation.html.

Other Microbial Contaminants

Various other microbial contaminants — fungi, bacteria, viruses, and dust mites — can cause allergic or infectious diseases. Some biological contaminants trigger allergic reactions, including hypersensitivity pneumonitis, allergic rhinitis, and some types of asthma. Some transmit infectious illnesses such as influenza, measles, and chickenpox. (See Chapter 8 for more information on infectious disease prevention and containment.) Furthermore, certain molds and mildews can produce toxic substances known as mycotoxins. Symptoms of health problems caused by biological pollutants include sneezing, watery eyes, coughing, shortness of breath, dizziness, lethargy, fever, and digestive problems. As discussed in Chapter 7, asthma is increasingly common in children, and children with asthma are particularly vulnerable to biological contaminants in school.

Nonmicrobial Pollutants

Many sources of nonmicrobial respiratory irritants exist, including building operations (e.g., boiler functions), building equipment components, pests, or various activities of building occupants. (Exhibit 4-3 lists potential sources of indoor air pollutants.) A significant *external* source can be diesel emissions from idling school buses (see “School Buses” section in this chapter).

Carbon Monoxide

The process of combustion can produce a number of pollutants, including carbon monoxide, carbon dioxide, water vapor, and smoke (fine airborne particle material). Of these materials, carbon

monoxide and particulate matter with a diameter of 2.5 micrometers (µm) or less (PM2.5) can produce immediate, acute health effects upon exposure.

Carbon monoxide is a product of incomplete combustion of organic matter (e.g., gasoline, wood, tobacco). *Carbon monoxide should not be present in a typical indoor environment.* If it *is* present, indoor carbon monoxide levels should be less than or equal to outdoor levels.

Several air quality standards have been established to prevent human exposure to carbon monoxide. DPH established a corrective action level concerning carbon monoxide in ice skating rinks that use fossil-fueled ice resurfacing equipment. If an operator of an indoor ice rink measures a carbon monoxide level over 30 ppm (taken 20 minutes after resurfacing within a rink), that operator must take action to reduce carbon monoxide levels (DPH, 1997).

EPA has National Ambient Air Quality Standards (NAAQS) to protect the public health from 6 criteria pollutants, including carbon monoxide and particulate matter (U.S. EPA, 2000). The American Society of Heating, Refrigerating, and Air Conditioning (ASHRAE) recommends that pollutant levels of fresh air introduced to a building not exceed the NAAQS (ASHRAE, 1989). The NAAQS were adopted by reference in the Building Officials & Code Administrators (BOCA) National Mechanical Code of 1993 (BOCA, 1993), which is now an HVAC standard included in the Massachusetts State Building Code (BBRS, 1997). According to the NAAQS, carbon monoxide levels in outdoor air should not exceed 9 ppm in an 8-hour average (U.S. EPA, 2000).

Particulate Matter

Airborne particles can be irritating to the eyes, nose, and throat and can induce asthma symptoms. The NAAQS originally established exposure limits to particulate matter with a diameter of 10 µm or less (PM10). According to the NAAQS, PM10 levels should not exceed 150 micrograms per cubic meter (µg/m^3) in a 24-hour average (U.S. EPA, 2000). These standards were adopted by both ASHRAE and BOCA. Since the issuance of the ASHRAE standard and BOCA Code, EPA proposed a more protective standard for fine airborne particles: This more stringent PM2.5 standard requires that outdoor air particle levels be maintained below 65 µg/m^3 over a 24-hour average (U.S. EPA, 2000). Although both the ASHRAE standard and BOCA Code adopted the PM10 standard for evaluating air quality, the Massachusetts Bureau of Environmental Health Assessment (BEHA) uses the more protective proposed PM2.5 standard for evaluating airborne particulate matter concentrations in the indoor environment.

Indoor air levels of particulates (including PM2.5) may become elevated above outdoor levels as a result of normal school operations. Sources of indoor airborne particulates may include: fan belts in the HVAC system, cafeteria stoves, microwave ovens, photocopiers, fax machines, computer printing devices, vacuum cleaners, and indoor foot traffic. Various activities conducted in wood shop, auto body shop, metal shop (welding), electronics shop (soldering), plumbing shop (pipe sweating), art (kiln, pottery wheels, heated Styrofoam cutting) and general custodial work can all be sources of either dust or fumes (heated particles). Care should be given to properly venting particulate pollutants.

Natural and synthetic particulates can also enter a building from outdoor sources, including idling vehicles (see “School Buses” section), loading area activities, trash receptacles, oil fill stations, exhaust vents, street traffic, and parking lots. As a result, air-intake vents located close to, or downwind from, outdoor sources may cause building-related problems. The outside ambient air, particularly in urban areas, may at times warrant treatment before it is delivered to occupied areas of a school building. If the NAAQS are exceeded indoors due to excessive outdoor contamination, ASHRAE recommends taking measures to reduce pollutant concentrations to below the NAAQS.

One common method used to decrease aerosolized particulates is the installation of disposable filters with increased dust spot efficiency. (Dust spot efficiency refers to a filter's ability to remove particulates of a certain diameter.) Filters that meet ASHRAE's dust spot efficiency standard of 40% (Minimum Efficiency Reporting Value equal to 9) are sufficient to reduce many airborne particulates (Thornburg, 2000; MidAtlantic Environmental Hygiene Resource Center (MEHRC), 1997; ASHRAE, 1992). However, increasing filtration can reduce airflow by increasing resistance, thus reducing the efficiency of univents. Prior to any increase in filtration, each univent should be evaluated by a ventilation engineer to determine whether it can maintain function with more-efficient filters.

Volatile Organic Compounds (VOCs)

Volatile organic compounds (VOCs) are gases emitted by a wide array of products numbering in the thousands (U.S. EPA, 2006). Some of these chemicals may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to 10 times higher) than outdoors. Common sources of VOCs in schools include building materials, furniture, carpets, paints, pesticides, cleaning agents, dry-erase markers, rubber cement, permanent markers, liquid correction fluid, duplicating devices, aerosol containers, and plug-in air fresheners. Certain activities conducted in science laboratories, industrial/vocational shops, art and craft rooms, and photo labs can also produce VOCs. Particular care should be taken to ventilate these areas properly.

No standards have been set for VOCs in non-industrial settings. However, OSHA has defined formaldehyde, a specific VOC, as a carcinogen in those sites it regulates and has adopted a Permissible Exposure Level (PEL) of 0.75 ppm and an action level of 0.5 ppm for the substance. Based upon current information, it is advisable to mitigate formaldehyde at levels higher than 0.1 ppm (See the IAQ Coordinator's Guide in the IAQ Tools for Schools Kit, http://www.epa.gov/iaq/schools/tfs/guidee.html).

Hydrogen Sulfide

Sewer odors are frequently reported in schools. The odorous component of sewer gas is hydrogen sulfide, a heavier-than-air gas. The usual source of sewer odor is the plumbing system. Drains are usually designed with traps to prevent sewer odors/gases from entering occupied spaces. When water enters a drain, the trap fills and forms a watertight seal. Without periodic input of water (e.g., every other day), traps can dry and compromise the integrity of the watertight seal, and odors or materials can travel up the drain.

Pest Infestation: Mice, Insects

Classrooms may contain a number of conditions that attract rodents and insects. Use of food or food containers in student art projects, collections of food containers, poor storage of food containers, eating in classrooms, and other activities that leave food residues can attract pests.

Rodent infestation can affect indoor air quality. Mouse urine contains a protein that is a known sensitizer (U.S. EPA, 1992), a material that can produce symptoms in exposed individuals (e.g., running nose, skin rashes). When rodent wastes are present inside HVAC system components, an unfiltered ventilation system can distribute these materials. It is important that proper filters are installed in the HVAC system to reduce this potential problem.

A 3-step approach is necessary to remediate/eliminate rodent infestation:

- Remove rodents.
- Clean waste products from the interior of the building.
- Reduce/eliminate pathways/food sources that attract rodents.

Note: Removal of rodents, even after cleaning, may not provide immediate relief, since allergens can linger for several months afterward (Burge, 1995). Once the infestation is eliminated, a combination of cleaning and increased ventilation and filtration should serve to reduce rodent-associated allergens.

Effective November 1, 2001, Massachusetts law requires use of the principles of integrated pest management (IPM) to remove pests in public buildings (Mass Act, 2000). A copy of the IPM manual can be obtained from the Massachusetts Department of Food and Agriculture (MDFA) at http://www.state.ma.us/dfa/pesticides/publications/IPM_kit_for_bldg_mgrs.pdf.

The law discourages pesticide use, since pesticides can be sources of eye, nose, and throat irritation. To use pesticides in a school, waivers for emergency application must be obtained from the local health department. Before resorting to using pesticides as a means of eliminating pests from school buildings, the following steps should be taken to reduce or eliminate pathways/food sources:

- Avoid using food products in student artwork.
- Rinse recycled food containers, and store them in sealed receptacles to prevent rodent access.
- Remove nonfood items that rodents are consuming.
- Store foods in tight-fitting containers.
- Avoid eating at workstations. In areas where food is consumed, vacuum periodically to remove crumbs.
- Remove crumbs and other food residues from ovens, toasters, toaster ovens, microwave ovens, coffee pots, and other food preparation equipment on a regular basis.
- Examine and seal holes in rooms and exterior walls. Holes as small as ¼" are sufficient for rodents to enter. If doors do not seal at the bottom, install a weather strip as a barrier. Reduce harborages (e.g., cardboard boxes) where rodents may reside (MDFA, 1996).

Pest Infestation: Birds Roosting Inside the Building Structure

The roosting of birds within a school building is a concern because exposure to bird wastes can cause disease (see also "Animals in School" section, next), including diseases of the respiratory tract, hypersensitivity pneumonitis, and psittacosis (bird fancier's disease). Certain molds associated with bird wastes are of concern for immunocompromised individuals, who have an increased risk of health impacts following exposure. These impacts may also occur in healthy individuals.

Cleanup methods depend on the amount of waste and the types of materials contaminated. Accumulated bird wastes may require the services of a professional cleaning contractor. In less severe cases, contaminated nonporous materials may be cleaned with a disinfectant solution of sodium hypochlorite (CDC, 1998). Porous materials contaminated with bird waste should be examined by a professional restoration contractor, who can determine whether the material is salvageable. Where a porous material has been colonized with bird waste, it is recommended that the material be discarded (ACGIH, 1989).

The protection of both the cleaner and other occupants present in the building must be considered as part of the overall remedial plan. Where cleaning solutions are used, the cleaner must be trained in the use of personal protective methods and equipment. Proper training and practices must be adopted to prevent exposure to cleaning chemicals as well as spread of disease. In addition, because the cleaning process may result in aerosolization of particulates that can spread to occupied areas via air currents or ventilation systems, the cleaner should employ the methods

listed in the SMACNA Guidelines for Containment of Renovation in Occupied Buildings (SMACNA, 1995).

Animals in School

Animals in schools, whether kept in classrooms as pets or brought for a short time as part of an educational presentation, pose risks of allergic reactions, disease transmission, and bites. Because of these risks, DPH discourages keeping animals in schools.

All warm-blooded animals can cause allergic reactions. Certain individuals, in particular those with asthma, may be allergic to animal fur, dander, body fluids, or feces. Furthermore, individuals can become sensitized (made allergic) by repeated exposure to animal allergens (U. S. EPA, 2000). Allergen particles become airborne and accumulate in carpets, upholstery, and fabrics and lurk on books, desks, and walls. When inhaled into the nose and lungs, they can cause a range of allergies and illnesses such as allergic rhinitis, asthma, hypersensitivity pneumonitis, and chronic sinus and ear infections. In the eyes, they can result in conjunctivitis; on the skin, they can cause itchy rashes, eczema, and hives (Goldberg, 2005).

Allergen removal does not immediately stop allergy problems because allergen particles can be carried through a central ventilating system, contaminate an entire school building, and persist for months of routine cleaning. Steam cleaning and vacuuming with a HEPA-filter-enhanced vacuum cleaner may reduce, but not totally eliminate, allergens. Molds, mildews, bacteria, and insects can also result if cages or other habitats are not cleaned properly and frequently (Goldberg, 2005).

The serious issue of exposure to rabies and other zoonotic diseases (those transmitted from animals to people) in school classrooms is addressed in Chapter 8. Complete recommendations for schools are available on the DPH website at http://www.mass.gov/dph/cdc/epii/rabies/schoolprotocol.htm. Some of the most common animal hazards are summarized below.

- **Baby chicks and ducks** pose high risk of salmonellosis and campylobacteriosis, and transmission of these diseases from chicks and ducklings to children is well documented.
  Recommendation: These animals are inappropriate for schools.
- **Parrots, parakeets, budgies, and cockatiels** can carry psittacosis, a bacterial disease that can cause fever, chills, rash, and pneumonia.
  Recommendation: Children should not handle these birds.
- **Reptiles (including nonpoisonous snakes, lizards, and iguanas) and amphibians** may intermittently shed *Salmonella,* and negative cultures will not guarantee that the animals are not infected.
  Recommendation: Special handling precautions are necessary, and handling by young children is not recommended.
- **Wild mammals** pose a risk for rabies.
  Recommendation: These animals should never be brought into a school.

Schools can take the following measures to protect occupants from these hazards:

- Discourage the practice of keeping animals in school.
- Use alternatives to animals, when possible, for educational activities.
- Before bringing any animals into school, ask parents about allergies.
- Consult with school nurse about student allergies or sensitivities (privacy laws may limit the information that health officials can disclose).
- Locate sensitive students away from animals and habitats.
- If possible, have all animals checked for disease by a licensed veterinarian prior to introducing them into a classroom.

- Document a current rabies vaccination by a licensed veterinarian for all dogs, cats, and ferrets brought onto the school campus for instructional purposes.
- Clean cages and habitats frequently and thoroughly.
- Locate animals away from ventilation system vents to avoid circulating allergens throughout the room or building.
- Keep animals in cages as much as possible; do not allow them to roam.
- Instruct students on safe and proper handling procedures.
- Stress the importance of avoiding hand-to-mouth/eyes/nose contact until hands are thoroughly washed.
- Make sure that students who assist with pet cleaning and maintenance, or who touch visiting animals, wash their hands thoroughly after all contact with animals and animal environments.
- Instruct teachers and other staff to follow proper handwashing procedures.
- If students "foster" animals during school vacations, caution them to keep these class pets indoors to avoid the possibility of contact with wildlife and rabies.

Latex

Latex allergy in hypersensitive individuals, such as those with spina bifida, cerebral palsy, asthma, eczema, or food allergies, is well documented (SBAA, 2001). Others can also be affected. Allergies to natural rubber latex (NRL) have become a serious problem for a growing number of people. Exposure to any product containing latex can cause symptoms including hives, sneezing, asthma, and even life-threatening anaphylactic shock. Creating awareness through education is essential in preventing latex exposure for sensitized individuals. The only treatment to date is avoidance. It is recommended that the use of materials containing latex be limited in buildings to reduce the likelihood of symptoms in sensitive individuals (NIOSH, 1998; NIOSH, 1997).

Latex can be found in classroom supplies (e.g., erasers, rubber bands, science lab equipment) and in gymnasium equipment (e.g., rubber mats, flooring, balls, racquet handles). Rubber gloves used by janitors to clean hallways, classrooms, or school bathrooms can leave a residue on surfaces or release NRL proteins into the air. School bus tires also can release high levels of airborne NRL particles, especially during heavy traffic.

To combat NRL exposure, school personnel should be aware of the risks that latex poses to sensitized students and take appropriate precautions. Cafeteria workers should replace latex gloves, (which can contaminate food and spread NRL allergies to others) with good hygiene such as handwashing. School nurses should know that wearing powdered latex gloves to treat nonallergic students can release NRL proteins into the air and cause respiratory distress in latex-sensitive students. To reduce latex exposure in schools, use of nonlatex examination gloves is recommended.

Other less obvious sources of latex include: rubber balloons brought into classrooms, auditoriums, or gymnasiums for celebrations, and tennis balls, which are often sliced open and placed on chair legs to reduce noise from sliding chairs. This use of tennis balls abrades the natural rubber latex bladder, introducing latex dust into the school environment. Other materials in tennis balls are also sources of respiratory irritants, including fibers and volatile organic compounds.

A list of latex-free school products is available on the American Latex Allergy Association website, http://www.latexallergyresources.org.

Upholstered Furniture

When human skin comes into contact with upholstered furniture, oils, perspiration, hair, and skin cells are left behind. Dust mites in the upholstery feed upon human skin cells and excrete waste products that contain allergens. These mites tend to proliferate when relative humidity levels exceed 60% (U.S. EPA, 1992).

To remove dust mites and other allergens and pollutants, frequent vacuuming of upholstered furniture is recommended (Berry, 1994), as is annual professional cleaning. If the environment is excessively dusty due to outdoor conditions or indoor activities such as renovations, cleaning should be done more often, for example, every 6 months (IICR, 2000). Elevated outdoor levels of airborne particulates can result in increased levels of indoor particulates, since particulates can enter the building through open windows, doors, and filter bypass.

Carpeting

There is scientific controversy regarding the impact of carpets on indoor air quality. The EPA is concerned about emissions of volatile organic compounds (VOCs) from new carpets and related installation materials such as carpet cushion and adhesives, but others, including manufacturers, are not so sure. Until the debate is resolved, schools purchasing and installing new carpeting should:

- Request carpet products that carry the carpet industry's voluntary "green label," which tells the consumer that the carpet type has been tested and has passed voluntary emissions criteria.
- Ask the retailer/installer to unroll and air out the carpet in a well-ventilated area before installation.
- Require low-emission adhesives, if adhesives are necessary.
- Open doors and windows to increase the amount of fresh air into the building. During and after installation, use window fans and room air conditioners to exhaust fumes to the exterior.
- Vacate the building during carpet installation and for several hours afterward.

Carpets have a finite life expectancy (10+ years in general) that can be rapidly reduced when it is not properly maintained. Schools should consider replacing carpet that is older than the recommended lifetime specified by the manufacturer.

The following conditions will shorten the useful lifetime of a carpet:

- not vacuuming carpets on a daily basis in high-traffic areas;
- not vacuuming carpets on a weekly basis in non-high-traffic areas;
- not cleaning carpets in a manner consistent with manufacturer's recommendations;
- not drying carpeting within 24 hours after moistening;
- installing carpets on or near building surfaces that are prone to chronic dampness, accumulation of condensation during humid weather, or subject to repeated moistening from water leaks;
- installing an improper grade of carpet in high-traffic areas; and
- installing carpeting in kitchens, cafeterias, or science labs, where contamination by food or chemicals is likely.

The decision to install carpeting in a school should be made only after careful consideration of many factors, including cleaning, mold formation, toxic fumes, and chemical emissions at installation. If a school department cannot commit to maintaining installed carpet in a manner consistent with the manufacturer's recommendations for the carpet's normal lifetime, then another floor covering should be considered**. If carpeting is used, it should be made of cotton or**

polypropylene. It should not be made of nylon, orlon, wool, or silk, which produce toxic fumes when ignited.

Routine cleaning of carpets, including daily vacuuming, is essential. A vacuum cleaner equipped with a HEPA filter is recommended. Carpet should be cleaned with a high-temperature, water-extraction cleaning process. After cleaning, carpets should be dried with floor fans to prevent microbial growth. Shampooing of carpets without water extraction or drying is not recommended.

EPA and ACGIH recommend drying porous materials with fans and heating within 24 to 48 hours of their becoming wet (U.S. EPA, 2001; ACGIH, 1989). Tiling, rather than carpeting, should be considered in areas that are below grade or where the floor is slab on soil.

Where carpet is installed over asbestos-containing floor tiles, removal of the carpet will become an asbestos abatement project that requires compliance with all relevant federal and state asbestos laws and regulations. For this reason, school departments may be reluctant to remove carpeting due to the associated cost.

Photocopiers, Mimeograph Equipment, and Other Machines

Photocopiers, particularly those that are older and heavily used, produce volatile organic compounds (VOCs) and ozone, which are respiratory irritants (Schmidt Etkin, 1992). If possible, it is best to locate copying equipment in rooms with ventilation equipment above or immediately adjacent that exhausts the air directly to the outside. At a minimum, copying equipment should be in large and well-ventilated areas. Ventilation is especially important when workers share space with the copying machines. It is also recommended that the glass plate cover be closed while copying.

Mimeograph duplicating fluid contains methanol, a volatile organic compound that readily evaporates at room temperature; can irritate eyes, nose, and throat; and is highly flammable.

Refilling and disposal of toner in dry copying machines should be performed carefully. Warnings on supply containers for photocopy, mimeograph, and duplication machines should be read and followed.

SCHOOL BUSES

More than 750,000 children across Massachusetts ride buses to and from school every day. School buses are a safe mode of transportation, and their diesel engines are both durable and economical. However, scientific studies indicate that high levels of exposure to exhaust from diesel vehicles over time can cause cancer and other serious health problems. The Massachusetts Department of Environmental Protection (DEP) is working with school districts across the state to promote practical and effective steps toward reducing children’s exposure to diesel pollutants.

Health Effects of Diesel Pollution

Exhaust from school buses and other diesel-powered vehicles contains particulate matter, including fine particles that can penetrate deep into the lungs and even enter the bloodstream, posing serious health problems for children and those with respiratory ailments. Fine particles can cause lung damage, aggravate respiratory conditions such as asthma and bronchitis, increase heart disease, lead to cancer, and even result in premature death.

Children and drivers can be exposed to diesel fumes when getting on and off school buses and even while on board when engines are running. Diesel exhaust from idling buses accumulates in and around schoolyards, and if air intake vents are located near bus stops, even the air inside school buildings can become polluted and pose health risks to children and teachers during the day.

Massachusetts Anti-Idling Law

Massachusetts law (M.G.L. c.90, s.16A) and DEP regulations (310 CMR 7.11(1)(b)) limit vehicle idling to no more than 5 minutes, with exceptions for vehicles being serviced, delivery vehicles that need to keep their engines running (e.g., to power refrigerators), and vehicles that need to run their engines to operate accessories such as power lifts. Local boards of health, local police, and state and federal officials are authorized to enforce the state anti-idling law. DEP enforces its own regulations.

DEP recommends that school districts take certain steps to reduce diesel pollution from school buses and to ensure that bus drivers are complying with the state anti-idling law and DEP regulations:

- Limit school bus idling time during pre-trip safety “circle checks.”
- Direct drivers to turn off buses upon arrival in the schoolyard.
- Provide a space inside the school where drivers who arrive early can wait, particularly during the winter. Post “idling limit” signs wherever school buses park.
- Retrofit existing buses with pollution controls, and purchase new buses with cleaner-burning engines.

For additional information and resources, see http://www.mass.gov/dep. Particularly useful are the pages for the School Bus Idling Reduction Initiative (http://www.mass.gov/dep/bwp/daqc/sbusbmps.htm) and Best Management Practices For Reducing Diesel Pollution at Schools (http://www.mass.gov/dep/air/community/sbusbmps.htm). Helpful resources, including a sample school “no-idling” policy, are also available from the New England Asthma Regional Council website at http://www.asthmaregionalcouncil.org/about/_BusToolkit.htm.

UNDERGROUND FUEL STORAGE TANKS

Underground storage tanks may become an environmental concern, for instance, if they rust and leak their contents into the ground. Many school districts that operate school buses own underground storage tanks for gasoline. Also, school buildings, like many other large spaces, require large boilers to heat their facilities. The heating oil is typically stored in underground storage tanks and tends to be a lower grade (number 6) that, when heated, is very viscous. Therefore, any leak or spill can create a serious problem and become an environmental hazard.

The safety of these storage tanks is dependent on their age and condition. The local fire department is responsible for setting up and dismantling storage tanks (CMR 527, s.9) and should be contacted if a school district is in doubt about the safety of its tank. Many municipalities have regulations that require periodic testing. DEP may be called if tanks become an environmental problem.

ASBESTOS

Asbestos is a fibrous mineral used in thousands of products, particularly heat and electrical insulation, floor and ceiling tile, cement pipe, corrugated-paper pipe wrap, fireproofing, and other insulation. EPA estimates that there are asbestos-containing materials in many of the nation's approximately 107,000 primary and secondary schools.

Intact and undisturbed asbestos materials generally do not pose a health risk. However, asbestos that is damaged or that has deteriorated over time (cracking, tearing, or crumbling) may release harmful fibers that can cause cancer or lung disease if inhaled. These diseases do not develop immediately after inhalation; it may be 20 years or more before symptoms become apparent. The more fibers a person inhales, the greater the risk of developing an asbestos-related disease. Because asbestos fibers are so small and light, they can remain in the air for many hours, increasing the danger of inhalation.

In 1986, Congress passed the Asbestos Hazard Emergency Response Act (AHERA) to protect schoolchildren and school employees from exposure to asbestos in school buildings. AHERA requires public school districts and private schools to inspect all school buildings for asbestos, to develop plans to manage asbestos in schools, and to carry out the rules in a timely fashion. Schools are required to inform parents and staff about the presence of asbestos. A copy of the survey report must be available in each school, identifying the location of asbestos-containing materials.

A guidance document for school districts and schools, containing information on compliance with AHERA requirements, is available online at http://www.epa.gov/asbestos/aherarequirements.pdf. Information may also be obtained at the EPA Asbestos in Schools website, http://www.epa.gov/asbestos/asbestos_in_schools.html, or by calling the EPA Asbestos Line, 800-471-7127.

In addition to AHERA requirements, schools are also required to abide by the National Emission Standard for Hazardous Air Pollutants (NESHAP) under Section 112 of the Clean Air Act (CAA). In 1971, EPA listed asbestos as a hazardous air pollutant under the NESHAP provision of the CAA. Subsequently, on April 6, 1973, EPA promulgated an emission standard for asbestos (40 CFR part 61, subpart M). The asbestos NESHAP has been amended several times, most recently in 1990. The NESHAP regulates (1) asbestos mills, (2) asbestos product manufacturing, (3) building demolition and renovation (excluding residential buildings that have 4 or fewer dwelling units), (4) fabricating, (5) insulating materials, (6) waste disposal, and (7) the conversion of asbestos into nonhazardous materials (vitrification). The rule establishes work practice standards and sets the emission limit at "no visible emissions."

Local education agencies (LEAs) (including those in control of charter schools) that perform renovations or demolitions are subject to the requirements under the asbestos NESHAP. For renovations, schools are required to submit a notice of renovation to the relevant EPA regional office (or delegated state office) at least 10 days prior to starting, if the amount of regulated asbestos-containing materials exceeds established limits. For school demolitions, all LEAs must submit notices of demolition to the same office at least 10 days prior to starting, regardless of asbestos presence (40 CFR part 61, subpart M).

EPA sets standards for state accreditation of personnel involved in asbestos management or abatement school buildings. Abatement is reduction of the degree or intensity of, or elimination of, asbestos. Inspectors must be certified by the Massachusetts Department of Labor and Industry. All personnel who remove, repair, or dispose of asbestos-containing materials must be licensed by the

state and removal must involve “adequately wet” techniques and personal protective equipment. Asbestos that already is or might become friable (meaning that it can be crumbled or pulverized to a powder through hand pressure) during a renovation or a demolition must be removed prior to starting, if present in amounts specified in the asbestos NESHAP. Buildings that are in danger of imminent collapse may not require asbestos removal prior to demolition.

For additional information on the requirements under the asbestos NESHAP, schools should contact the EPA Regional Asbestos Coordinator listed on the EPA asbestos website at http://www.epa.gov/asbestos/regioncontact.html.

RADON

Radon is a naturally occurring radioactive gas generated by the decay of uranium in the earth. The EPA ranks indoor radon among today’s most serious environmental health problems. It is the second leading cause of lung cancer in the United States, causing an estimated 14,000 deaths a year. The home is most likely to be the greatest source of exposure, but time spent at school in rooms with elevated radon concentrations can result in significant exposure.

EPA’s National School Radon Survey showed that nearly 1 in 5 U.S. schools had 1 or more rooms with radon levels over 4 picocuries per liter. While the results of this survey are not statistically significant at the state or local level, this information, along with past surveys of radon levels in Massachusetts homes, underscores the need to test schools. Because radon is colorless, odorless, and tasteless, the only way to determine its presence is to test for it; in April 1989, EPA urged all schools to do so.

Radon Testing

Because radon levels have been found to vary significantly from school to school and room to room within schools, all frequently occupied rooms in contact with the ground should be tested. Frequently occupied rooms include classrooms, offices, laboratories, cafeterias, libraries, and gymnasiums. Testing of halls and stairways, storage closets, rest rooms, and the like is not considered necessary for initial screening but might be important for diagnostic purposes if elevated levels are found in rooms. For large rooms such as gymnasiums, or in open-plan or pod-design schools, 1 detector should be deployed for each 2,000 square feet of floor area.

For initial screening measurements, passive radon detectors are typically used. They may be generally grouped as long-term (more than 90 days) or short-term (2–5 days). DPH recommends the latter. The actual analysis of the detectors should be conducted by a laboratory that is recommended by the EPA radon contact in your area (see http://www.epa.gov/iaq/states/epa_region1.html) or by contacting the regional offices of DPH to receive advice on testing strategies and assistance in locating laboratories. The two EPA-approved national radon proficiency programs, The National Radon Safety Board (NRSB) and The National Environmental Health Association's (NEHA) National Radon Proficiency Program (NRPP) are also excellent resources for information on radon testing. The websites of these programs are located in the Resources section of this chapter.

Testing should be conducted during colder months (October through March), on weekdays when school is in session and HVAC systems are operating normally. For short-term tests, closed building conditions must be maintained for 12 hours before the start of and during the testing period. Closed building conditions means that all doors and windows are kept closed except for normal entry and exit.

Some schools/districts hire a radon measurement firm to conduct the entire testing program including sample site selection, deployment and retrieval, data collection, and interpretation. Such firms and individuals should be credentialed. Other schools have supplemented the services of a credentialed laboratory with school personnel placing and retrieving the detectors. In such cases, the laboratory should assist the school personnel with site selection, quality assurance, and overall supervision of the testing process.

If elevated radon concentrations are found, the school should call the regional office of DPH for advice on further investigation and/or mitigation strategies. Several schools have benefited from this consultation, enabling them to reduce elevated radon levels at minimal cost, using school maintenance personnel.

“RIGHT-TO-KNOW” AND ENVIRONMENTAL HAZARDS

Under the Massachusetts Right-to-Know Law (RTK) (M.G.L. c.111F), the Massachusetts Substance List (MSL) contains approximately 2,300 individual substances identified as toxic. The main goal of the health and safety law is to prevent occupational disease by informing people about the hazards of exposure to toxic substances. Any material sold or used in the school that has any of its ingredients covered by the applicable law is regulated material. Anyone who works in a workplace that contains a regulated material is entitled to all the protections of the law. RTK activities for DPH are coordinated through the Emergency Response/Right-to-Know Program of the Center for Environmental Health (617-624-5757).

Under the law, individuals are entitled to receive information about the toxic substances that are used or stored in the school. There are 3 sources of information available under both laws: (1) the Material Safety Data Sheet (MSDS), a technical fact sheet that describes the health effects and safe uses of the toxic products on the job, (2) container labels, and (3) employee training.

The MSDS is the most important because it provides health and safety information and is the basis for training employees on the hazards of workplace exposures and safe handling practices for those substances. It has 8 sections: Product Identity, Hazardous Ingredients, Physical Data, Fire and Explosion Data, Reactivity Data, Health Hazard Data, Precautions for Handling, and Control Measures. Those persons who learn chemical identities, health effects, and protection from dangers listed on an MSDS are in a better position to correct or prevent potential hazards.

MSDSs are usually shipped with the container of the hazardous materials. Generally, whoever receives that container is the custodian of the MSDS. Sometimes MSDSs are sent to the purchasing agent with the invoice. Because DPH has a mandate under the RTK law to provide toxicology information to the public, a school that houses hazardous materials subject to RTK is obligated to send copies of the MSDSs to the Department of Environmental Protection regional office. An employer is required to provide employees or their representatives access to MSDSs within 4 working days of a request. A treating physician of an employee may receive a copy of an MSDS after signing a confidentiality agreement. A community resident may receive a copy of an MSDS by petitioning the community’s municipal coordinator.

PESTICIDES

Under current Massachusetts law (the Children and Families Protection Act), the principles of integrated pest management (IPM) must be used to remove pests in state buildings (Mass Act,

2000). The Children and Families Protection Act requires schools, child care centers, and school-age child care programs to create and submit indoor and outdoor IPM plans for their facilities. The Pesticide Bureau maintains a website for schools to create and submit their IPM plans, at http://massnrc.org/ipm/index.html. IPM plans may be viewed online by the general public and school staff, and schools are able to instantly update their IPM plans online at any time.

The Pesticide Bureau at the Department of Agricultural Resources investigates violations of the Children and Families Protection Act and pesticide misuse. The Bureau can also provide information on health risks of pesticides, pesticide licensing, IPM, and the proper and effective use of pesticides. Programs within DPH's Center for Environmental Health also provide diversified consultation with regard to toxic exposures arising from consumer products and pesticides used in the indoor environment.

LABORATORY, SHOP, AND ART STUDIO PRODUCT SAFETY

Some supplies and materials used in laboratories, shops, and art studios contain hazardous substances. It is important for the instructor and students to be aware of these toxins and to know the precautions to take when handling, disposing, and recycling these materials.

Some recommendations for maintaining safety in lab, shop, and art studio areas are:

- Use nontoxic products, such as biodegradable and low-phosphate products, when available.
- Read the product label. Substances that are poisonous, corrosive, or flammable should be handled with care.
- Avoid storing chemically incompatible materials together.
- Finish using all products prior to disposing, or donate the products. Complete and proper use of a product is the best disposal method.
- Wrap in newspaper all containers with warnings against skin contact. Dispose of product according to regulations.
- Recycle wastes. For example, take used or contaminated motor oil to an automotive service center.
- Use large amounts of water to dilute products that can be poured down a drain. Dispose of each product separately.
- *Do not* remove product labels, dispose of any products by pouring them on the ground, or refill empty containers, even with the same material, unless the label recommends it. Once a container is empty, dispose of it properly.
- Be familiar with hazardous waste disposal practices. Improperly stored and outdated chemicals are often found in many chemistry laboratories. Chemicals must be disposed of appropriately by licensed hazardous waste firms.

For specific information about hazards associated with paint, ceramics, welding, soldering, woodworking, photography, printmaking, and solvent products, refer to the "Right-to-Know and Environmental Hazards" section and to the Resources list at the end of this chapter.

Laboratory Safety

School science laboratories present complex and unique combinations of hazards that require particular attention. A comprehensive safety program should be developed to manage hazards, including exposure to hot water, broken glassware, toxics, and fire. Safety rules specific to the activities conducted in each laboratory classroom, including proper attire and the use of personal safety equipment, should be posted and enforced.

Recommended safety measures include:

- Provide adequate ventilation for laboratory activities.
- Keep fume hoods free of storage, and make sure they are routinely inspected and maintained.
- Provide adequate bench space with necessary utilities.
- Ensure proper supervision for class size.
- Order chemicals in quantities no larger than necessary for short-term needs. Expired chemicals can pose significant hazards. For example, ethyl ether, often used to sedate fruit flies in genetic experiments, becomes volatile and highly explosive when it passes its expiration date.
- Store flammable materials in a properly labeled storage cabinet that meets design criteria set forth by the National Fire Protection Association (NFPA, 1996).
- Equip the area with fire extinguishers, fire blankets, drench showers, eyewash stations, and handwashing facilities adequate for the activity conducted.
- Ensure that electrical equipment is properly grounded and inspected regularly.

RENOVATIONS IN AN OCCUPIED BUILDING

Renovation of an occupied building can degrade its indoor air quality. Construction/renovation activities that produce pollutants in a building include, but are not limited to: demolition of building structure or building components such as plumbing, HVAC, or electrical systems; installation of new building components that emit volatile organic compounds; and use of construction equipment powered by gasoline, propane, or diesel fuels. These pollutants can migrate from the renovation area into occupied areas, through openings in temporary enclosure walls or through abandoned ductwork and spaces around utility holes. Exterior work around a building can generate vehicle exhaust, dirt, particulates, and other pollutants that can be drawn inside via open doors, windows, or fresh-air intakes.

DOE regulations require the following of any school construction project receiving state funding:

> "Eligible Applicants shall implement containment procedures for dusts, gases, fumes, and other pollutants created during construction of an Approved Project if the building is occupied by students, teachers or school department staff while such renovation and construction is occurring. Such containment procedures shall be consistent with the "IAQ Guidelines for Occupied Buildings Under Construction" published by the Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA), in effect at time of project approval. All bids and proposals received for an Approved Project shall include the cost of planning and execution of containment of construction/renovation pollutants consistent with such SMACNA guidelines." (963 CMR 2.00, Massachusetts School Building Authority (MSBA), 2006).

The following methods can prevent or eliminate renovation pollutant impacts on occupied areas:

- Alert faculty about construction activities conducted near their classrooms. In certain cases, it may be necessary to deactivate univents or close windows of classrooms adjacent to construction activities to prevent unfiltered air and vehicle exhaust from entering the building.
- Establish communications among all parties involved with building renovations. Develop a forum for occupants to express concerns about renovations, as well as a program to resolve indoor air quality (IAQ) issues.

- Develop a notification system by which building occupants can report odors and/or dust problems to the building administrator. Relay these concerns to the contractor in a timely manner for remediation.
- When possible, schedule projects producing large amounts of dust, odors, or emissions during unoccupied or low-occupancy periods.
- Cover dirt/debris piles with tarps, or wet them down, to decrease aerosolization of particulates.
- Disseminate a scheduling itinerary to all affected parties via meetings, newsletters, or weekly bulletins.
- Obtain material safety data sheets (MSDSs) for all construction materials used during renovations, and keep them accessible to all during periods of building operations, as required by the Massachusetts Right-To-Know Act (M.G.L., 1983).
- Consult MSDS for any material applied to the affected area during renovation, including any sealant, carpet adhesive, tile mastic, flooring, or roofing materials. Provide proper ventilation and allow sufficient curing time, per the manufacturer's instructions.
- Use local exhaust ventilation and isolation techniques to control renovation pollutants, and take precautions to keep these materials from being drawn into the building's HVAC system. Each system's design must be assessed to determine how it may be impacted by renovation activities. Specific HVAC protection requirements pertain to the return, central filtration, and supply components of the ventilation system. This may entail shutting down systems (when possible) during periods of heavy construction and demolition, ensuring that systems are isolated from contaminated environments, sealing ventilation openings with plastic, and utilizing filters with a higher dust spot efficiency where needed (SMACNA, 1995).
- Seal utility holes, spaces in roof decking, temporary walls, and places where ceiling tiles are missing to prevent renovation pollutant migration.
- Seal construction barriers with polyethylene plastic and duct tape to create a secondary barrier.
- Relocate susceptible persons and those with preexisting medical conditions (e.g., hypersensitivity, asthma) away from renovation areas, when possible.
- Implement prudent housekeeping and work site practices, including constructing barriers, sealing off areas, and temporarily relocating furniture and supplies. To control dust, use a high efficiency particulate air filter (HEPA) equipped vacuum cleaner in conjunction with wet wiping of all surfaces.
- Change univent filters more regularly in areas impacted by renovation activities.
- Work with the school's construction contractor and consultant to monitor indoor air quality.
- Request that the school nurse be alert to any increase in visit rates for complaints of respiratory illness.

SCHOOL MAINTENANCE AND SANITATION

In the school environment, proper sanitation consists of maintaining the building free of conditions that could lead to transmission of disease. Each area of the school has its own particular cleaning and disinfectant needs. DPH strongly recommends that each school develop a written policy and a plan detailing the cleaning and sanitizing requirements of each area in the facility. Responsibility for carrying out the plan should be assigned to a specific person.

Schools must provide adequate and appropriate maintenance equipment and cleaning supplies for each task. For example, a vacuum cleaner should have adequate capacity, be powerful enough to clean rugs, and be equipped with HEPA filters. Equipment must be kept clean and in good working

condition and be safely stored. All cleaning supplies and toxic materials must be kept in containers that are properly labeled with their contents. In food areas, any cleaners, sanitizers, and toxic materials must be stored away from food items.

The least expensive, though highly effective, sanitizing agent is chlorine bleach. Bleach used to sanitize food contact surfaces, equipment, and utensils must be EPA-approved for food service sanitation, with specific labeling for food establishment use and an EPA registration number. Exhibit 4-4 presents the appropriate ratio of bleach to water for various surfaces and facilities in schools.

Handwashing

Handwashing is the first line of defense against infectious disease and is one of the universal precautions. (See Chapter 8 for more information on infectious disease prevention and control.) Numerous studies have shown that unwashed hands are the primary carriers of infection. A person should always wash his or her hands:

- before eating or handling food;
- before feeding a child;
- after toileting;
- after handling body secretions (mucus, vomit, etc.);
- after cleaning; and
- before and after giving medication.

The 5 most important concepts to remember about handwashing are:

1. Use running water that drains out, not a stoppered sink or container.
2. Use soap, preferably liquid.
3. Use friction (rubbing the hands together).
4. Turn off the faucet with a paper towel to prevent recontamination of clean hands by a dirty faucet.
5. Dry hands with single-use towels, an air dryer, or fabric roll towels from a dispenser, *not* common towels.

It is a good idea to post a handwashing poster above every sink in the school. Regulations require posting of the statement “WASH YOUR HANDS BEFORE GOING BACK TO WORK” in every food service area and every employee toilet for food service workers. Posters are available from DPH.

Disposable Gloves

Disposable gloves provide a protective barrier against germs that cause infections (see earlier section of this chapter on Latex for a discussion concerning latex gloves). They should be provided to any staff persons who may handle body fluids or feces. Gloves should be properly disposed of after use in the regular waste receptacle. Gloves are *not* a substitute for handwashing. Hands and other skin surfaces should be washed immediately and thoroughly if contaminated with body fluids.

Storage and Disposal of Garbage

The school must be kept free of accumulated garbage. School staff should adhere to the following guidelines:

- Store garbage in containers that are waterproof and rodent-proof, with tight-fitting lids.
- Use plastic bags to line covered containers.
- Remove garbage daily from classrooms and other areas of the school.
- Put trash out for collection, unless prohibited by the local board of health.
- Wherever possible, recycle materials.

Recycling

Recycling reduces the need for new landfills and combustors. It saves energy, supplies valuable raw materials to industry, creates jobs, stimulates the development of greener technologies, and conserves resources for our children's future. Recycling also helps reduce greenhouse gas emissions that affect global climate. In recent years, a garbage crisis has attracted the attention of the nation and the world, highlighting the need for more concerted recycling efforts. In 2003, U.S. residents, businesses, and institutions produced more than 236 million of municipal solid waste, or approximately 4.5 pounds of waste per person per day.

Schools can take a leadership role in recycling. School recycling programs can help students learn to respect the environment, become aware of their impact on it, and develop positive attitudes and behaviors. The Massachusetts Environmental Protection Department, Office of Solid Waste, has developed a resource to help schools get started: the *Manual for Implementing School Recycling Programs,* available online at http://www.mass.gov/dep/recycle/schools.htm. (See also the Resources section of this chapter.)

Disposal of Medical Waste

Schools have a responsibility for disposing of infectious or physically dangerous medical waste generated in school settings. Applicable state regulations (105 CMR 480.000) are in the process of revision because of changes in federal guidelines and specific issues in Massachusetts. Further guidance will be available on the School Health website (http://www.mass.gov/dph/fch/schoolhealth/index.htm) when revised regulations are promulgated.

SCHOOL FOOD SERVICE

Food service operations in the schools of the Commonwealth must be carried out in a manner that will prevent the occurrence of foodborne illness, a major public health problem. The incidence of such illness can be reduced by following basic principles of food protection — use of wholesome foods, suitable equipment, and sanitary food practices. Food may be prepared at the school or offsite. All food operations must be conducted in accordance with 105 CMR 590.000, viewable online at http://www.mass.gov/dph/fpp/fc00.pdf#search='105%20CMR%20590.000.

Many foods are ideal for growing microorganisms, including pathogenic bacteria. Contamination with pathogenic bacteria, combined with mishandling or inadequate temperature control, can result in infectious levels of bacteria or toxin production and subsequent foodborne illness outbreaks. Food sanitation is particularly important in a school food service program, where food is prepared for a consumption by a large number of students.

Guidelines for Food Service Personnel

To avoid contaminating food they handle, food service personnel must be in good physical health, be free of symptoms of communicable diseases, and not have skin conditions such as open or infected cuts, burns, or sores. The food service manager should be able to recognize such conditions in staff and exclude them from working in direct contact with food. A person with HIV/AIDS who does not have open or infected cuts, burns, or sores should not be excluded from working in a food service facility.

Food service personnel must have clean hands at all times and should not wear rings. Hands must be washed with soap and hot running water at the following times: before beginning work; after using the toilet, coughing, sneezing, using a handkerchief, or handling any object that may contaminate food; and between other operational functions and the return to food preparation or

handling functions. (See discussion of handwashing protocol in an earlier section of this chapter on School Maintenance and Sanitation.)

Fingers should be kept out of the mouth and away from the hair, face, and nose. Workers must not eat, drink, or use tobacco products in food areas. Plastic gloves are primarily suited for a continual food handling function and must be changed when a worker switches from one operation to another. The use of gloves is not a substitute for handwashing. When food service workers change from a nonfood handling function to a food handling function, or after handling raw foods, they must still wash their hands before using gloves. They must also wear clean clothes and secure their hair with a hairnet, hat, or fastener.

Food Preparation and Storage

Adequate equipment must be provided and maintained to ensure proper temperatures for food during storage, preparation, and service, as well as for the sanitation of dishware, tableware, and utensils. There must be a sufficient number of thermometers to monitor these temperatures constantly, as well as test kits for monitoring the strength of the required sanitizing agents.

If food is transported from one facility to another, adequate holding temperatures must be maintained, with potentially hazardous foods kept below 45° F or above 140° F during storage, transportation, and service. Food and the food establishment should be protected from contamination by insects and rodents through the use of screens and other protective devices.

Assistance with training of food service personnel may be obtained from local boards of health; DPH; and Nutrition, Health, and Safety at DOE.

LIGHTING

Providing adequate interior and exterior school lighting is primarily the responsibility of illuminating engineers and architects. However, the school administrator, classroom teachers, and health staff must understand the basic principles of lighting in order to use available facilities properly and recommend change when needed. The administrator should not permit lighting standards to decline in the interest of cost or energy savings.

While quantity of light is important, extensive research has shown that the *quality* of light is even more significant. To supply suitable light to all working surfaces for efficiency and comfort, the following should be considered:

- Avoid glare by supplying light from many directions rather than from a single source. Prolonged exposure to glare can result in fatigue, eyestrain, and headaches.
- Use room colors and textures that enhance the lighting system's effectiveness and produce positive psychological reactions. "Warm" tones (e.g., peach, pink) are considered best.
- Because different light intensities are needed for different tasks, have a Massachusetts-registered engineer or architect certify lighting's compliance with the code, as required by the fifth edition of the Massachusetts State Building Code (Article 1).
- Keep windows clean and wall and ceiling surfaces well maintained.
- Because light bulbs blacken over time and give off less light, and dirt and dust reduce the reflecting and transmitting qualities of lighting units, implement a system of regular inspection by the local building inspector, preferably with a light meter.

To help determine whether a classroom is appropriately lighted, the following should be addressed:

- Is the room free from sharp shadows?

- Is it possible to exclude sunlight by adjusting shades or blinds?
- Are walls, desktops, and chalkboards free from bright reflections?
- Are all lamps shielded so that bright light does not shine in students' eyes?

WATER SUPPLY

The school district must provide a safe, potable, adequate water supply that is connected to a municipal supply or meets DEP requirements (310 CMR) pertaining to all private wells serving at least 25 users for more than 60 days.

Lead in Drinking Water

Lead is a naturally occurring ingredient in surface and ground waters that are supplied to many millions of Americans for drinking. Although the use of lead in plumbing is now banned, it can still get into drinking water from old water pipes that contain lead. Other sources of lead are lead-based paint and dust, soil contaminated with lead from paint, leaded gasoline, or industrial processes. Nowhere is the lead problem more serious than in the lead belt of the Northeast and the older parts of the Midwest, where EPA reports that lead in drinking water accounts for about 20% of children's lead exposure.

Although drinking water is rarely the sole cause of lead poisoning, it can significantly increase a person's total lead exposure. Lead dissolved in water cannot be seen, tasted, or smelled. The only way to know if it is a problem is to test the water.

Once in the body, lead is very slow to leave the system. It can damage a child's brain and central nervous system, interfering with learning ability and physical growth. Children under the age of 6 are most at risk because their bodies are small and tend to absorb lead quickly. (See Chapter 5 for a discussion of lead blood screening.)

Lead can be reduced in drinking water by running a tap until the water feels cold. No one should drink hot water from the tap because hot water dissolves more lead from pipes. If funds become available, existing problem plumbing should be replaced with non-lead pipes, fixtures, and solder.

Additional guidance and tools to remediate the problem of lead in school drinking water should soon be forthcoming as a result of recent actions by EPA. In 2005, EPA signed a memorandum of understanding with the U.S. Department of Education, CDC, state drinking-water programs, and drinking-water associations that represent water utilities, to promote voluntary efforts to reduce children's lead exposure in schools and child care facilities. The signatories agreed to encourage schools and child care facilities to take steps such as: testing drinking water for lead; disseminating results to parents, students, staff, and other interested stakeholders; and taking appropriate and necessary actions to correct problems. The signatories also agreed to encourage drinking-water utilities to assist schools and child care facilities in their efforts to understand and reduce lead exposure from drinking water.

EPA plans "to integrate water issues into a holistic healthy schools program that provides an overall context for each aspect of providing a safe learning environment for children" and to develop training tools for system owners and operators at schools and child care facilities. The Department of Education and CDC will work with EPA and drinking-water associations and programs to develop and disseminate these materials and tools to schools.

For current information on this initiative, see http://www.epa.gov/safewater/lead/index.html.

PLUMBING

Regulations govern the number of plumbing fixtures (toilets, handwashing sinks, and drinking fountains) that must be in a school (248 CMR 2.10). School buildings must have hot and cold water under pressure, flush toilets, washrooms, and the necessary pipes and fittings to maintain these facilities in good repair. All plumbing fixtures should be designed and maintained to be accessible by the age group being served and by individuals with disabilities.

Toilets and Lavatories

Toilets and washrooms must be available for use at all times and monitored if necessary. Rooms must be unlocked and fully accessible. Sound public health practice dictates that soap (preferably liquid), paper towels, and toilet paper be provided.

According to 248 CMR 2.10, toilets must be located in separate toilet rooms for each sex and on each floor where classrooms are located. In elementary schools, the ratio of toilets to number of boys is 1:60; for girls, it is 1:30. In middle and high schools, the ratio of toilets to young men is 1:90; for young women, it is 1:45. Separate facilities must be provided for teachers and employees, as well as for kitchen employees. When auditoriums and multipurpose rooms have a community use, additional toilet facilities must be provided. All toilet facilities must be ventilated directly to the outside, either by windows that open or by mechanical exhaust systems.

Hot and cold water or tempered water under operating pressures (20 psi minimum) should be available for bathing and washing. Hot water delivered to showers and lavatories should not exceed 110° F. The temperature of hot water at other fixtures should not exceed 120° F, except where necessary for sanitizing purposes.

Drinking Water Fountains

Drinking fountains should be conveniently located on each floor (at least 1 per floor in a ratio of 1 fountain per 75 students), according to plumbing code 248 CMR 2.10. The fountains must be at appropriate heights for users and should be easily accessible to all school program activities. Drinking fountains should not be installed on handwashing sinks in bathrooms or on sinks in art or science classrooms. Drinking-fountain spouts should be of angle jet construction, with water pressure maintained so that the stream extends at least 1 inch beyond the mouth guard.

Sewage Disposal

All liquid and solid human wastes must be disposed of directly into an appropriate sewage disposal system, connected to either a municipal system or a subsurface onsite sewage disposal system. The latter is regulated by DEP (310 CMR 15). It is extremely important to ensure that the system is maintained free of leaks and backups, to avoid the spread of disease through exposure to contaminated or toxic sewage.

FIRE SAFETY

Fires happen in schools with relative frequency. For example, across the nation during 2001, an estimated 7,100 reported fires occurred in educational facilities, causing 76 civilian injuries and $127.7 million in estimated property damage (National Fire Protection Association, 2004). Despite this, it is rare to hear of a student dying in a school fire. This is because, after several catastrophic

school fires early in the 20th century, fire codes were instituted requiring frequent evacuation drills, inspection of egress facilities, and control of interior finishes and decorations (Carson, 2003).

Fire Inspections/Fire Drills

The Massachusetts Fire Code regulations pertaining to schools are contained in 527 CMR 10.09, viewable online at http://www.mass.gov/dfs/osfm/fireprevention/adv/comprehensiveschoolregs.pdf.

Among the provisions of these regulations is the stipulation that the head of the municipal fire department, or a designee, will inspect each school four times each year, review building fire safety plans, conduct fire drills, and question administrators about any fire safety issues. Drills may be conducted without advance warning to school personnel. A record of all fire exit drills must be kept on the premises, and written reports must be filed at least twice a year with the head of the fire department, listing time and date of drill, weather conditions, number of occupants evacuated, total time for evacuation, and other relevant information. DOE strongly encourages schools to develop a reminder system and to schedule building and fire inspections in advance, *prior* to expiration dates.

Invalid fire inspections (or building inspections) are cause for immediate suspension of a private occupational school's license, in accordance with 603 CMR 3.07 and 3.17(2). In the event of an expired inspection, DOE will notify the school via telephone and provide the school with 24 hours to submit the valid inspection(s). Failure to do so results in immediate suspension of the school's license, which means that all courses must be suspended until DOE lifts the suspension. It should be noted that a school is not entitled to a hearing prior to suspension for invalid building and fire inspections, in accordance with 603 CMR 3.17(5).

School Wall Regulations

In 2003, an amendment to the Massachusetts Fire Code regulations was promulgated. It pertains to the hanging of student work and teaching materials in schools. The following is a summary of current rules:

Classrooms

Paper materials displayed shall not exceed 20% of the total wall area. Paper materials displayed shall be attached directly to walls and shall not be permitted to cover an egress door or even be placed within 5 feet of one. When determining wall areas in accordance with 527 CMR 10.09 (5)(a), door and window openings shall be included. There are a few exceptions:

- ***Exception 1:*** Paper material may be displayed in fully enclosed viewing cabinets with glass or polycarbonate viewing panels or covered with glass or polycarbonate sheet material (thermoplastic materials such as Plexiglas are not acceptable).
- ***Exception 2:*** Flame-retardant paper material may be used for display.
- ***Exception 3:*** Paper material displays may cover up to 50% of the total wall area in classrooms that are fully sprinklered in accordance with 780 CMR: Massachusetts State Building Code.

Exit access passageways, assembly areas, and corridors

Paper materials displayed shall not exceed 10% of the surface area of any wall. Such paper material shall be positioned in such manner to avoid concentration of materials, in order to reduce flame spread in the event of a fire. In no event shall any one grouping exceed a maximum horizontal measurement of 12 feet or a maximum vertical measurement of 6 feet. Groups of paper material shall be allowed as long as there is space between each group equal to the horizontal width of the largest adjacent group. Paper material used for display shall be attached directly to walls and shall not be permitted to cover an egress door or be placed within 5 feet of one.

Exits and enclosed exit stairs
Displayed paper materials shall not be permitted in exits and enclosed exit stairs.

The provisions of this amendment do not prohibit the posting of exit signage or evacuation plans established in accordance with 527 CMR 10.09(1) and do not apply to any election materials required by law to be posted during any local, state, or federal election. Further information clarifying some of the stipulations of this amendment is available at http://www.mass.gov/dfs/osfm/fireprevention/cmr/schoolwallregexp.pdf.

Fire Alarms
All fire alarm systems must be maintained in working order at all times. The sounding of any fire alarm box automatically transmits a signal to the Fire Alarm Office, which simultaneously dispatches fire apparatus to the school. School fire alarm systems must be maintained and tested in accordance with NFPA 72®, National Fire Alarm Code®, which is revised every 3 years. For more information, see http://www.nfpa.org.

Fire department regulations and M.G.L. c.268, s.32 prohibit shutting off or tampering with any fire alarm box without approval of the fire department. Design innovations in alarm systems have made malicious false alarms easier to prevent. Alarms are now available with Lexan covers and built-in battery-operated horns that activate when the cover is lifted, notifying teachers or staff that someone is trying to activate the alarm.

Arson Prevention
The deliberate setting of fires is a serious problem for schools, in Massachusetts and nationwide. School fires start in a wide variety of areas, but NFPA figures indicate that locker rooms and lavatories are common locations, and almost half (46%) of fires are intentionally set.

The largest category of reported school fires in Massachusetts was indoor rubbish fires confined to noncombustible containers, with 81 of these confined rubbish fires accounting for 33% of all reported school fires in 2003. It is likely that many of these fires were intentionally set, but because they were confined to noncombustible containers, an abbreviated report was used that does not ascertain if a fire was intentionally set.

School fires in Massachusetts generally occur during the school day. Seventy-nine percent of school structure fires in 2003 occurred between 8 am and 1 pm, with a sharp increase between 11 am and 1 pm. Ninety-two percent of these fires occurred between Monday and Friday.

Because fire investigators often discover that there have been a number of small fires preceding a fire that summons them to a school, Massachusetts fire officials have filed a bill requiring school officials to report all fires to the local fire department. In 2006, an act relative to the reporting of fires in schools was added to the already existing laws about fires. Following is Section 2 of the act, which requires reporting fires.

> ***"Chapter 80 of the Acts of 2006***
> *SECTION 2. Chapter 148 of the General Laws is hereby amended by inserting after section 2 the following section: Section 2A. The principal of any public or private school that provides instruction to pupils in any of grades 1 to 12, inclusive, shall immediately report any incident involving the unauthorized ignition of any fire within the school building or on school grounds to the local fire department. The principal shall submit a written report of the incident to the head of the fire department within 24 hours on a form furnished by the department of fire services. The report shall be filed without regard to the extent of the fire or whether there was a response by the*

fire department. The head of the fire department shall report such incident to the marshal in accordance with section 2."

The fire reporting form can be downloaded at http://www.mass.gov/dfs/osfm/forms/fp200.pdf.

Schools can increase fire safety by taking the following measures:

- Establish a close working relationship with local fire department.
- Make sure students and staff participate in regular fire drills.
- Ensure that fire alarms are properly designed, installed, maintained, and protected from tampering.
- Educate students about the seriousness of arson and false alarms.
- Establish disciplinary policies covering arson and false alarms and make sure every student knows the penalties.
- Arrange adequate supervision for areas that present the highest risk for arson (e.g., locker rooms, lavatories), especially during lunch hours.
- Inform the fire department of all fire incidents, even if small enough to be contained by school staff.
- Remove materials outside the building that arsonists could use to ignite a fire, such as debris, trash, and leaves.
- Secure building windows and doors and outside dumpsters.

Additional information on fire safety is contained in Chapter 13 in the Section entitled "Categories of Unintentional Injuries (Fire and Burn Injuries)."

OUTDOOR SAFETY

Playgrounds

The National Program for Playground Safety recommends compliance with the playground safety guidelines set forth in the Consumer Product Safety Commission (CPSC) publication *Handbook for Public Playground Safety* (see http://cpsc.gov/cpscpub/pubs/325.pdf). Because nearly 70% of playground injuries are related to falls onto the surface of the playground, cushioned surfaces beneath and around equipment — at depths appropriate to equipment height — can reduce occurrence and severity of these injuries. (See Chapter 13 for additional information.) Playgrounds also need to be inspected. Manufacturers' recalls, warnings, or updates should be observed, and CPSC warnings should be taken into consideration.

Some things that need to be checked regularly, even weekly, include:

- the depth of loose-fill cushioned surfacing, such as wood chips or pea gravel, that may have been displaced through use;
- accessibility paths such as rubber mats or poured synthetic surfaces, which may need to be swept to remove debris such as sand, dirt, or loose-fill surfaces displaced from adjacent areas;
- trash in and around the playground, including protruding glass, can lids, sharp rocks, metal, and other items; and
- damage to equipment, such as broken or missing handrails, guardrails, steps, or signs.

Other things that should be checked monthly, quarterly, or annually include:

- There may be compaction or deterioration of loose-fill surfacing materials such as wood chips, pea gravel, or sand. Loads of additional materials may be needed to provide adequate cushioned surfacing.

- Equipment may be broken or have loose, worn, or missing parts. All parts, even plastic, can break. Check for sharp points, corners, or edges. Closely inspect bolts, welding points, moving parts, and protective caps or plugs, and replace if needed.
- Trip hazards may be created by settling of equipment, usage, or vandalism. A general walk-through may reveal exposed concrete footings or anchoring devices, rocks, roots, or uneven surfacing materials.
- Wooden equipment may have splinters, large cracks, or deterioration. A wood preservative, applied once a year, will help protect against deterioration. Preservatives should meet both CPSC guidelines and American Society for Testing & Materials (ASTM) standards.
- Metal might rust or deteriorate. Metal equipment may need to be repainted periodically. All paints and other similar finishes should have no more than 0.06% lead by dry weight. Playground equipment that was purchased prior to 1978 may need testing for lead paint unless the manufacturer documents that non-lead paint was used.
- Drainage in the playground area may be inadequate. Water should not collect under or near equipment, especially under slide and swing areas, where ice could form and cause falls.

Most maintenance of equipment involves making sure the equipment's surfaces and mechanical workings are safe. However, other aspects need to be considered. General safety points include:

- No openings on playground equipment should measure between 3.5 inches and 9 inches, because openings of this size range present an entrapment hazard.
- There should be no V-shaped openings or open areas close to the top of slides where strings or ropes could get caught and cause strangulation.
- There should be no more than 2 swings in a bay or support structure, and those swings should be at least 24 inches apart at the seat base and 30 inches from the side supports.
- All S-hooks should be closed. Mechanisms on teeter-totters and other equipment that could pinch fingers should be closed.

Additional information on playground safety is available in Chapter 13 of this manual and in CPSC's *Handbook for Public Playground Safety,* available at http://www.cpsc.gov/cpscpub/pubs/325.pdf.

Weather Safety

Each year, Americans cope with an average of 10,000 thunderstorms, 2,500 floods, 1,000 tornadoes, and 6 deadly hurricanes. Some 90% of all presidentially declared disasters are weather-related, leading to approximately 500 deaths per year and nearly $14 billion in damage (National Weather Service, 2001). Schools are responsible for safeguarding students and staff from weather hazards ranging from potentially deadly storms to extremes of heat or cold.

Ways to make school facilities safer in natural disasters are discussed in the "Disaster/Terrorism Planning and Risk Mitigation" section below. However, weather events and weather conditions do not have to reach the level of natural disasters to pose significant risks.

Schools need to plan ahead to determine when and whether students will be allowed outside for recess and/or released from school. Recess periods should not take place outdoors when weather conditions are extreme. For guidance on wind chill and heat exposure, see the following website: http://www.idph.state.ia.us/hcci/common/pdf/weatherwatch.pdf.

Schools should have written guidelines about the release of students (FEMA, 2006). For example, children should not be permitted to wait outside for the bus during lightning storms or heavy rain with flashflood watches or warnings. School buses can be swept away by as little as 6 inches of water. Releasing students may put them at greater risk than keeping them in the safety of the

building. School staff can effectively monitor weather conditions with a NOAA weather radio, which costs about $40.

Lightning is a major cause of direct weather deaths. In the U.S., lightning casualties (deaths plus injuries) most commonly occur in open fields, including ballparks and playgrounds (Curran et al., 1997), and the activity with the fastest-rising lightning casualty rate is outdoor sports and recreation. Thus it is especially important for coaches, referees, and leaders of other outdoor activities to practice lightning safety and for schools to have an effective integrated lightning safety plan (Roeder& Vavrek, 2006). Recommendations on lightning safety for schools developed by the Lightning Safety Group (LSG) of the American Meteorological Association are available online through the Lightning Injury Research Program of the University of Illinois at Chicago at http://www.uic.edu/labs/lightninginjury/ltnfaq.htm.

Additional websites that provide helpful guidelines for dealing with severe weather conditions and weather emergencies are:

- http://www.ih2000.net/jasperem/Tornado%20-%20Safety%20in%20Schools.pdf (tornadoes); and
- http://www.disastercenter.com/schools.htm (links to information on hurricane and earthquake preparedness for schools).

Sun Safety

Exposure to ultraviolet (UV) radiation during childhood plays a role in future development of skin cancer, but the majority of U.S. schools were not designed with sun safety in mind. CDC recommends that sun protection be considered in the design of new schools and that, where possible, existing structures be modified by constructing roofs on dugouts, installing covers for bleachers, using awnings and tarps, and planting shade trees.

In some cases, construction of permanent shade structures is not an option. In such cases, *Guidelines for School Programs to Prevent Skin Cancer,* published by the National Center for Chronic Disease Prevention and Health Promotion (available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5104a1.htm), suggests the following measures for improving the sun safety of schools:

- Purchase and install portable or add-on shade structures, possibly through the support of school/community partnerships.
- Plant shade trees, with student participation, possibly as part of science instruction.
- Establish rules that encourage the scheduling of outdoor activities (including athletic and sporting events) during times when the sun is not at peak intensity.
- Encourage parents to apply sunscreen to their children in the morning and include it in their children's supply kits. (This is especially important for field trips and other times children will be outside.)
- Seek community partnerships to provide free or reduced-cost sunscreen for staff and students. (Parent/guardian consent for sunscreen application by school personnel may be required.)
- Provide hats and other protective clothing for persons who forget to bring their own.
- Reinforce awareness with visual and audio messages via posters and public-address system announcements.

Educational materials, tips, and daily UV index information by ZIP code are available from EPA's UV Index website, http://www.epa.gov/sunwise/uvindex.html. (See the "Kids" section for both interactive and printable explanations of UV Index levels.) Additional information about school sun safety is available in Chapter 5 of this manual, as well as in the Resources section of this chapter.

BUILDING SECURITY

Although maintaining a welcoming school climate is important, it must be balanced against the need to secure school facilities against unwanted and potentially dangerous intruders. While even the best school access control efforts cannot provide an absolute guarantee of safety, educators must take reasonable steps to reduce the risks of unauthorized access.

National School Safety and Security Services, a consulting firm specializing in school security and emergency/crisis preparedness training, school security assessments, and related school safety consulting, suggests the following practical steps for improving school access control:

- Establish one main entrance. Install signage identifying it as the main entrance, and maintain visible signage on campus and on all school doors directing visitors to the main entrance door. Some schools also post notices advising that individuals who do not follow visitation procedures may be charged with trespassing.
- Create a visitor sign-in, sign-out, and escort procedure.
- Reduce the number of doors that may be opened from the outside.
- Secure custodial entrances and delivery doors during and after school hours. Have custodial personnel keep a log of deliveries, including name of the vendor company, name of the delivery person, license plate of vehicle, date and time of arrival and departure, and associated information.
- During evening and night hours, require all school doors to be closed and secured from the outside while cleaning personnel and after-hours staff work inside the building.
- Train all school staff, including support personnel, in building safety and security procedures.
- Train students in building safety and security procedures.
- Educate parents about access-control strategies and the importance of following the rules.
- Establish a routine maintenance and timely repair program for the doors.
- Use magnetic locks on doors so they close more easily.
- Consider use of a camera, intercom, and buzzer at the school main entrance, especially at elementary schools.
- Many schools, especially high schools and other larger facilities, use surveillance cameras to monitor and record entrance points. Although most schools do not have adequate funding for full-time staff to monitor surveillance cameras, these cameras can serve as a deterrent and should be used at least to provide recorded video of who was in the area.

DISASTER/TERRORISM PLANNING AND RISK MITIGATION

Natural Disasters and Large-Scale Accidents

The first step in securing a school facility against natural disasters and large-scale accidents, such as discharge of hazardous materials, is to determine what disasters could actually happen there. Assistance in making this determination may be obtained from the FEMA website at http://www.fema.gov, the Massachusetts Emergency Management Agency (click “Public Safety” in the Residents section at http://www.mass.gov), or local emergency management office. See also the “Emergency Planning” section in Chapter 2.

After a school determines what disasters are possible, FEMA recommends conducting a systematic risk assessment of the school facility. Since most natural-disaster-related injuries and deaths are caused by falling objects, fires, release of hazardous materials, flying debris, and roof

collapse, FEMA advises focusing on these hazards. Some potentially dangerous but easily remedied conditions include:

- unsecured bookshelves in libraries;
- hazardous chemicals stored on open shelves in science classrooms or custodian closets; and
- glass-front storage cabinets.

Many remedies to these conditions cost almost nothing, such as moving chemicals to lower shelves or placing electronic equipment and computers on higher floors if there is a flood risk. Others are reasonably priced for the protection they offer, such as lockdown devices or threaded washers and nuts to stabilize computers in earthquake-prone areas, approved storage cabinets for hazardous materials, and shatter-resistant plastic film to cover glass cases.

Disaster planning should also include identifying safe areas in the facility where students could sleep and storing provisions in an onsite shelter. Schools should have adequate supplies for use during an emergency, including food, blankets, stored water, flashlights with batteries, first-aid kits, battery-powered radios, and other supplies. Such preparations are necessary both because disasters may require students to be kept overnight and because the school may be pressed into service as a community shelter. Schools should work with the community and with parents to identify requirements and develop a plan. (See also the “Emergency Planning” section in Chapter 2.)

For additional information on safe design and risk management, see the FEMA publication 424, *Design Guide for School Safety Against Earthquakes, Floods, and High Winds,* available at http://www.fema.gov/fima/rmsp424.shtm. Information may also be found at the website of the National Clearinghouse for Educational Facilities, http://www.edfacilities.org/rl/disaster.cfm.

Note: Although most people do not automatically think of Massachusetts when they think of earthquakes, there have been 316 earthquakes recorded in Massachusetts since 1627 — 19 of them of Intensity V or greater (Northeast States Emergency Consortium, 2006). If a sizeable earthquake were to occur in Massachusetts, it would be likely to affect a much larger area than an earthquake of similar magnitude in California, due to New England’s solid bedrock geology.

Terrorism and Violent Incidents

In the wake of the terrorist attack on a school in Beslan, Russia, in September 2004, the Department of Homeland Security and FBI conducted an analysis of school security measures to prevent a similar event in the United States. Recommendations resulting from this analysis were the subject of a policy letter from Eugene W. Hickok, Deputy Secretary, U.S. Department of Education. Recommendations for physical enhancements to school buildings included:

- Install secure locks for all external and internal doors and windows.
- Install window and external door protections with quick-release capability.
- Consider establishing a safe area (or areas) within the school for assembly and shelter during emergencies.
- Apply protective coating on windows in facilities that face traffic.

See Exhibit 4-5 for additional information from this policy letter.

The FEMA publication, *Primer to Design Safe School Projects in Case of Terrorist Attacks* (available at http://www.fema.gov/fima/rmsp426.shtm), contains information on basic principles and techniques school administrators and designers can use to protect a school from terrorist attacks. It includes information on how to conduct a threat/risk assessment, prepare site layout and building design, and create school safety plans. It also includes a brief discussion of blast theory and of

chemical, biological, and radiological (CBR) threats. It describes measures that can be taken to mitigate school vulnerabilities, such as safe rooms within schools that will resist CBR and blast threats.

Chapter 8 of this manual also contains information on bioterrorism and resulting infectious disease emergencies.

The Airflow and Pollutant Transport Group at Lawrence Berkeley National Laboratory, which has substantial knowledge and experience in protecting buildings and occupants from chemical or biological attack, has created a website (http://securebuildings.lbl.gov) offering "Advice for Safeguarding Buildings Against Chemical or Biological Attack." Recommendations include:

Pre-Event — Immediate Advice

- **Prevent unauthorized access to air intakes (possibly air exhausts as well).** The easiest way for a terrorist to quickly contaminate a building with chemical or biological agents is to introduce the agents into the building's ventilation system.
- **Secure mechanical (HVAC) room doors to prevent unauthorized access.** A terrorist with access to a building's heating, ventilation, and air conditioning equipment can quickly contaminate the entire building.
- **Secure building plans and HVAC plans from unauthorized access.** A terrorist possessing knowledge of the building's ventilation system can maximize casualties from an indoor chemical or biological attack.
- **Develop an emergency response team.** Any emergency requires rapid response in a number of areas, including evacuation assistance and communication with authorities.
- **Plan and practice separate emergency response procedures for indoor and outdoor releases of chemical and biological agents.** The first response to an outdoor chemical or biological release should include shutting down the building's ventilation system and closing all doors and windows. In contrast, the response to an indoor chemical or biological release should include evacuation.

Pre-Event — Long-Term Advice

The following is a list of some of the actions that can help make a building safer in the event of a chemical or biological release. Which of these, if any, that should be performed for a particular building depends on the costs and the level of threat.

- **Ensure that building operators can quickly manipulate HVAC systems to respond to different types of attack.** Manipulating the HVAC system can help slow the spread of a chemical or biological agent or can rapidly clear such an agent out of a building. Rapid response could save lives.
- **Upgrade HVAC filters and seal gaps to prevent air bypass.** Particle filters can remove biological agents (such as anthrax) from the air-handling system. However, the tighter the filter, the more air will try to leak around it.
- **Establish internal and external safe zones for people to use during a toxic release.** By manipulating (and perhaps modifying) the building's HVAC system, safe areas can be created inside the building when there is an outdoor hazardous release. Also, some external areas near a building will be safer than others during an indoor release.
- **Provide separate air exhaust systems for mailrooms and other high-risk locations.** Some areas are likely targets for introducing a chemical or biological agent into a building. Isolating the air-handling systems from these areas can prevent the agent from spreading throughout the building.
- **"Weatherize" the building by sealing cracks around doors and windows.** Gaps around windows and doors, as well as holes in the building shell, allow conditioned air to escape

the building and outdoor air to enter. Sealing these gaps can reduce the amount of outdoor contamination that enters the building.

Additional helpful information can be found at the website of the National Clearinghouse for Educational Facilities at http://www.edfacilities.org/rl/safety_security.cfm.

SUMMARY

Creating and maintaining clean, healthful, comfortable, and safe school facilities is no easy task, but it is a necessary and critical one. To the degree possible, schools should be sheltering, protective environments where risks of all kinds are minimized so that students and staff may concentrate on the important task of education. Keeping schools sanitary, hazard-free, and secure not only reduces risk of illness and injury but also improves academic performance, enhances the social climate, and promotes school connectedness.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS

Commonwealth of Massachusetts
Office of Technical Assistance for Toxics Use Reduction
100 Cambridge Street, Suite 900
Boston, MA 02114
Phone: 617-626-1060
Fax: 617-626-1095
Website: http://www.mass.gov/ota
The Massachusetts Office of Technical Assistance, a nonregulatory branch of the Executive Office of Environmental Affairs, offers a special program, "Pollution Prevention and Chemical Management in Schools," designed to help schools address a variety of chemical use management and other environmental, health, and safety issues. It links school-based teams with others throughout a school district and with local campaigns and coalitions to promote environmental safety and health policies and strategies for healthier schools.

MassCOSH (Massachusetts Coalition for Occupational Safety and Health)
Healthy Schools Initiative (HSI)
12 Southern Avenue
Dorchester, MA 02124
Phone: 617-825-SAFE (7233)
E-mail: info@masscosh.org
Website: http://www.masscosh.org/healthy_schools.htm
The Healthy Schools Initiative (HSI) engages school staff, parents, students, administrators, labor, environment, and public health activists in efforts to identify and reduce environmental health hazards in schools through education, technical assistance, and advocacy. HSI brings together parents, staff, and administrators in School Environmental Teams to assess and address their own school environmental health and safety conditions, using EPA's IAQ Tools for Schools Action Kit as a model. HSI also coordinates the Massachusetts Healthy Schools Network, linking leaders to advocate for school environmental health and safety policies, regulations, and technical assistance to change the way schools are designed, built, and maintained in Massachusetts.

Massachusetts Department of Public Health
Center for Environmental Health
Phone: 617-624-5757
Fax: 617-624-5777
TTY: 617-624-5286
Website: http://www.mass.gov/dph/beha

> **Publication:** *Environmental Health & Safety Issues in Massachusetts Schools* (2004) assists school systems in identifying and remedying indoor environment health and safety problems. It contains a checklist schools can use to identify important environmental health and safety issues in the school building; references that provide specific regulations and industry standards/guidelines; and a quick resource guide and a list of resources for further guidance. It is available online at http://www.mass.gov/dph/beha/iaq/schools/schools.htm.

Massachusetts Public Health Association (MPHA)
Website: http://www.mphaweb.org
Offices:

> **MPHA-Boston**
> 434 Jamaicaway
> Jamaica Plain, MA 02130
> Phone: 617-524-6696
> Fax: 617-524-5225
> E-mail: mpha@mphaweb.org
>
> **MPHA-Springfield**
> c/o Springfield Department of Health

95 State Street
Springfield, MA 01103
Phone: 413-750-2060

MPHA-Merrimack Valley
c/o Lowell Health Department
341 Pine Street
Lowell, MA 01851
Phone: 978-328-2705

MPHA-Worcester
c/o Willis Center
119 Forest Street
Worcester, MA 01609
Phone: 508-414-0976

Massachusetts School Building Authority (MSBA)
3 Center Plaza, Suite 430
Boston, MA 02108
Phone: 617-720-4466
Fax: 617-720-5260
Website: http://www.mass.gov/msba
MSBA's objectives are effective management and planning of the Commonwealth's investments in school building assets; promotion of positive educational outcomes; ensuring the health, safety, security, and well-being of students; easing and preventing overcrowding; maintaining good repair and efficient and economical construction and maintenance; financial sustainability of the school building assistance program; and thoughtful community development, smart growth, and accessibility.

Toxics Use Reduction Institute (Community Toxic Use Reduction — Schools)
TURI/University of Massachusetts Lowell
One University Avenue
Lowell, MA 01854-2866
Phone: 978-934-3346
Fax: 978-934-3050
Website: http://community.turi.org/schools.shtml
The TURI website showcases Massachusetts school systems that are creatively incorporating toxics use reduction into their policies and daily operations, using the Toxics Use Reduction Networking (TURN) Grant Program. It also offers safety checklists, resources, and links.

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS (GENERAL)

American Conference of Governmental Industrial Hygienists (ACGIH)
1330 Kemper Meadow Drive
Cincinnati, OH 45240
Phone: 513-742-6163
Fax: 513-742-3355
E-mail: mail@acgih.org
Website: http://www.acgih.org/home.htm
ACGIH provides information for school custodians on air sampling, bioaerosols, infectious agents, and industrial ventilation.

BE SAFE — Healthy Schools
Center for Health, Environment & Justice
P.O. Box 6806
Falls Church, VA 22040
Phone: 518-732-4538 or 703-237-2249

E-mail: besafe@chej.org
Website: http://www.besafenet.com/healthyschools.htm
The BE SAFE Network, Coalition for Healthier Schools, Learning Disabilities Association of America, National PTA, and other groups have developed the School Environmental Checklist as a tool to encourage communities to address school environmental issues that may pose a threat to children's health. The checklist, available at the above website, includes questions about pesticide use, food safety, toxic cleaning products, indoor air quality, and other environmental hazards and has a resource directory with solutions to make schools healthier places.

Center for Children's Health and the Environment (CCHE)
Mount Sinai School of Medicine, Box 1043
One Gustave Levy Place
New York, NY 10029
Fax: 212-360-6965
Website: http://www.childenvironment.org/cche.htm
CCHE's mission is to promote the health of children by conducting environmental health and policy research.

Children's Environmental Health Network
110 Maryland Avenue NE, Suite 505
Washington, DC 20002
Phone: 202-543-4033
Fax: 202-543-8797
E-mail: cehn@cehn.org
Website: http://www.cehn.org
The Children's Environmental Health Network is a national organization composed of experts in the fields of medicine, nursing, research, and policy. Its website provides information on children's environmental health as well as links to additional resources in the field.

Healthy Schools Network, Inc. (HSN)
773 Madison Avenue
Albany, NY 12208
Phone: 518-462-0632 or 212-482-0204
Fax: 518-462-0433
Website: http://www.healthyschool.org
HSN promotes the development of state and national policies, regulations, and funding for school facilities environments and has won national recognition for its Clearinghouse services, as well as its model program and outreach, now being replicated in numerous states. HSN's coalition-building work has included the launching of a state-based network of organizations concerned with environmental health in schools, as well as the National Coalition for Healthier Schools.

> **Publication:** *Science-Based Recommendations to Prevent or Reduce Potential Exposures to Biological, Chemical, and Physical Agents in Schools* (2004) presents results of a literature review related to school indoor environmental quality and, in the context of limited resources facing American schools, practical science-based recommendations to improve and promote good school indoor environmental quality and prevent or reduce potential occupant exposure to toxic biological, chemical, and physical agents.

National Center for Toxicological Research
U.S. Food and Drug Administration (FDA)
3900 NCTR Road
Jefferson, AR 72079
Phone: 870-543-7130
Website: http://www.fda.gov/nctr/index.html
The National Center for Toxicological Research conducts peer-reviewed scientific research that supports and anticipates the FDA's current and future regulatory needs. This involves fundamental and applied research specifically designed to define biological mechanisms of action underlying the toxicity of products regulated by the FDA.

National Clearinghouse for Educational Facilities (NCEF)
at the National Institute of Building Sciences
1090 Vermont Avenue NW, Suite 700
Washington, DC 20005
Phone: 888-552-0624 or 202-289-7800
Website: http://www.edfacilities.org
Created in 1997 by the U.S. Department of Education, NCEF is a free public service that provides information on planning, designing, funding, building, improving, and maintaining schools. The Clearinghouse is funded by a grant from the U.S. Department of Education with oversight by the Office of Safe and Drug-Free Schools.

National Environmental Publications Internet Site (NEPIS)
P.O. Box 42419
Cincinnati,OH 45242
Phone: 800-490-9198
Fax: 301-604-3408
Website: http://www.epa.gov/nscep/
A large, national database of free digital and paper publications, formerly offered through the U.S. Environmental Protection Agency's National Service Center for Environmental Publications (NSCEP).

National Institute of Environmental Health Sciences (NIEHS)
P.O. Box 12233
Research Triangle Park, NC 27709
Phone: 919-541-3345
TTY: 919-541-0731
Website: http://www.niehs.nih.gov
NIEHS, one of 27 institutes and centers of the National Institutes of Health (NIH), reduces the burden of human illness and dysfunction from environmental causes through multidisciplinary biomedical research programs, prevention and intervention efforts, and communication strategies that encompass training, education, technology transfer, and community outreach. The NIEHS website provides environmental health news, fact sheets, brochures, library access, and a kids' section.

National School Plant Management Association (NSPMA)
P.O. Box 8010
Lexington, KY 40533
Phone: 877-833-0610 or 859-296-1343
Fax: 859-296-1333
Website: http://www.nspma.com
NSPMA is a membership organization that facilitates the exchange of information on school plant management, maintenance, and care and promotes the professional advancement of school plant management personnel.

National Toxicology Program (NTP)
Website: http://ntp-server.niehs.nih.gov
Housed at NIH's National Institute of Environmental Health Sciences, NTP is an interagency program that evaluates agents of public health concern by developing and applying tools of modern toxicology and molecular biology. Three agencies form NTP's core: National Institute of Environmental Health Sciences of the National Institutes of Health (NIEHS/NIH); National Institute for Occupational Safety and Health of the Centers for Disease Control and Prevention (NIOSH/CDC); and National Center for Toxicological Research of the Food and Drug Administration (NCTR/FDA).

Northeast Waste Management Officials' Association (NEWMOA)
129 Portland Street, 6th Floor
Boston, MA 02114-2014
Phone: 617-367-8558
Website: http://www.newmoa.org/Newmoa/htdocs

NEWMOA is a nonprofit, interstate association that was established by the Governors of the New England states as an official regional organization to coordinate interstate hazardous and solid waste and pollution prevention activities and support state waste programs. It was formally recognized by the U.S. Environmental Protection Agency in 1986.

President's Task Force on Environmental Health Risks and Safety Risks to Children
Schools Workgroup
U.S. Environmental Protection Agency
Office of the Administrator
Office of Children's Health Protection
1200 Pennsylvania Avenue NW
Mail Code 1107A
Room 2512 Ariel Rios North
Washington, DC 20004
Phone: 202-564-2188
Fax: 202-564-2733
Website: http://yosemite.epa.gov/ochp/ochpweb.nsf/content/Whatwe_fedtask.htm

Publication: *Inventory of Federal School Environmental Health Activities* (2003) covers school environmental health issues that may result in exposure of students, staff, or visitors to environmental contaminants originating either outdoors or indoors, such as chemicals, allergens, pesticides, particles, gases, UV radiation, or other contaminants. Building factors that may affect these exposures, such as ventilation, energy efficiency, design decisions, and operation and maintenance policies and practices, are also included. Activities are listed from the Department of Agriculture, Department of Education, Department of Energy, Department of Health and Human Services, Department of Labor, U.S. Consumer Product Safety Commission, Department of the Interior, and Environmental Protection Agency. It is available online at http://yosemite.epa.gov/ochp/ochpweb.nsf.

U.S. Environmental Protection Agency: Healthy School Environment Resources
School Programs
Indoor Environments Division
Office of Air and Radiation (6609J)
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue NW
Washington, DC 20460
E-mail: schools@epa.gov
Website: http://www.epa.gov/schools
The Healthy School Environments site is intended to serve as a gateway to online resources to help facility managers, school administrators, architects, design engineers, school nurses, parents, teachers, and staff address environmental health issues in schools.

RESOURCES: SPECIFIC TOPICS

Animals in School

Massachusetts Department of Public Health

Division of Epidemiology and Immunization
Phone: 617-983-6800
Call for information regarding human exposures to animals, including human illness suspected to be of animal origin.

Virology Laboratory
Phone: 617-983-6385
Call for information regarding rabies testing.

Massachusetts Division of Fisheries and Wildlife (MDFW)
Phone: 617-626-1591
E-mail: Mass.Wildlife@state.ma.us
Call for information about laws and policies concerning wild animals.

Massachusetts Department of Agricultural Resources
Bureau of Animal Health
251 Causeway Street, Suite 500
Boston, MA 02114
Phone: 617-626-1700
Fax: 617-626-1850
Website: http://www.mass.gov/agr/animalhealth/index.htm
Call for information about laws and policies concerning domesticated animals, quarantines, and rabies vaccinations.

Asbestos

Massachusetts Division of Occupational Hygiene
Occupational Health/Indoor Air Quality Program
1001 Watertown Street
West Newton, MA 02465-2148
Phone: 617-969-7177
Fax: 617-727-7581

U.S. EPA Region 1
1 Congress Street
Boston, MA 02114-2023
Phone/TTY: 617-918-2082
Website: http://www.epa.gov/region01

Building Codes

Massachusetts Board of Building Regulations and Standards (BBRS)
One Ashburton Place, Room 1301
Boston, MA 02108
Phone: 617-727-7532
Fax: 617-227-1754
Website: http://www.mass.gov/bbrs
Authorized by Massachusetts State Law to promulgate the Massachusetts State Building Code, BBRS administers and enforces numerous construction-related licensing programs, which can be accessed through its website.

Massachusetts Department of Public Safety
Phone: 617-727-3200
Fax: 617-727-5732
Website: http://www.mass.gov/dps

Building Design

Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health
4676 Columbia Parkway
Cincinnati, OH 45226-1998
Website: http://www.cdc.gov/niosh/docs/2003-136/pdfs/2003-136.pdf

Publication: *Guidance for Filtration and Air-Cleaning Systems to Protect Building Environments from Airborne Chemical, Biological, or Radiological Attack* (2003), developed in collaboration with a working group at the Department of Homeland Security, discusses air-filtration and air-cleaning

issues associated with protecting building environments from an airborne chemical, biological, or radiological (CBR) attack. It provides information about issues that should be considered when assessing, installing, and upgrading filtration systems. It is intended to provide guidance regarding measures that may be taken to prepare for a potential CBR attack, rather than in response to an actual CBR event. The intended audience includes those who are responsible for making the technical decisions to improve filtration in public, private, and governmental buildings, such as schools. The document is available at the NIOSH website; hard copies may be ordered from NIOSH Publications Dissemination at 800-356-4674 or http://www.cdc.gov/niosh/pubs.html.

Committee on Architecture for Education (CAE)
American Institute of Architects
1735 New York Avenue NW
Washington, DC 20006-5292
Phone: 800-AIA-3837 (800-242-3837) or 202-626-7300
Fax: 202-626-7547
E-mail: cae@aia.org
Website: http://www.aia.org/cae/cae_default
CAE is a large and active group of architects and allied professionals concerned with the quality and design of all types of educational, cultural, and recreational facilities. The website contains news and feature articles about school and classroom design, as well as “best practices” information.

Council of Educational Facility Planners International (CEFPI)
9180 E. Desert Cove, Suite 104
Scottsdale, AZ 85260
Phone: 480-391-0840
Fax: 480-391-0940
E-mail: contact@cefpi.org
Website: http://www.cefpi.org
CEFPI is a professional association whose sole mission is improving the places where children learn. CEFPI members are actively involved in planning, designing, building, equipping, and maintaining schools and colleges.

Materials:

- *Schools for Successful Communities* (2004), a report published jointly by CEFPI and EPA, is available free on the CEFPI website, where print copies may also be purchased.
- *Creating Connections: CEFPI Guide for Educational Facility Planning* (2004 edition) is available for purchase online.

Massachusetts School Building Authority (MSBA)
Website: http://www.mass.gov/msba
On July 26, 2004, former Massachusetts Governor Romney signed into law Chapter 208 of the Acts of 2004, establishing a new Massachusetts School Building Authority. The new authority has assumed responsibility for the Commonwealth’s school building assistance (SBA) program. All requests and inquiries regarding the SBA program should be directed to the new authority.

Massachusetts Technology Collaborative (MTC)
Green Schools Initiative
75 North Drive
Westborough, MA 01581
Phone: 508-870-0312
Fax: 508-898-2275
E-mail: mtc@masstech.org
Website: http://www.mtpc.org/renewableenergy/green_schools.htm
MTC provides information, technical assistance, and funding for feasibility studies, design, construction, and educational activities of green public schools employing renewable technologies. The goal of the Green Schools Initiative, on which MTC and the Massachusetts Department of Education are working in partnership, is to encourage school districts to construct or renovate school buildings that will cost less to operate and will provide healthier learning environments for students.

Rebuild America: EnergySmart Schools (ESS)
Website: http://www.rebuild.org/sectors/ess/index.asp
Rebuild America, created by the U.S. Department of Energy, is a nationwide network of community-based partnerships working to save energy, improve building performance, ease air pollution through reduced energy demand, and enhance quality of life through energy efficiency and renewable energy technologies. EnergySmart Schools (ESS) is an integral and active part of the Rebuild America program that is committed to building a nation of schools that are smart about every aspect of energy. ESS provides resources to help save energy in schools and offers technical assistance in engineering, architecture, finance, and planning, helping managers make decisions about heating, cooling, lighting, insulation, and the associated financing and environmental issues that will both lower energy consumption and create improved teaching and learning environments.

U.S. Access Board
1331 F Street NW, Suite 1000
Washington, DC 20004-1111
Phone: 800-872-2253 or 202-272-0080
TTY: 202-272-0082
Fax: 800-993-2822 or 202-272-0081
E-mail: info@access-board.gov
Website: http://www.access-board.gov
The U.S. Access Board, also known as the Architectural and Transportation Barriers Compliance Board, is an independent federal agency devoted to accessibility for people with disabilities. Information and technical assistance includes building and facility design guidelines for schools.

U.S. Environmental Protection Agency
IAQ Design Tools for Schools
Website: http://www.epa.gov/iaq/schooldesign
This website offers recommendations and tools to help communities and design professionals integrate good indoor air quality practices into the design, construction, renovation, and operation and maintenance of K–12 school facilities. Practical, cost-effective actions ranging from walk-off entry mats to advanced ventilation systems can reduce contaminants in schools and help protect the health of children and staff.

Fire Safety

Department of Fire Services, Massachusetts
P.O. Box 1025 (Eastern MA)
State Road
Stow, MA 01775
Phone: 978-567-3100

P.O. Box 389 (Western MA)
1 Prince Street
Northampton, MA 01060
Phone: 413-587-3181
Website: http://www.mass.gov/dfs/index.shtm

National Fire Protection Association (NFPA)
1 Batterymarch Park
Quincy, MA 02169-7471
Phone: 617-770-3000
Fax: 617-770-0700
Website: http://www.nfpa.org
NFPA, the world's leading advocate of fire prevention, is an authoritative source on public safety. Its 300 codes and standards influence every building, process, service, design, and installation in the U.S., as well as many of those used in other countries.

Food Service

Massachusetts Department of Education
School Nutrition & Health
Phone: 781-338-6480
Fax: 781-338-3399
E-mail: nutrition@doe.mass.edu
Website: http://www.doe.mass.edu/cnp

Massachusetts Department of Public Health
Division of Food and Drugs
Food Protection Program
305 South Street
Jamaica Plain, MA 02130
Phone: 617-983-6700
Fax: 617-983-6770
Website: http://www.mass.gov/dph/fpp/fpp.htm

Local Health Department/Board of Health
Obtain contact information for your own local health department/board of health.

National Coalition for Food Safe Schools (NCFSS)
E-mail: info@foodsafeschools.org
Website: http://www.foodsafeschools.org
NCFSS is a work group of representatives from a variety of national organizations, associations, and government agencies that have direct or indirect involvement or interest in reducing foodborne illness in the United States by improving food safety in schools.

National Food Service Management Institute (NFSMI)
University of Mississippi
6 Jeanette Phillips Drive
P.O. Drawer 188
University, MS 38677-0188
Phone: 800-321-3054 or 662-915-7658
Fax: 800-321-3061
Website: http://www.nfsmi.org

> **Publication:** *Serving it Safe, 2nd Edition* (2002), developed by NFSMI for USDA, gives guidance on how food service personnel can ensure the preparation and service of safe foods. The manual and the *Serving It Safe Instructor Guide* and poster are available at http://www.nfsmi.org/Information/sisindex.html.

Safe Tables Our Priority (S.T.O.P.)
P.O. Box 4352
Burlington, VT 05406
Phone: 802-863-0555
Fax: 802-863-3733
Website: http://www.safetables.org
S.T.O.P. is a nonprofit organization with the mission of preventing unnecessary illness and loss of life from pathogenic foodborne illness.

USDA/FDA Foodborne Illness Education Information Center
National Agricultural Library/USDA
Beltsville, MD 20705-2351
Phone: 301-504-6365
Fax: 301-504-7680
E-mail: foodborne@nal.usda.gov
Website: http://www.nal.usda.gov/foodborne/about.html

Website: http://www.cfsan.fda.gov/list.html

Publication: *Foodborne Pathogenic Microorganisms and Natural Toxins Handbook* (The "Bad Bug Book") provides basic facts regarding foodborne pathogenic microorganisms and natural toxins, with information from FDA, CDC, USDA Food Safety Inspection Service, and NIH. It is available at http://vm.cfsan.fda.gov/~mow/intro.html.

U.S. Food & Drug Administration
Center for Food Safety & Applied Nutrition
Outreach and Information Center
5100 Paint Branch Parkway HFS-555
College Park, MD 20740-3835
Phone: 888-SAFEFOOD (888-723-3366)

Indoor Air Quality

American Industrial Hygiene Association (AIHA)
Phone: 703-849-8888
Website: http://www.aiha.org
AIHA provides information on industrial hygiene and indoor air quality issues, including mold hazards and legal issues.

Collaborative for High Performance Schools (CHPS)
Phone: 877-642-CHPS (2477)
E-mail: info@chps.net
Website: http://www.chps.net/index.htm
CHPS facilitates the design of high-performance schools in California: environments that are not only energy efficient, but also healthy, comfortable, well lit, and containing the amenities needed for a quality education. CHPS's Low-Emitting Materials Products List, of interest to school districts and design teams who want to select building materials that contribute to good indoor air quality, is available for free download.

MidAtlantic Environmental Hygiene Resource Center (MEHRC)
1936 Olney Avenue
Cherry Hill, NJ 08003
Phone: 866-871-1984
Fax 856-489-4085
Website: http://www.mehrc.org/index.html
MEHRC is an organization dedicated to providing the best available expertise of the people in the indoor environmental quality industry to promote independent, scientifically based, objective training courses. Its instructors are leading, practicing IAQ professionals with technical and scientific expertise solving IAQ problems. It offers short 1-5 day courses for which it provides certificates of training.

New England Asthma Regional Council
The Medical Foundation
622 Washington Street, 2nd Floor
Dorchester, MA 02124
Phone: 617-451-0049 x504
Website: http://www.asthmaregionalcouncil.org

Materials:

- *Reducing Asthma Triggers in Schools: Recommendations for Effective Policies, Regulations and Legislation* provides suggestions for actions that could help control or prevent indoor air quality problems, with the goal of reducing the occurrence and severity of asthma and other respiratory diseases.
- *Health Considerations When Choosing School Flooring* is a fact sheet and companion purchasing menu for those charged with procuring school flooring.
- *What's That Smell: Simple Steps to Tackle School Air Problems* is a step-by-step guide to help school administrators and business/facilities managers understand indoor air quality problems in

schools, know what help is available, and evaluate what types of professional assistance, if any, may be necessary to address the problem.

U.S. Environmental Protection Agency
Indoor Air Quality (IAQ) Tools for Schools (TfS) Program
Website: http://www.epa.gov/iaq/schools
This program provides information on improving air quality through better school design and management practices. Site contains current information about the program and materials updates.

Materials:

- *Indoor Air Quality (IAQ) Tools for Schools* is a kit that shows schools how to carry out a practical plan of action to improve indoor air problems at little or no cost using straightforward activities and in-house staff. The kit includes checklists for all school employees, a flexible step-by-step guide for coordinating the checklists, an Indoor Air Quality Problem Solving Wheel, a fact sheet on indoor air pollution issues, and sample policies and memos. It is cosponsored by the National PTA, National Education Association, Council for American Private Education, Association of School Business Officials, American Federation of Teachers, and American Lung Association.
- *Road Map,* a guidance resource designed to assist schools with learning to use the *IAQ TfS* Kit, forming an IAQ team, and getting started on implementation, is downloadable in PDF format.
- In addition, EPA, in conjunction with the cast and crew of the popular television series *This Old House,* has produced a short video about how to properly operate and maintain ventilation systems in schools.

The *IAQ Tools for Schools* Kit (print or CD), individual IAQ Problem Solving Wheels, Road Map, and Taking Action and Ventilation Basics Videos are available free of charge from the IAQ INFO Clearinghouse at:

P.O. Box 37133
Washington, DC 20013-7133
Phone: 800-438-4318 or 703-356-4020
Fax: 703-356-5386
E-mail: iaqinfo@aol.com

U.S. Environmental Protection Agency
National Service Center for Environmental Publications (NSCEP)
P.O. Box 42419
Cincinnati, OH 45242
Phone: 800-490-9198
Fax: 513-489-8695
Website: http://www.epa.gov/ncepihom
NSCEP provides resources concerning mold and indoor air quality at http://www.epa.gov/ebtpages/airindoormold.html.

U.S. EPA Region 1
1 Congress Street
Boston, MA 02114-2023
Phone/TTY: 617-918-2082
Website: http://www.epa.gov/region01

Massachusetts Department of Public Health
Center for Environmental Health
Emergency Response/Indoor Air Quality (ER/IAQ)
250 Washington Street, 7th Floor
Boston, MA 02108
Phone: 617-624-5757
Fax: 617-624-5777
TTY: 617-624-5286
Website: http://www.mass.gov/dph/beha/iaq/iaqhome.htm
The ER/IAQ Unit has the responsibility to advise government concerning sanitary and other conditions in public institutions (M.G.L. c.111, s.5). Under this authority, the ER/IAQ Unit conducts assessments of indoor

air quality in public buildings, including schools, throughout Massachusetts; provides emergency response to chemical spills; administers the Massachusetts Right-To-Know law (M.G.L. c.111F); and participates in the activities of the State Emergency Response Commission with regard to the Emergency Planning and Community Right-To-Know Act of 1986.

Latex

American Latex Allergy Association (ALAA)
3791 Sherman Road
Slinger, WI 53086
Phone: 888-972-5378
Fax: 262-677-0324
E-mail: alert@latexallergyresources.org
Website: http://www.latexallergyresources.org
ALAA is a national nonprofit, tax-exempt organization that provides information about latex allergy and supports latex-allergic individuals. ALAA's website offers an online resource manual with a chapter devoted to information for schools.

Lead in Drinking Water

Massachusetts Department of Public Health
Phone: 617-522-3700

U.S. EPA Region 1
1 Congress Street
Boston, MA 02114-2023
Phone/TTY: 617-918-2082
Website: http://www.epa.gov/region01

Medical Waste Disposal

Massachusetts Department of Labor and Industries
Division of Occupational Hygiene
1001 Watertown Street
West Newton, MA 02165
Phone: 617-969-7177

Mercury

Northeast Waste Management Officials' Association (NEWMOA)
129 Portland Street, 6th Floor
Boston, MA 02114-2014
Phone: 617-367-8558
Website: http://www.newmoa.org/newmoa/htdocs/prevention/mercury/schools

Publications:

- *Getting Mercury Out of Schools: Why It's a Problem, Where It Is, What to Do* is a series of individual fact sheets for specific school staff members (e.g., facilities manager, science chairperson, medical personnel) on items that may contain mercury. An accompanying folder contains information for school administrators.
- *Identification of Mercury Devices in Schools* is a table to assist school staff and/or state and local technical assistance providers in identifying mercury materials commonly found in schools. Specific tables are available for science rooms, medical offices, and school facilities. Nonmercury alternatives are also identified.

U.S. Environmental Protection Agency
Mercury in Schools
Website: http://www.epa.gov/mercury/schools.htm

This website provides information about the health effects of mercury exposure, how to dispose of mercury-containing products, and how to handle a spill, as well as links to other useful sites.

Pesticides

Beyond Pesticides (formerly National Coalition Against the Misuse of Pesticides)
701 E Street SE, Suite 200
Washington, DC 20003
Phone: 202-543-5450
Fax: 202-543-4791
E-mail: info@beyondpesticides.org
Website: http://www.beyondpesticides.org
Beyond Pesticides publishes a bimonthly bulletin, *School Pesticide Monitor,* and a wide variety of brochures, information packets, and reports.

Pesticide Database of the Pesticide Action Network
Website: http://www.pesticideinfo.org
This database includes current toxicity and regulatory information for about 5,400 pesticide active ingredients and their transformation products.

EPA New England, Region 1
1 Congress Street, Suite 1100
Boston, MA 02114-2023
Phone: 888-372-7341
Website: http://www.epa.gov/region1/index.html

Massachusetts Department of Agricultural Resources
Pesticide Bureau
251 Causeway Street, Suite 500
Boston, MA 02114
Phone: 617-626-1700
Website: http://www.mass.gov/agr/pesticides/index.htm

Massachusetts Department of Public Health
Center for Environmental Health (CEH)
Bureau of Environmental Health Assessment (BEHA)
Environmental Toxicology Program
250 Washington Street, 7th Floor
Boston, MA 02108
Phone: 617-624-5757
Fax: 617-624-5777
TTY: 617-624-5286
Website: http://www.mass.gov/dph/beha/beha.htm

Playground Safety

ASTM (formerly known as American Society for Testing and Materials)
100 Barr Harbor Drive
P.O. Box C700
West Conshohocken, PA 19428-2959
Phone: 610-832-9585
Fax: 610-832-9555
Website: http://www.astm.org
Consensus standards and related technical information on playground equipment and surfaces are available from ASTM.

National Program for Playground Safety (NPPS)
School of HPELS, WRC 205
University of Northern Iowa
Cedar Falls, IA 50614-0618
Phone: 800-554-PLAY (7529)
Fax: 319-273-7308
E-mail: playground-safety@uni.edu
Website: http://www.playgroundsafety.org
Established by the University of Northern Iowa in 1995, with funding from CDC, NPPS serves as a national resource for the latest educational and research information on playground safety.

U.S. Access Board
1331 F Street NW, Suite 1000
Washington, DC 20004-1111
Phone: 800-872-2253 or 202-272-0080
TTY: 202-272-0082
Fax: 202-272-0081
E-mail: info@access-board.gov
Website: http://www.access-board.gov
The U.S. Access Board, also known as the Architectural and Transportation Barriers Compliance Board, is an independent federal agency devoted to accessibility for people with disabilities. Information and technical assistance are available on the site including building and facility design guidelines applicable to schools.

> **Publication:** *Play Area Guidelines* (2000) provides the basis for enforceable standards to be adopted by the Department of Justice for new construction and alterations of play areas covered by the Americans with Disabilities Act. The guidelines include scoping and technical provisions for ground-level and elevated play components, accessible routes, ramps and transfer systems, ground surfaces, and soft, contained play structures. Also included are tables of equipment and ground surface costs, typical maintenance frequencies and costs, and the number of small entities affected by the guidelines.

U.S. Consumer Product Safety Commission
Washington, DC 20207-0001
Phone: 800-638-2772
Fax: 301-504-0124 or 301-504-0025
E-mail: info@cpsc.gov
Website: http://www.cpsc.gov

> **Publication:** *Handbook for Public Playground Safety* is available at the toll-free number above and at http://www.cpsc.gov/CPSCPUB/PUBS/325.pdf.

Plumbing and Gas Standards

Massachusetts Division of Professional Licensure
Board of State Examiners of Plumbers and Gas Fitters
239 Causeway Street
Boston, MA 02114
Phone: 617-727-9952
Website: http://www.mass.gov/dpl/boards/pl/index.htm

Public Swimming Pools

Massachusetts Department of Public Health
Division of Community Sanitation
250 Washington Street, 7th Floor
Boston, MA 02108
Phone: 617-624-5757
Fax: 617-624-5777
TTY: 617-624-5286

and
180 Beaman Street
West Boylston, MA 01583
Phone: 508-792-7880
Website: http://www.mass.gov/eohhs
Information about and from the Community Sanitation Program is accessible through the Executive Office of Health and Human Services (EOHHS) Web Portal, which contains centralized, easy-to-navigate information across all EOHHS agencies.

Radon

Massachusetts Department of Public Health
Center for Environmental Health
250 Washington Street, 7th Floor
Boston, MA 02108
Phone: 617-624-5757
Fax: 617-624-5777
TTY: 617-624-5286
Website: http://www.mass.gov/dph/beha/beha.htm

Massachusetts Department of Public Health
Radiation Control Program
90 Washington Street
Dorchester, MA 02121
Phone: 617-427-2944
Fax: 617-427-2925
Website: http://www.mass.gov/dph/rcp/radia.htm

National Environmental Health Association (NEHA)
National Radon Proficiency Program (NRPP)
P.O. Box 2109
Fletcher, NC 28732
Phone: 800-269-4174 or 828-890-4117
Fax: 828-890-4161
E-Mail: angel@neha-nrpp.org
Website: http://www.neha-nrpp.org/
A nationally recognized certification program for radon professionals maintaining the highest level of ethics and quality. The website is an informational resource for both professionals and the public.

National Radon Safety Board (NRSB)
14 Hayes Street
Elmsford, NY 10523
Phone: 866-329-3474
Fax: 914-345-1169
E-mail**:** info@NRSB.org
Website: http://www.nrsb.org/
The NRSB seeks to encourage the highest standards of practice and integrity in radon services through the development of independent standards and procedures for certifying, approving and accrediting radon testers, mitigators, measurement devices, chambers and laboratories. It is an independent, nonprofit organization modeled on the American Board of Health Physics and is governed by a Certification Panel representing different facets of the radon industry, home inspectors, state governments, and consumer interests.

National Safety Council (NSC)
1121 Spring Lake Drive
Itasca, IL 60143-3201
Phones: (24-hour automated information line) 800-SOS-RADON (800-767-7236)

(Live information specialists, 9-5, EST, M-F) 1-800-55-RADON (1-800-557-2366)
(Live information line for Spanish speakers) 1-866-528-3187
Website: http://www.nsc.org
The NSC site offers access to many resources on radon, including information about how to order low-cost, short-term test kits, pamphlets and brochures, on-site articles, FAQs and links.

U.S. EPA Region 1
1 Congress Street
Boston, MA 02114-2023
Phone/TTY: 617-918-2082
Website: http://www.epa.gov/region01

Recycling

Massachusetts Environmental Protection Department
Office of Solid Waste
Phone: 617-292-5500
Fax: 617-556-1049

Publication: *Manual for Implementing School Recycling Programs* provides teachers and administrators with information on establishing recycling programs in schools. It is available online at http://www.mass.gov/dep/recycle/schools.htm.

U.S. Environmental Protection Agency
EPA Student Center — Waste and Recycling
Website: http://www.epa.gov/students/waste.htm

Right-to-Know Law

Department of Public Health
Center for Environmental Health
Emergency Response/Indoor Air Quality Program
250 Washington Street, 7th Floor
Boston, MA 02108
Phone: 617-624-5757
Fax: 617-624-5777
TTY: 617-624-5286
Website: http://www.mass.gov/dph/beha/beha.htm

Massachusetts Departments of Labor and Workforce Development
Division of Occupational Safety
Occupational Hygiene/Indoor Air Quality Program
1001 Watertown Street
West Newton, MA 02165
Phone: 617-969-7177
Website: http://www.mass.gov/dos/iaq/index.htm

Publication: *Healthy Schools Program Training Manual,* developed for the Division of Occupational Safety's 2003 conference "Creating Healthy Schools in Massachusetts: Working Together, Finding Solutions," contains 26 sections covering particular issues related to environmental or occupational health and safety in schools.

School Buses

New England Asthma Regional Council
The Medical Foundation
622 Washington Street, 2nd Floor
Dorchester, MA 02124
Phone: 617-451-0049 x504

Website: http://www.asthmaregionalcouncil.org

Materials: *Toolkit for Reducing Diesel Emissions: Resources for School Communities* is a toolkit designed to help school communities, environmental officials, and others make informed decisions about ways to reduce harmful diesel emissions from school buses. It includes sample policies and newsletter articles created by the Asthma Regional Council, as well as resources developed by numerous organizations and agencies around the country. Of particular interest: "Options for Reducing Pollution from School Buses" and a Model Anti-Idling Policy.

U.S. Environmental Protection Agency
Clean School Bus USA
National Vehicle and Fuel Emissions Laboratory
2000 Traverwood Drive
Ann Arbor, MI 48105
Phone: 734-214-4780 (Clean School Bus USA Team)
Website: http://www.epa.gov/cleanschoolbus/index.htm
Clean School Bus USA works to reduce both children's exposure to diesel exhaust and the amount of air pollution created by diesel school buses.

School Safety and Security

Florida Department of Education
Office of Educational Facilities
Website: http://www.firn.edu/doe/edfacil/safe_schools.htm

Publication: *Florida Safe School Design Guidelines: Strategies to Enhance Security and Reduce Vandalism* (2003) focuses on ways that proper design and management of the physical environment can help prevent criminal behavior on school campuses, covering design and maintenance issues for the entire school site, interior spaces, systems, and equipment.

National Clearinghouse for Educational Facilities
National Institute of Building Sciences
1090 Vermont Avenue NW, Suite 700
Washington, DC 20005
Phone: 888-552-0624 or 202-289-7800
Website: http://www.edfacilities.org

The Safetyzone
Website: http://www.safetyzone.org/index.html
The Safetyzone, a clearinghouse for information and material related to school safety, is a project of the Northwest Regional Educational Laboratory (NWREL), which provides research and development assistance to education, government, community agencies, business, and labor, primarily in the states of Alaska, Idaho, Montana, Oregon, and Washington.

Publication: *Ensuring Quality School Facilities and Security Technologies,* fourth in a series of 8 school safety technical assistance guides, is intended to help educators and other community members understand the relationship between school safety and school facilities, including technology. It may be downloaded from the Safetyzone website.

U.S. Department of Health and Human Services
Office of Special Education and Rehabilitative Services (OSERS)
400 Maryland Avenue SW
Washington, DC 20202
Phone: 202-245-7459
Website: http://www.ed.gov/about/offices/list/osers/osep/gtss.html
OSERS offers a guide to safe schools entitled *Early Warning, Timely Response: A Guide to Safe Schools* Available online at the website above, it offers research-based practices designed to assist school communities identify these warning signs early and develop prevention, intervention and crisis response plans.

Sun Safety

Centers for Disease Control and Prevention
Skin Cancer Primary Prevention and Education Initiative
Division of Cancer Prevention and Control
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention
4770 Buford Highway NE, MS K-64
Atlanta, GA 30341-3717
Phone: 888-842-6355 or 770-488-4751
Fax: 770-488-4760
E-mail: cancerinfo@cdc.gov
Website: http://www.cdc.gov/healthyyouth/skincancer/guidelines/summary.htm

Melanoma Education Foundation
P.O. Box 2023
Peabody, MA 01960
Phone: 978-535-3080
Fax: 978-535-5602
E-mail: skincheck@comcast.net
Website: http://www.skincheck.org
A nonprofit, grassroots organization that offers a website dedicated self-detection, prevention, and teaching of melanoma.

Melanoma Foundation of New England (formerly Massachusetts Melanoma Foundation)
66 Commonwealth Avenue, 1st Floor
Concord, MA 01742
Phone: 617-232-1424
E-mail: info@massmelanoma.org
Website: http://www.massmelanoma.org
Created in 1999 to combat the rising rate of melanoma and melanoma deaths in Massachusetts, the foundation seeks to eliminate melanoma and non-melanoma skin cancer.

National Association of State Boards of Education
277 South Washington Street, Suite 100
Alexandria, VA 22314
Phone: 703-684-4000
Fax: 703-836-2313
Website: http://www.nasbe.org/HealthySchools/sun_safety.html#top

National Safety Council
1025 Connecticut Avenue NW, Suite 1200
Washington, DC 20036
Phone: 202-293-2270
Fax: 202-293-0032
Website: http://www.nsc.org/ehc/sunsafe.htm
A web page dedicated to educating the public about sun safety.

Project S.A.F.E.T.Y.
University of Texas M. D. Anderson Cancer Center
1515 Holcombe Blvd., Unit 240
Houston, TX 77045
Phone: 713-745-1205
Fax: 713-792-0800
E-mail: mahearn@mdanderson.org
Website: http://www.mdanderson.org/projectsafety

A science-based skin cancer awareness and prevention program (and extensive curriculum) developed by The University of Texas M. D. Anderson Cancer Center with Texas Cancer Council funding.

SHADE Foundation of America
Virginia G. Piper Cancer Center
10510 N. 92nd Street, Suite 100
Scottsdale AZ 85258
Phone: 866-41-SHADE (866-417-4233) or 480-614-2278
Website: http://www.shadefoundation.org
The foundation's mission is to Protect, Educate, Encourage, and Implement appropriate sun safety policies to assist schools in developing and implementing a program to ensure all children spend their days in a "SunWise" environment.

Eastern regional address:
SHADE Foundation
77 Avenue Louis Pasteur
Boston, MA 02115

Sun Protection Foundation
10 Tupelo Drive
Hingham, MA 02045
Phone: 508-960-9633
Website: http://www.sunprotectionfoundation.org
A non-profit educational foundation established to assist schools with the development and implementation of a comprehensive sun protection program.

U.S. Environmental Protection Agency
SunWise Program
1200 Pennsylvania Avenue NW (6205J)
Washington, DC 20460
Phone: 202-343-9361
Fax: 202-343-2338
Website: http://www.epa.gov/sunwise/schools.html

Toxic Substances

Toxic Substance Control Act (TSCA) Hotline
Assistance Information Service
401 M Street SW
Washington, DC 20024
Phone: 202-554-1404
TTD: 202-554-0551
Fax: 202-554-5603

Underground Storage Tanks

Massachusetts Department of Environmental Protection
1 Winter Street
Boston, MA 02108-4746
Phone: 617-292-5500
Website: http://www.mass.gov/dep/dephome.htm

U.S. Environmental Protection Agency
Office of Underground Storage Tanks (OS-400)
401 M Street SW
Washington, DC 20460

Water Systems, School-Operated

Massachusetts Department of Environmental Protection
1 Winter Street
Boston, MA 02108-4746
Phone: 617-292-5500
Website: http://www.mass.gov/dep/dephome.htm

U.S. EPA Region 1
Water Supply Branch
1 Congress Street
Boston, MA 02114-2023
Phone/TTY: 617-918-2082
Website: http://www.epa.gov/region01

Weather

Massachusetts Emergency Management Agency
400 Worcester Road
Framingham, MA 01702-5399
Phone: 508-820-2000
Fax: 508-820-2030

National Oceanic Atmospheric Administration
National Weather Service
Office of Climate, Water, and Weather Services
1325 East West Highway
Silver Spring, MD 20910
Website: http://weather.gov/safety.php
This webpage contains links to NOAA websites that contain information about weather safety.

REFERENCES

American Conference of Governmental Industrial Hygienists. (1986). *Documentation of the threshold limit values*. Cincinnati, OH: Author.

American Conference of Governmental Industrial Hygienists. (1989). *Guidelines for the assessment of bioaerosols in their indoor environment.* Cincinnati, OH: Author.

American Conference of Governmental Industrial Hygienists. (1998). *Industrial ventilation: A manual of recommended practice* (23rd ed.). Cincinnati, OH: Author.

American Conference of Governmental Industrial Hygienists. (1999). *Guide to occupational exposures — 1999*. Cincinnati, OH: Author.

American Society of Heating, Refrigerating and Air-Conditioning Engineers. (1989). *ASHRAE Standard: Ventilation for acceptable indoor air quality* (Sections 5.11, 5.12). Atlanta, GA: Author.

American Society of Heating, Refrigerating and Air-Conditioning Engineers. (1992). *Gravimetric and dust spot procedures for testing air-cleaning devices used in general ventilation for removing particulate matter* (ANSI/ASHRAE 52.1-1992). Atlanta, GA: Author.

American Society of Heating, Refrigerating and Air-Conditioning Engineers. (1999). *Ventilation for acceptable indoor air quality* (ANSI/ASHRAE 62-1999). Atlanta, GA: Author.

Axelrad, B. & Jones, B. (2002). *Toward comprehensive federal guidelines for school environmental health*. Proceedings of the 9th International Conference on Indoor Air Quality and Climate. Santa Cruz, CA: Indoor Air. Retrieved in 2005 from http://www.chps.net/info/iaq_papers/PaperVI.1.pdf.

Banks, A. J. (2002). *Toward high school stockroom safety*. Paper presented at the American Chemical Society's Division of Chemical Education virtual conference. Retrieved in 2005 from http://www.chem.vt.edu/confchem/2002/c/banks/safetypaperhtml.htm.

Bartlett, K. H., Kennedy, S. M., Brauer, M., Van Netten, C. & Dill, B. (2004). Evaluation and a predictive model of airborne fungal concentrations in school classrooms. *Annals of Occupational Hygiene, 48*(6), 547–554.

Berkowitz, Z., Haugh, G. S., Orr, M. F. & Kaye, W. E. (2002). Releases of hazardous substances in schools: Data from the Hazardous Substances Emergency Events Surveillance System, 1993–1998. *Journal of Environmental Health, 65*(2), 20–27, 37, 39.

Berry, M. A. (2002). *The contribution of restoration and effective operation and maintenance programs on indoor environmental quality and education performance in schools*. Paper presented at the International Conference on Indoor Air Quality and Climate. Santa Cruz, CA: Indoor Air. Retrieved in 2005 from http://www.chps.net/info/iaq_papers/PaperII.3.pdf.

Berry, M. A. (2001). *Educational performance, environmental management, and cleaning effectiveness in school environments*. Dalton, GA: Carpet and Rug Institute. Retrieved in 2005 from http://www.carpet-rug.com/pdf_word_docs/0104_school_environments.pdf.

Berry, M. A. (1994). *Protecting the built environment: Cleaning for health.* Chapel Hill, NC: Tricomm Twenty-First Press.

Bowman, D. H. (2003). New fire code in Massachusetts targets classroom displays. *Education Week, 22*(42), 3.

Bright, P., Mader, M., Carpenter, D. & Hermon-Cruz, I. Z. (1992). *Guideline for indoor air surveys*. Brooks Air Force Base, TX: Armstrong Laboratory, Occupational and Environmental Health Directorate. NTIS AL-TR-1992-0016.

Buckley, J., Schneider, M. & Shang, Y. (2004). *The effects of school facility quality on teacher retention in urban school districts*. Washington, DC: National Clearinghouse for Educational Facilities. Retrieved in 2005 from http://www.edfacilities.org/pubs/teacherretention.html.

Building Officials and Code Administrators International. (1993). *The BOCA national mechanical code/1993* (8th ed.). Country Club Hill, IL: Author.

Burge, H. A., Hoyer, M. (1990). Focus on …indoor air quality. *Applied Occupational and Environmental Hygiene, 5*(2), 88.

Burge, H. A. (1995). *Bioaerosols*. Boca Raton, FL: Lewis Publishing Company.

California Department of Education. (2002). *School safety and security*. Sacramento, CA: School Safety and Violence Prevention Office. Retrieved in 2005 from http://dev.ossa.net.

Carson, C. (2003). In compliance: The fire problem in educational occupancies. *NFPA Journal,* September/October. Retrieved in 2005 from http://www.nfpa.org.

Centers for Disease Control and Prevention. (1998). Compendium of measures to control chlamydia psittaci infection among human psittacosis and pet birds (avian chlamydiosis). *Morbidity and Mortality Weekly Report, 47*, RR-10.

Centers for Disease Control and Prevention. (2002). Guidelines for school programs to prevent skin cancer. *Morbidity and Mortality Weekly Report, 51,* RR-4.

Colgan, C. (2003). Is mold the new asbestos? *American School Board Journal, 190*(10), 14–18.

Committee on Damp Indoor Spaces and Health, Board on Health Promotion and Disease Prevention, Institute of Medicine. (2004). *Damp indoor spaces and health.* Washington, DC: National Academies Press.

Cote, A. (2003). *Fire protection handbook.* Quincy, MA: National Fire Protection Association.

Curran, E. B., Holle, R. L., López, R. E. (1997). Lightning fatalities, injuries and damage reports in the United States: 1959-1994. NOAA technical Memorandum NWS SR 193. Retrieved in 2006 from http://www.nssl.noaa.gov/papers/techmemos/NWS-SR-193/techmemo-sr193.html.

DeLozier, D., Odom, E. L. & Wechsler, H. (2004). *Food-safe schools action guide: A coordinated school health approach for foodborne illness prevention*. Paper presented at Public Health and the Environment, Division of Adolescent and School Health, Centers for Disease Control and Prevention, Washington, DC.

DeMary, J. L., Owens, M. & Ramnarain, A. K. V. (2000). *School safety audit protocol*. Richmond, VA: Virginia State Dept. of Education. Retrieved from http://www.pen.k12.va.us/go/VDOE/Instruction/schoolsafety/safetyaudit.pdf.

Dolan, T. G. (2004). Life/fire safety. *School Planning and Management, 43*(8), 25–28.

Dorn, M. (2005). Access denied. *School Planning and Management, 44*(4), 20–26.

Dorn, M., Thomas, G., Wong, M. & Shepherd, S. (2004). *Jane's safe schools planning guide for all hazards.* Alexandria, VA: Jane's Information Group.

Dresser, T. H. (1998). *A case study of environmental, health and safety issues involving the Burlington, Massachusetts public school system: Tips, suggestions, and resources for investigating and resolving EHS*

issues in schools. Washington, DC: Environmental Protection Agency; Burlington, MA: Burlington Board of Health.

Dresser, T. H. (2000). *A beginner's guide to reviewing EHS issues at your school.* Burlington, MA: Burlington Board of Health. Retrieved in 2005 from http://www.epa.gov/region7/education_resources/teachers/ehsprime.htm.

Earthman, G. I. (2004). *Prioritization of 31 criteria for school building adequacy.* Baltimore: American Civil Liberties Union Foundation of Maryland. Retrieved in 2005 from http://www.aclu-md.org/facilities_report.pdf.

Environmental Health Investigations Branch and the Environmental Health Laboratory Branch, California Department of Health Services. (2002). Mold in my school: What do I do? *National Clearinghouse for Educational Facilities,* March. Retrieved in 2005 from http://www.edfacilities.org/pubs/mold.html.

Epstien, B. L. (2001). Childhood asthma and indoor allergens: The classroom may be a culprit. *Journal of School Nursing, 17*(5), 253–257.

Eskenazi, B., Bradman, A. & Castorina, R. (1999). Exposures of children to organophosphate pesticides and their potential adverse health effects. *Environmental Health Perspectives, 107*(S-3), 409–419.

Federal Emergency Management Agency (2006). Resources for parents and teachers: How schools can become more disaster resistant. Retrieved in 2006 from http://www.fema.gov/kids/schdizr.htm.

Federal Emergency Management Agency. (2004). *Design guide for improving school safety in earthquakes, floods, and high winds.* Washington, DC: Author. Retrieved in 2005 from http://www.fema.gov/fima/rmsp424.shtm.

Federal Emergency Management Agency. (2003). *Primer to design safe school projects in case of terrorist attacks* (FEMA Report Number 428). Washington, DC: Author. Retrieved in 2005 from http://www.fema.gov/pdf/fima/fema428.pdf.

Feeney, M. (2001). *Chemical storage in schools and the impact on indoor air quality*. Boston, MA: Center for Environmental Health, Massachusetts Department of Public Health. Retrieved in 2005 from http://www.mass.gov/dph/beha/iaq/articles/mhoa.pdf.

Fitzemeyer, T. (2000). Airing it out. *American School and University, 73*(2), 20–25. Retrieved in 2005 from http://asumag.com/mag/university_airing.

Garcia, C. (2001). *Measuring the use of safety technology in American schools: A national survey of school safety administrators.* Indianapolis, IN: Institute for Forensic Imaging. Retrieved from http://www.ifi-indy.org/school%20security/technology.pdf.

Gold, D. R. (1992). Indoor air pollution. *Clinics in Chest Medicine, 13*(2), 215–229.

Goldberg, E. (2005). Animals in school. *Allergy and Asthma Network; Mothers of Asthmatics*. Retrieved in 2005 from http://www.aanma.org/schoolhouse/sh_animalsinschool.htm.

Green, M. W. (1999). *The appropriate and effective use of security technologies in U.S. schools: A guide for schools and law enforcement agencies.* Washington, DC: National Institute of Justice; Office of Justice Programs; U.S. Department of Justice. Retrieved in 2005 from http://www.ncjrs.org/school/pdf.htm.

Greife, A. (2004). Safety checklist for public schools: A useful tool for administrators and classroom teachers. *Journal of Occupational and Environmental Hygiene, 1*(6), D66–67.

Hart, G. K. (2004). New codes for stairwell lighting. *Facilities Manager, 20*(4), 43–45.

Healthy Schools Council Subcommittee. (2004). *Environmental health & safety issues in Massachusetts schools.* Boston, MA: Department of Public Health; Center for Environmental Health. Retrieved in 2005 from http://www.mass.gov/dph/beha/iaq/schools/schools.htm.

Healthy Schools Network. (2001). *Sanitizers and disinfectants guide*. Albany, NY: Healthy Schools Network. Retrieved in 2005 from http://www.healthyschools.org/guides_materials.html.

Herrick, R. F., McClean, M. D., Meeker, J. D., Baxter, L. K. & Weymouth, G. A. (2004). An unrecognized source of PCB contamination in schools and other buildings. *Environmental Health Perspectives, 112*(10), 1051–1053.

Hill, B., Craft, B., & Burkart, J. (1992). Carbon dioxide, particulates, and subjective human responses in office buildings without histories of indoor air quality problems. *Applied Occupational and Environmental Hygiene, 7*(2): 101–111.

Institute for Environmental Assessment. (2001). *Lead in American schools: What school districts should and should not do.* Brooklyn Park, MN: Author. Retrieved in 2005 from http://www.ieainstitute.com/HazardousMaterials/knowledge-base.

Institute of Inspection, Cleaning and Restoration Certification. (2000). *S001 Standards reference guide for professional on-location cleaning of installed textile floor covering materials*. Vancouver, WA: Author.

Jerard, A. (2001). *Hazards in the art classroom*. Retrieved in 2005 from the University of Florida School of Art and Art History website, http://www.arts.ufl.edu/art/rt_room/teach/art_hazards.html.

Lstiburek, J. & Brennan, T. (2001). *Read this before you design, build or renovate*. Westford, MA: Building Science Corporation; Boston, MA: U.S. Department of Housing and Urban Development, Region I.

Mass. Act. (2000). *An act protecting children and families from harmful pesticides.* 2000 Mass Acts c.85, s.6E.

Massachusetts Board of Building Regulations and Standards. (1997). *Mechanical ventilation* (Code of Massachusetts Regulations, 780 CMR 1209.0). Boston, MA: Author.

Massachusetts Department of Food and Agriculture. (1996). *Integrated pest management kit for building managers*. Boston, MA: Author.

Massachusetts Department of Labor and Industries, Division of Occupational Hygiene. (1989). *Understanding MSDSs: Your right to know*. West Newton, MA: Author.

Massachusetts Department of Public Health. (1989). *Storage and disposal of infected or physically dangerous medical or biological waste* (105 CMR 480.000 Massachusetts State Sanitary Code Chapter VIII). Boston, MA: Author.

Massachusetts Department of Public Health. (1989). *Minimum sanitation standards for food establishments* (105 CMR 480.000 Massachusetts State Sanitary Code Chapter X). Revised 1991. Boston, MA: Author.

Massachusetts Department of Public Health. (1997). *Requirements to maintain air quality in indoor skating rinks* (105 CMR 675.000 Massachusetts State Sanitary Code, Chapter XI). Boston, MA: Author.

Massachusetts School Building Authority (2006). *School Building Grant Program:* General Site and School Construction Standards, (963 CMR 2.00: s. 2.04).

McGovern, M. (1996). *Underground fuel storage tanks.* Scottsdale, AZ: Council of Educational Facility Planners, Intl. Retrieved in 2005 from http://www.cefpi.org/issue4.html.

MEHRC (1997). *Indoor air quality for HVAC operators & contractors workbook*. Philadelphia, PA: Mid-Atlantic Environmental Hygiene Resource Center.

Mendell, M. & Heath, G. (2004). *A summary of scientific findings on adverse effects of indoor environments on students' health, academic performance and attendance.* Washington, DC: U.S. Dept. of Education, Office of the Under Secretary. Retrieved in 2005 from http://www.healthyschools.org/documents/U.S.DeptofEducationStudy.pdf.

Miller, R.W. (2004). How environmental hazards in childhood have been discovered: Carcinogens, teratogens, neurotoxicants, and others. *Pediatrics, 113,* 945–951.

Moore, D. (2004). Many merits of a clean school. *School Planning and Management, 43*(6), 10.

National Education Association's Educational Support Professional Quality Division and the Health Information Network. (2004). *Take a deep breath and thank your custodian: Develop a local association IAQ plan* and *Take a deep breath and thank your custodian: Tips and tools for improving IAQ in schools.*. Washington, DC: Author. Retrieved in 2005 from http://www.neahin.org/programs/environmental/IAQ.custodian.guide.pdf.

National Fire Protection Association. (1991). *Fire protection guide to hazardous materials* (10th ed.). Quincy, MA: Author.

National Fire Protection Association (1996). *Flammable and combustible liquids code*. Quincy, MA: Author.

National Fire Protection Association (1996). NFPA 45: *Fire Protection for Laboratories Using Chemicals.* Quincy, MA: Author.

National Fire Protection Association (2004). *Structure Fires in Educational Facilities*. Quincy, MA: NFPA, Fire Analysis and Research Division. Retrieved in 2006 from http://www.nfpa.org/assets/files/PDF/EducationalSummary.pdf.

National Forum on Educational Statistics. (2003). *Planning guide for maintaining school facilities.* Washington, DC: Author. Retrieved in 2005 from http://nces.ed.gov/forum/pub_2003347.asp.

National Institute for Occupational Safety and Health. (1997). *NIOSH alert: Preventing allergic reactions to natural rubber latex in the workplace.* Atlanta, GA: Author.

National Institute for Occupational Safety and Health. (1998). *Latex allergy prevention*. Atlanta, GA: Author.

National Institute for Occupational Safety and Health, Hazards Evaluations and Technical Assistance Branch, Division of Surveillance, Hazard Evaluation, and Field Studies. (1987). *Guidance for indoor air quality investigations*. Cincinnati, OH: Author.

National Weather Service (updated 2001). *Can severe weather occur in my community?* Office of Climate, Water and Weather Services, StormReady program. Retrieved in 2006 from http://www.stormready.noaa.gov/links.htm.

Naylor, C. (1997). *Teacher safety in portable classrooms.* British Columbia: B.C. Teacher's Federation Research Department. Retrieved in 2005 from http://www.bctf.bc.ca/ResearchReports/97wlc01/.

New York City Department of Health. (2002). *Guidelines on assessment and remediation of fungi in indoor environments.* New York: Author. Retrieved in 2005 from http://www.ci.nyc.ny.us/html/doh/html/epi/moldrpt1.html.

Norback, D., Torgen, M., & Edling, C. (1990). Volatile organic compounds, respirable dust, and personal factors related to prevalence and incidence of sick building syndrome in primary schools. *British Journal of Industrial Medicine, 47*:740.

Northeast States Emergency Consortium (2006). *History of earthquakes in New England.* Retrieved in 2006 from http://www.nesec.org/hazards/Earthquakes.cfm.

Northeast Waste Management Officials' Association. (2005). *Getting mercury out of schools and communities*. Boston, MA: Massachusetts Department of Environmental Protection; Massachusetts Executive Office of Environmental Affairs. Retrieved in 2005 from http://www.newmoa.org/newmoa/htdocs/prevention/mercury/schools.

Occupational Safety and Health Administration. (1994). *Indoor air quality: Proposed regulation* (Federal Register 59:15968-16039). Appendix A. Washington, DC: Author.

Occupational Safety and Health Administration. (1997). *Limits for air contaminants* (Code of Federal Regulations, 29 CFR 1910.1000). Table Z-1-A. Washington, DC: Author.

Petrocelly, K. L. & Thumann, A. (2000). *Facilities evaluation handbook: Safety, fire protection, and environmental compliance* (2nd ed.). New York: Prentice Hall.

Piper, J. (2004). IAQ and the older facility. *Maintenance Solutions, January*. Retrieved in 2005 from http://www.facilitiesnet.com/ms/article.asp?id=1759.

Redlich, C., Sparer, J. & Cullen, M. (1997). Sick-building syndrome. *Lancet, 349,* 1013–1016.

Roderick, L. M. (2004). The ergonomics of children in playground equipment safety. *Journal of Safety Research, 35*(3), 249–254.

Roeder, W.P. & Vavrek, R.J. (2006). *Ligntning safety for schools: An update.* Retrieved in 2006 from http://www.lightningsafety.noaa.gov/resources/ASSE-Schools.pdf

Rohr, K. D. (2004). *Structure fires in educational properties.* Quincy, MA: Fire Analysis and Research Division, National Fire Protection Association.

Rosenstock, L. (1996). NIOSH testimony to the U.S. Department of Labor on air quality. *Applied Occupational & Environmental Hygiene, 11*(12), 1368.

Santilli, J. & Rockwell, W. (2003). Fungal contamination of elementary schools: A new environmental hazard. *Annals of Allergy, Asthma and Immunology, 90*(2), 203–208.

Schmidt Etkin, D. (1992). *Office furnishings/equipment & IAQ health impacts, prevention & mitigation*. Arlington, MA: Cutter Information Corporation.

Schneider, T. (2001). *Newer technologies for school security*. Eugene, OR: ERIC Clearinghouse on Educational Management, University of Oregon.

Schneider, T. (2002). *Safe and secure: Guides to creating safer schools* (Guide 4). Portland, OR: Northwest Regional Educational Laboratory. Retrieved in 2005 from http://www.safetyzone.org/pdfs/ta_guides/packet_4.pdf.

School Nurse. (2005). *Animals in schools: A zoonosis threat? An interview with Lucille H. Nix, DVM*. School Health Alert article for website schoolnurse.com: http://www.schoolnurse.com/med_info/Animals_in_school.html.

Sheet Metal and Air Conditioning Contractors' National Association. (1994). *HVAC systems commissioning manual (1st ed).* Chantilly, VA: Author.

Sheet Metal and Air Conditioning Contractors' National Association. (1995). *IAQ guidelines for occupied buildings under construction (1st ed).* Chantilly, VA: Author.

Sheet Metal and Air Conditioning Contractors' National Association. (1998). *Indoor air quality: A systems approach (3rd ed).* Chantilly, VA: Author.

Shendell, D., Barnett, C. & Boese, S. (2004). *Science-based recommendations to prevent or reduce potential exposures to biological, chemical, and physical agents in schools.* Albany, NY: Healthy Schools Network. Retrieved in 2005 from http://www.healthyschools.org/documents/HPSchlsWhtPpr.pdf.

Shideler, L. (2000). A clean school is a healthy school. *American School and University, 73*(9), 52–56. Retrieved in 2005 from http://asumag.com/mag/university_flooring_clean_school.

Small, B. M. (2003). Creating mold-free buildings: A key to avoiding health effects of indoor molds. *Archives of Environmental Health, 58*(8), 523–527.

Spina Bifida Association of America. (2001). *Latex in the home and community.* Updated spring 2001. Washington, DC: Author. Retrieved in 2005 from http://www.sbaa.org/html/sbaa_mlatex.html.

Storey, E., Dangman, K. H., Schenck, P., DeBernardo, R. L., Yang, C. S., Bracker, A., et al. (2004). *Guidance for clinicians on the recognition and management of health effects related to mold exposure and moisture indoors*. Farmington, CT: Center for Indoor Environments and Health at University of Connecticut Health Center. Retrieved in 2005 from http://www.oehc.uchc.edu/clinser/MOLD%20GUIDE.pdf.

Taras, H., Duncan, P., Luckenbill, D., Robinson, J., Wheeler, L. & Wooley, S. (2004). *Health, mental health and safety guidelines for schools*. Retrieved in 2005 from http://www.schoolhealth.org.

Thornburg, D. (2000). Filter selection: A standard solution. *Engineering Systems, 17*(6), 74–80.

Torres, V. M. (2000). *Indoor air quality in schools*. Austin, TX: University of Texas, Texas Institute for the Indoor Environment. Retrieved in 2005 from http://www.utexas.edu/research/ti2e/IAQ_in_Schools.pdf.

U.S. Environmental Protection Agency. (1992). *Indoor biological pollutants.* Research Triangle Park, NC: Environmental Criteria and Assessment Office, Office of Health and Environmental Assessment (ECAO-R-0315).

U.S. Environmental Protection Agency. (2000). *Managing asthma in the school environment*. Washington, DC: Office of Air and Radiation, Office of Radiation and Indoor Air, Indoor Environments Division (EPA 402-K-00-003).

U.S. Environmental Protection Agency. (2000). *National ambient air quality standards (NAAQS).* Washington, DC: Office of Air Quality Planning and Standards. Retrieved in 2005 from http://www.epa.gov/air/criteria.html.

U.S. Environmental Protection Agency. (2001). *Mold remediation in schools and commercial buildings*. Washington, DC: Office of Air and Radiation, Indoor Environments Division (EPA 402-K-01-001). Retrieved in 2005 from http://www.epa.gov/iaq/molds/mold_remediation.html.

U.S. Environmental Protection Agency. (2003). *Are you providing safe drinking water at your school?* Boston, MA: Environmental Protection Agency New England. Retrieved in 2005 from http://www.epa.gov/ne/eco/drinkwater/pdfs/Drinking-Water-Booklet.pdf.

U.S. Environmental Protection Agency. (updated 2006). *An introduction to indoor air quality: Organic gases (volatile organic compounds - vocs).* Washington, DC: Office of Air and Radiation, Indoor Environments Division. Retrieved in 2006 from http://www.epa.gov/iaq/voc.html#Sources.

Weise, G. (2001). Dry and safe. *American School and University, 74*(3), 349–350. Retrieved in 2005 from http://asumag.com/mag/university_maintenance_dry_safe.

Westerkamp, T. A. (2005). Restroom renovations, big benefits. *Maintenance Solutions, April*. Retrieved in 2005 from http://www.facilitiesnet.com/ms/article.asp?id=2782.

Windle, L. P. (2005). Plumbing volume control: High-traffic restroom design. *Building Operating Management, January*. Retrieved in 2005 from http://www.facilitiesnet.com/bom/article.asp?id=2428.

Note: Articles with PMID number have been indexed by PubMed for MEDLINE.

EXHIBITS

Exhibit 4-1 Required Mechanical Ventilation Air in Frequently Encountered Building Spaces/Areas

Exhibit 4-2 Carbon Dioxide Air Concentration Standards

Exhibit 4-3 Potential Sources of Indoor Air Pollutants

Exhibit 4-4 Sanitizing Solutions for Surfaces and Facilities in the School

Exhibit 4-5 Safeguarding Schools: Protective Measures

Exhibit 4-1 Required Mechanical Ventilation Air in Frequently Encountered Building Spaces/Areas

Facility/Area Type	***Outdoor air [cubic feet per minute (cfm) per occupant]*** [a]
Classroom	15
Auditorium	15
Dining room	15
Library	15
Gymnasium	20
Laboratory	20
Office space	20
School training shop	20
Beauty salon	25
Commercial dry cleaner	30
Smoking lounge[b]	60
Darkroom	0.5 cfm per square foot of floor space
Swimming pool (pool and deck area)	0.5 cfm per square foot of floor space
Pet shop	1 cfm per square foot of floor space
Public restroom[b]	75 cfm per water closet or urinal

[a] BOCA National Mechanical Code, 1993
[b] Exhaust ventilation required

Exhibit 4-2 Carbon Dioxide Air Concentration Standards

Carbon Dioxide Level	Health Effects	Standards or Use of Concentration	Reference
250–600 ppm	None	Concentrations in ambient air	Beard, R. R., 1982; NIOSH, 1987
600 ppm	None	Most indoor air complaints eliminated; used as reference for air exchange for protection of children	ACGIH, 1998; Bright et al., 1992; Hill, 1992; NIOSH 1987
800 ppm	None	Used as indicator of ventilation inadequacy in schools and public buildings; used as reference for air exchange for protection of children	Bell, A. A., 2000; SMACNA, 1998; Redlich et al., 1997; Rosenstock, 1996; OSHA, 1994; Gold, 1992; Burge et al., 1990; Norback, 1990
1,000 ppm	None	Used as indicator of ventilation inadequacy concerning removal of odors from interior of building	ASHRAE, 1989
950–1,300 ppm*	None	Used as indicator of ventilation inadequacy concerning removal of odors from interior of building	ASHRAE, 1999
5,000 ppm	No acute (short-term) or chronic (long-term) health effects	Permissible exposure limit/threshold limit value	ACGIH, 1999; OSHA, 1997
30,000 ppm	Severe headaches, diffuse sweating, and labored breathing	Short-term exposure limit	ACGIH, 1999; ACGIH, 1986

* Outdoor carbon dioxide measurement + 700 ppm

Exhibit 4-3 Potential Sources of Indoor Air Pollutants

Building renovations	**Mimeograph machines**	**Water heaters**
Vocational shops	**Chemical storage**	**Air fresheners**
Art rooms	**New furniture**	**Dry cleaning solvents**
Pottery kilns	**Carpeting**	**Nail application solvents**
Custodial products	**Lamination machines**	**Spray paint**
Pesticide applications	**School/clerical supplies**	**Spray-on artificial snow**
Vehicle exhaust	**Fuel oil vapors**	**Dry-erase markers**
Wood stove smoke	**Sewer gas from dry traps**	**Dry-erase board cleaners**
Photocopier	**Janitorial supplies**	**Chalkboards**

Exhibit 4-4

Sanitizing Solutions for Surfaces and Facilities in the School

Area to Be Sanitized	Sanitizing Solution	Additional Directions
Tabletops, food contact surfaces, drinking fountains, water tables, water play equipment, cots/sleeping mats (everyday solution)	1 tablespoon bleach per 1 gallon of water (200 parts per million)	Should test 100 to 200 parts per million with test kit; works well in a spray bottle so it is convenient for use on tabletops between activities
Bathroom sinks, toilets, potty chairs	¼ cup bleach per 1 gallon of water or 1 tablespoon bleach per 1 quart of water	
Blood spills and vomitus	1 part bleach to 10 parts water	If spill occurs on dishes, tabletops, food contact surfaces, drinking fountains, or cots/sleeping mats, clean item with this solution, wash and rinse again, and use more-diluted solution for final rinse

Exhibit 4-5 Safeguarding Schools: Protective Measures

Recommendations from U.S. Department of Education,
Department of Homeland Security, and FBI

Short-term protective measures include reviewing procedures to safeguard school facilities and students and others within them. Those recommended in the DHS-FBI bulletin include:

- Review all school emergency and crisis management plans. Helpful guidance can be found at http://www.ed.gov/emergencyplan.
- Raise awareness among local law enforcement officers and school officials by conducting exercises relating to school emergency and crisis management plans.
- Raise awareness among school officials and students by conducting awareness training relating to the school environment that includes awareness of signs of terrorism.
- Raise community awareness of any potential threats as well as vulnerabilities.
- Prepare the school staff to act in a crisis situation.
- Consider a closed-campus approach to limit visitors.
- Consider a single entry point for all attendees, staff, and visitors.
- Focus patrols by law enforcement officers on and around school grounds.
- Ensure that school officials will always be able to contact school buses.
- Ensure that emergency communications from and to schools are working.
- Download the Red Cross brochure *Terrorism: Preparing for the Unexpected* at http://www.redcross.org/services/disaster/keepsafe/terrorism.pdf, and provide copies to students, staff, and faculty.
- Report any suspicious activity to law enforcement authorities.

Long-term protective measures should include physical enhancements to school buildings. Among the measures schools should consider are the following:

- Install secure locks for all external and internal doors and windows.
- Install window and external door protections with quick-release capability.
- Consider establishing a safe area (or safe areas) within the school for assembly and shelter during emergencies.
- Apply protective coating to windows in facilities that face traffic.

Other helpful information on school facilities can be found at http://www.edfacilities.org.

Activities to watch for may suggest potential unwelcome surveillance of educational facilities. These indicators alone may in fact reflect legitimate activity not related to terrorism. Multiple indicators, however, could suggest a heightened terrorist or criminal threat, including:

- unusual interest in security, entry points, and access controls or barriers such as fences or walls;
- interest in obtaining site plans for schools, bus routes, attendance lists, and other information about a school, its employees, or its students;
- unusual behavior such as staring at or quickly looking away from personnel or vehicles entering or leaving designated facilities or parking areas;
- observation of security reaction drills or procedures;
- increase in anonymous telephone or e-mail threats to facilities in conjunction with suspected surveillance incidents;
- foot surveillance involving individuals working together;
- mobile surveillance using bicycles, scooters, motorcycles, cars, trucks, sport utility vehicles, limousines, boats, or small aircraft;
- prolonged static surveillance using people disguised as panhandlers; shoe shiners; food, newspaper or flower vendors; or street sweepers, not previously seen in the area;
- discreet use of still cameras, video recorders, or note-taking at nontourist locations;

- use of multiple sets of clothing and identification;
- use of sketching materials (paper, pencils, etc.);
- questioning of security or facility personnel; and
- unexplained presence of unauthorized persons in places where they should not be.

Source: Excerpted from an October 6, 2004 policy letter from Eugene W. Hickok, Deputy Secretary, U.S. Department of Education, describing analysis and recommendations from the Department of Homeland Security and FBI in the wake of the terrorist incident involving a school in Beslan, Russia.

NOTE: To Print this Chapter, turn on Auto-Rotate in your Print Dialog Box

Chapter 5

HEALTH ASSESSMENT

Student Health Encounters

Population-Based Screening Programs

Physical Examinations

Summary

Resources

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 5

HEALTH ASSESSMENT

The school nurse and other school health professionals provide health assessments through daily encounters with students and staff, population-based screening programs, and routine physical examinations. A comprehensive health assessment process involves the following:

- collecting subjective and objective data related to students' health and behaviors;
- reviewing the data for accuracy and completeness;
- collecting more data as needed; and
- analyzing the data to identify health risks, health problems, and potential stressors that may impact a student's well-being.

STUDENT HEALTH ENCOUNTERS

Every day, schoolchildren seek assistance from school nurses for a variety of reasons. Each of these office encounters requires a health assessment, and many call for subsequent care or intervention. Every school health encounter, planned or unplanned, is also an opportunity for health education. Through professional development and continuing education, school nurses must prepare themselves to offer assessment, evaluation, and intervention for whatever situations arise. When adequate evaluation and intervention cannot be done in the school setting, referrals must be made to primary care, specialty care, or emergency care.

Students present with a variety of health concerns ranging from major injuries, life-threatening allergies, asthma, diabetes, and behavioral/emotional illnesses to colds, coughs, stomachaches, headaches, head lice, and minor cuts and abrasions. Sometimes students come to the health room to seek advice or support or to take a timeout from the stresses they encounter in the classroom, on the playground, and at home. The school nurse must be prepared to assess and evaluate all encounters quickly with a focus on returning students to the classroom in a timely manner, unless they need to be sent home or to another medical facility. Accurate recording of each encounter also permits the nurse to assess the history of students' health room visits.

Within the school setting, health encounters may occur in a variety of locations. Informal encounters in the hallway, cafeteria, playground, or classroom are often important opportunities for the nurse to learn about the student and his or her needs. Such casual encounters can work well as follow-up visits, since they allow the nurse greater insight into the whole child. School nurses may wish to explore use of handheld computers to ensure documentation of these informal encounters.

While best practices include having a full-time nurse present in every school building, some school systems require nurses to cover more than one school. (See Chapter 2 for recommended nurse-student ratios.) In such situations, a teacher, health aide, or school secretary may be students' initial health care contact. Any school staff who may serve as the initial contact in a health

encounter must understand both the role limitations of an unlicensed person and the types of questions that should be asked to assist licensed health care personnel in making an assessment. *Making a health care or nursing assessment remains the responsibility of the school nurse (RN) or other fully qualified and licensed medical personnel.*

Assessment

When assessing a student, the school nurse needs to obtain both *subjective* data (the history of the complaint) and *objective* data (e.g., the presenting symptoms of an illness, such as body temperature). In addition, the school nurse must skillfully explore the presenting symptoms by eliciting information about frequency, duration, severity, quality, and quantity of symptoms, as well as the setting in which symptoms first occurred, associated symptoms, and factors that make the symptoms better or worse. This information will guide the actions taken. Possible actions include further observation and assessment, notification of parents/guardians, and referral to a primary care, specialty care, or emergency care provider.

Nursing assessment includes the use of physical assessment tools (e.g., temperature, neuro signs, vital signs) and good clinical judgment of the situation and presenting symptoms. Clinical guidelines and standards of care should be followed.

Nurses using school health software will record information in electronic encounter forms. Exhibit 5-1 provides a sample student health encounter form for nurses using paper records. It is important that paper forms be designed in duplicate, so that the second copy (which should omit the student's name) may be collected centrally and entered into a database. (See Chapter 2 for a discussion of school health records.)

Interview

Often the initial interaction with the student is the most important part of the health room encounter. The question "What can I do for you today?" and other open-ended questions create an atmosphere of interest and caring that can encourage a student to share significant concerns affecting his/her health and well-being. A well-structured dialogue helps to differentiate the student's presenting physical problem from any anxiety, stress, fear, or other psychosocial issues. The health room is often viewed by medically, physically, or psychosocially challenged students as the safest place in the school and as a haven in their busy and often stressful school day. It is strongly recommended that the health room/suite have an area dedicated to ensuring privacy and confidentiality during the initial (and ongoing) student health encounter. (See Chapter 2 for a discussion of health room design.)

When conducting an assessment interview, use open-ended questions and statements, such as the following, to gather information.

- "Tell me about it."
- "When did it start?"
- "Has it ever happened before?"
- "What did you do?"
- "Did you tell the person who cares for you at home? What did they do?"
- "Are you taking any medication?"
- "How are you doing in your classes?"
- "What class do you have now?"

Questions may focus on the following areas: home life, food, activities, shelter, supervision, health care, support systems, and school progress. An awareness of students' cultural, ethnic, or socioeconomic backgrounds will enhance the nurse's assessment and plan.

Common Encounters in the School Health Office

The most common types of encounters are first aid, illness assessment, nursing procedures (e.g., catheterizations, insulin pump care, peak flow monitoring), chronic disease and medication management, and health education.

In elementary schools, first aid for injuries and acute illness assessment are primary focuses, as are medication administration, management of acute and chronic conditions, and behavioral health issues. In the secondary school setting, the first aid component relates more to injuries occurring in physical education classes, science laboratories, and industrial and consumer science classrooms. Although rare in elementary schoolchildren, headaches become increasingly common at the middle school and high school levels. In these higher grades, illness assessment, while still a vital part of the health encounters, may be less important than supportive care for psychosocial issues.

Preventive health education is an important area of focus at all levels. In elementary school, the emphasis is on handwashing, good hygiene, healthy eating, and regular exercise. In secondary school, promoting healthy choices in all aspects of life becomes important, including:

- good eating habits;
- physical exercise;
- the importance of adequate rest;
- how to balance schoolwork with employment and leisure activities;
- stress reduction;
- tobacco, drug, and alcohol use; and
- healthy relationships and sexuality.

Several other chapters in this manual provide useful information. Chapter 2 offers information and extensive resources about first aid, Chapter 6 addresses medication management, and Chapter 7 describes the care of children with special health care needs.

Illness Assessment

The following sections deal with assessment of 4 conditions frequently encountered in the school health office: headaches, sore throat, abdominal pain, and general malaise. The focus here is on the initial stage of assessment and not on medical management. The following 4 examples of encounters, contributed by the Simmons College Graduate Program in Primary Health Care Nursing, represent some suggested processes in assessing students. **Note:** If any of these symptoms are brought to the attention of an untrained school staff member, that staff member should refer the student to a licensed professional health provider (school physician, registered nurse, or nurse practitioner).

Below are descriptions of these 4 conditions. The descriptions are followed by examples of encounters with and assessments of students presenting with each of the 4 conditions. Each example includes three steps (questions, actions, assessment).

1. Headaches

Headaches can be classified as acute, chronic, or recurrent. *Acute* headaches are of recent onset and are frequently associated with infectious illnesses such as colds and influenza. *Chronic* and *recurrent* headaches may be associated with stress and tension, migraine, or potentially serious medical problems such as sinusitis, dental problems, concussion, or brain tumor. Up to 20% of all school-age children experience frequent, recurrent headaches.

2. Sore Throat (Pharyngitis)

Infections of the throat may be caused by either viruses or bacteria, but the vast majority of infections are viral. Because it is not possible to know whether the infection is viral or bacterial by inspection, a referral for a throat culture may be necessary to identify a bacterial infection such as strep throat, which when left untreated can lead to serious complications such as rheumatic fever or nephritis. Usually the results of throat cultures are available within 24–48 hours. Approximately 10%–20% of children who present with sore throat have a *Streptococcus* infection (strep throat). The typical incubation period for strep throat is 1–3 days. Viral infections of the throat, as part of a cold or upper respiratory infection, usually last 3–4 days.

3. Abdominal Pain

Abdominal pain, usually classified as acute or recurrent, is a difficult complaint to assess. It can indicate a condition, such as appendicitis, that may require surgery. Several conditions — urinary tract infections, gastroenteritis, or even pneumonia — can mimic acute or serious abdominal problems like appendicitis. The true incidence of an acute abdominal pain caused by appendicitis is estimated at between 7% and 12%; 10%–12% of school-age children are affected by recurrent or chronic abdominal pain.

Recurrent abdominal pain is often a challenge to diagnose since the child usually appears healthy but is complaining of severe pain. Recurrent abdominal pain is classified as 3 or more episodes, severe enough to interfere with activity, occurring over a 3-month period or longer. The etiology is usually unknown but may be psychosomatic in origin and associated with stress at home or in the classroom. (See Chapter 11 for more on psychosomatic illnesses.)

4. General Malaise: “I Don’t Feel Well”

This complaint, heard frequently in school health offices, is vague and nonspecific, and can indicate a wide variety of problems, from specific physical conditions to psychosomatic or stress-related ones. School nurses need to obtain accurate information, since this complaint may not be the real reason the child is in the health office. The child may be using this complaint as a means of communicating an underlying problem to the nurse or school personnel. This assessment demands a thorough, skillful, and sensitive interview.

HEADACHES	
QUESTION (SUBJECTIVE DATA)	**ACTION**
1. What is the student's name and age?	Obtain school health record.
2. Has there been any recent head injury?	Examine the child's head for evidence of lacerations, bleeding, bumps, or bruises.
3. Where is the headache located? How severe is it? How long has it persisted?	Any headaches characterized as severe or unilateral, or that have persisted beyond 12 hours, should be evaluated by a licensed provider immediately.
4. Are there any associated symptoms: vomiting, stiff neck, difficulty with vision, drowsiness, or changes in behavior or personality?	If yes, the child should be seen by a licensed provider immediately. These symptoms can be associated with a life-threatening infection such as meningitis.
5. Does the child have any other serious chronic medical disorder?	If yes, the headache may be associated with the disorder. The child should be evaluated by a licensed provider that same day.
6. How often does the child get headaches? What has made them feel worse or better?	The child may benefit from taking certain measures to treat the headache: lying down and resting, taking acetaminophen, or applying a cool washcloth to the forehead. **Note: Administration of medication requires a licensed prescriber's order and parental consent. See Chapter 6.**
7. Does the child feel ill in any other way (e.g., sore throat, stomachache, chills)?	If yes, the child should be seen by a licensed provider that same day for appropriate testing, diagnosis, and treatment. Headaches may be associated with common infectious illnesses such as colds, streptococcal illness, pharyngitis, or influenza.
8. Has the child eaten recently?	Headaches may be associated with hypoglycemia.
ACTION (OBJECTIVE DATA)	**PLAN**
1. Temperature: Is it above normal? 2. Neck: Is there tenderness or pain on motion? 3. Eyes: Are the pupils equal in size? 4. Head: Are there any lacerations, bleeding, bumps, or bruises?	If yes to any of these, the child needs to be evaluated by a licensed provider immediately.
ASSESSMENT	**PLAN**
1. Acute onset headache	Headache may be associated with infectious illness such as strep throat, cold, or flu.
2. Acute recurrent headache	Headache may be migrainous. A child presenting with a severe headache should be sent home to be evaluated by a provider.
3. Chronic nonprogressive headache (as a result of tension or stress)	Dull, constant pain located around the forehead and temporal area can often be alleviated with rest, dim lighting, a cool washcloth, and acetaminophen. **Note: Administration of medication requires a licensed prescriber's order and parental consent. See Chapter 6.**

SORE THROAT	
QUESTION (SUBJECTIVE DATA)	**ACTION**
1. What is the student's name and age?	Obtain school health record.
2. How long has the sore throat been present? How severe is the discomfort?	Any sore throat that is characterized as very painful or that has been present longer than 24 hours should be evaluated by a licensed provider that same day.
3. Are associated symptoms present, such as cold, or cough?	Sore throat associated with upper respiratory symptoms is likely to be caused by a virus.
4. Does the child have headache, rash, chills, or abdominal pain?	Sore throat associated with these symptoms is more likely to be caused by bacteria.
5. Has the child had many sore throats or streptococcal infections in the past?	If yes, the child should have a throat culture to rule out strep throat, a potentially serious infection.
6. Does the child have a serious chronic medical disorder such as kidney disease, diabetes, or congenital heart disease?	If yes, the child should be evaluated by a licensed provider that same day.
7. Has the child had recent contact with anyone who has had strep throat or impetigo (a skin infection caused by *Streptococcus*)?	Sore throat following a recent contact with someone who had strep throat or impetigo warrants a throat culture to rule out *Streptococcus* as a cause of the pharyngitis.
ACTION (OBJECTIVE DATA)	**PLAN**
1. Temperature: Is it higher than normal? 2. Neck: Are the glands in the neck swollen or tender? 3. Mouth: Does the throat appear red? Are the tonsils enlarged? Is pus or exudate present on the throat or tonsils?	If positive for elevated temperature and enlarged and tender glands with a red and pus-like throat, the child needs to be evaluated by a provider.
ASSESSMENT	**PLAN**
1. Viral infection	If there is no rash, fever, difficulty swallowing, swollen and tender glands, abdominal pain, or headache, the child most likely has a viral infection. Taking acetaminophen, drinking fluids, and gargling with weak, warm salt water can alleviate symptoms. **Note: Administration of medication requires a licensed prescriber's order and parental consent. See Chapter 6.**
2. Bacterial infection	Sore throat associated with symptoms such as fever, difficulty swallowing, swollen and tender glands, abdominal pain, rash, or headache is more likely to be caused by bacterial infection. A throat culture should be performed in these cases. Results are usually available within 24–48 hours. If positive, the child should be placed on antibiotics by his or her primary care provider. Children should be considered contagious until at least 24 hours after beginning appropriate antibiotic treatment and resolution of any accompanying fever. (See also Chapter 8.)

ABDOMINAL PAIN	
QUESTION (SUBJECTIVE DATA)	**ACTION**
1. What is the student's name and age?	Obtain school health record.
2. What does the pain feel like? What is its frequency, location, and duration? Does it radiate? What makes it better or worse?	Inspect the area for any obvious recent injury. If the pain is severe and is interfering with activities, the child should be referred to a licensed provider immediately.
3. Is this a new complaint? If not, how many times has the child complained of this?	If this is a common complaint for this child, it may be indicative of stress-related illness, and the child could stay in school.
4. Does the child have associated symptoms such as nausea, vomiting, diarrhea, constipation, or decreased appetite?	Although such symptoms may indicate a viral infection, they may also indicate an acute abdominal condition or other physiological diagnosis that may require immediate intervention. Consult a licensed provider immediately.
5. For girls: Is the pain associated with frequency or burning on urination? Is it associated with menses?	Urinary tract or vaginal infections need to be diagnosed and treated by a provider. If pain coincides with onset of menstrual period, rest, over-the-counter pain reliever (per school protocol or licensed prescriber's order, both with parental consent), and heat may decrease pain and discomfort.
ACTION (OBJECTIVE DATA)	**PLAN**
1. Temperature and blood pressure: Are they abnormal? 2. Abdomen: Is pain localized? Does it radiate? Are there signs of injury? 3. Is child pale or sweaty? 4. Is mobility or activity severely restricted?	If yes to any of these, refer the child immediately to a licensed health care provider to rule out appendicitis and other emergency conditions.
ASSESSMENT	**PLAN**
1. Acute abdominal pain	Appendicitis is the most common cause of acute abdominal pain. If yes to this, refer the child immediately to a licensed health care provider to rule out any emergency conditions.
2. Recurrent abdominal pain	Recurrent pain is associated with urinary tract infection, constipation, gastrointestinal viral infections, stress, and gynecological problems. Refer the child to the primary care provider for evaluation.

GENERAL MALAISE	
QUESTION (SUBJECTIVE DATA)	**ACTION**
1. What is the student's name and age?	Obtain school health record.
2. Review child's body systems: What physical problems/conditions has the child had in the past? Are any of these present now? Proceed from head to toe.	Differentiate between physical and psychological etiology.
3. Ask general questions: Is the child feeling physical pain? Where? Has he/she had trouble sleeping? Has he/she recently experienced nausea, vomiting, or diarrhea?	If answers are positive, follow up with more questions about specific area.
4. Ask open-ended, sensitive questions concerning family, home, school, and peers: "Has anything changed at home? How is school going?"	If child indicates stress in these areas, he/she may benefit from "time out" in health office. Assess for further referral for counseling.
ACTION (OBJECTIVE DATA)	**PLAN**
1. Is body temperature elevated?	Elevated temperature can indicate nonspecific viral or bacterial disease. Refine assessment and refer for further evaluation.
ASSESSMENT	**PLAN**
1. Organic cause	Vague, nonspecific complaints can still be indicative of physical injuries and illnesses. Rule these out by careful history, data collection, and referral to a primary care provider before assuming that the complaint is stress-related.
2. Psychosomatic or stress-related	Stress-related illness and chronic complaints warrant follow-up and counseling by school guidance, if available, or referral to community services.

POPULATION-BASED SCREENING PROGRAMS

General Guidelines

Population-based screening for health problems is an important component of a school health program. By detecting previously unrecognized conditions or preclinical illnesses as early as possible, population-based screening enables timely intervention and remediation, which can limit potential disability, medical costs, and negative impact on scholastic performance. Exhibit 5-2 is an Overview of Basic Required School Health Services. Population-based screenings are frequently done in schools because large numbers of children can be screened in a relatively short period of time. The following guidelines are applicable to any population-based screening program in the school or the community.

Assessment

The scope and nature of a screening program should be based on the documented health needs of the population served. Population-based screening programs, which include referral criteria, are divided into 2 categories: (1) those mandated by statute and regulation (i.e., vision, hearing, and postural screening), and (2) those that are not mandated but may be recommended for the given student population (e.g., dental screening). Local school or community health personnel, parents, students, or educators may have identified the latter types of screenings as needed. Decisions about whether to offer these screening programs should be based on the identification of a target population that is at risk for developing an illness or condition unlikely to be detected without screening. **Note:** School and program planners must exercise caution to ensure that students are not used as a "captive population" by those who would promote screenings that provide little or no health benefit.

Planning

Careful planning is the key to an effective screening program. Time invested at the planning stage makes implementation easier and produces more accurate outcomes. The school nurse plays a major role in the planning phase and must be able to spend the time required to develop a successful program. The following activities and decisions should occur during the planning phase:

- Determine the purpose of the screening program.
- Define the population to be screened.
- Decide which screening procedure or test to use.
- Ensure that adequate resources are available, including equipment and supplies, staff training, and staff time to conduct tests and retests, record results, interpret results to students and families, and conduct follow-up.
- Determine referral criteria using standards set by DPH for vision, hearing, and postural screening and by NIH for high blood pressure, cholesterol, and other screenings.
- Design the implementation of the screening process to maximize students' availability while minimizing students' time out of the classroom.
- Inform parents/guardians of the screening program, educating them about the importance of screening to identify issues relevant to the child's health and education.
- Collaborate with school health team members, school administrators, and teachers to implement the program. Continue to keep staff informed of the implementation process.
- Inform community health care providers about the program and the criteria used for referral for diagnosis and treatment, addressing (1) resources available for follow-up (especially for uninsured students), and (2) the feedback mechanism by which the school will receive information after completion of the referral.
- Plan the mechanics of the actual screening program, including time required for screening; number, type, and identity of screening personnel; and delegation of responsibilities. Such responsibilities might include:
    - ordering supplies;
    - ensuring that the equipment is in good working order (e.g., audiometer, sphygmomanometer, or reflotron calibrated recently);
    - providing educational materials for parents/guardians and obtaining parental consent;
    - training personnel;
    - recruiting, orienting, and training volunteers, if used;
    - arranging for space that is appropriate, quiet, and private;
    - recording findings;
    - rescreening students with borderline or questionable results (usually done by the school nurse); and
    - planning and completing the follow-up procedures, including tracking referrals to ensure completion.

- Decide how to incorporate the content (e.g., of the disease or condition, screening procedure) into the health education curriculum.
- Determine how to evaluate and report the results of the screening program.

Implementation

Implementation begins with the training of screening personnel, who may be staff (nurses, health aides, physical education teachers) or volunteers. It also includes the following steps:

- performance of the actual screening;
- documentation of all test results on student health records;
- referrals for follow-up for all those who fail to meet the criteria;
- notification of parent/guardian by letter and/or telephone call; and
- notification of medical provider by letter, usually via parent/guardian.

Note: Screening tests are not diagnostic in nature. They are designed simply to indicate students who may need further attention. For this reason, it is imperative that school personnel not make any attempt at diagnosis when contacting the parent/guardian of a child who does not meet screening criteria.

Follow-up

Follow-up is a critically important component of the screening process. This is the point at which early diagnosis and prompt treatment can remedy the problem *before* it becomes a disability and/or more costly to treat. Key actions and considerations involved in follow-up include:

- obtaining reports from the medical provider or from other related professionals such as audiologists or optometrists regarding diagnosis, treatment, and follow-up care;
- continuing contact with parents/guardians (including telephone calls or home visits) until follow-up is achieved;
- interpreting outcomes to students and parents/guardians;
- communicating, as needed, with educational staff;
- ensuring confidential data handling; and
- attaching follow-up medical reports to the health record.

Evaluation

The school nurse should use evaluative outcome criteria that focus on the results of the program, measure actions (e.g., number of students referred for treatment), and give dates by which actions occur (e.g., number of completed referrals). Data should be tallied by grade and results compared to expected results, based on national or state data. Finally, the completed referrals must be compared to a set goal (e.g., “80% of referrals will be completed”). Through ongoing continuous quality improvement programs, the school nurse should work toward increasing the percentage of completed referrals. (See Chapter 2 for discussion of continuous quality improvement.)

Effective screening programs are likely to identify health problems that otherwise would not be identified until a later date, when treatment is likely to be less effective or more costly. Screening does not substitute for a diagnostic evaluation. *It is extremely important to recognize that it is a waste of time and resources to do screening if appropriate referral and follow-up are not carried out.*

Special Considerations: Homeless children and adolescents present special concerns in the context of screening programs. Frequent moves often make these students unable or unavailable to participate, and when screenings are completed, these students may need special assistance with referrals and follow-up, including help with making appointments and with transportation to

provider's' offices. The district's homeless education liaison, who is the staff person designated to help homeless children and youth, should be consulted in these instances. DOE maintains a list of district-level homeless liaisons at http://www.doe.mass.edu/hssss/program/homeless.asp.

Required Physical Examinations/Population-Based Screenings

What the Law Says

Requirements for physical examinations and for population-based vision, hearing, and postural screenings are codified in M.G.L. c.71, s.57, commonly referred to as the "Physical Examination of School Children" statute. Enacted by the legislature, this statute is actually an education law that mandates population-based screening. Related regulations, in 105 CMR 200.000: Physical Examination of Children (including requirements for annual height and weight measurements), are available online at http://www.mass.gov/dph/fch/schoolhealth/lawsregs.htm.

M.G.L. c.71, s.57 requires the above examinations and screenings for students in *public schools*. It does however apply to *nonpublic schools* as well when "at the individual request of a parent or guardian of a student in a private school which has been approved under section one of chapter seventy-six and which does not discriminate in its entry requirements on the basis of race or color…."

Requirements for lead screening on entry into kindergarten are codified under M.G.L. c.111, s.193 and in DPH's lead poisoning prevention and control regulations (150 CMR 460.040-460.070). Lead screening requirements apply to both public and nonpublic schools.

Waiver Procedure (Applies to Certain Vision, Hearing and Growth Screenings Only)

M.G.L. c.71, s.57 and related regulations 105 CMR 200.910 provide DPH with discretionary power to waive certain requirements for population-based screenings upon written request. DPH has established procedures for reviewing these written requests. DPH considers requests to waive vision, hearing, and growth screenings, but not postural screenings. 105 CMR 200.000, "Physical Examination of School Children," covers waivers of requirements at 200.910 as follows:

> "Except as provided by law, the Massachusetts Department of Public Health shall have the discretionary power to waive any of 105 CMR 200.100 through 200.800 upon written request.
> (A) The request for a waiver must be accompanied by an alternative plan to the regulation that would indicate an improvement of the health of the school child.
> (B) Individual alternative school health programs submitted for approval must not reflect a cut back in the school health budget.
> (C) Waivers may be granted for periods up to one year and may be renewed upon demonstration of improvement in school health programs.
> (D) The Department of Public Health School Health Unit staff will provide consultation and will review the school health programs being granted waivers."

DPH advises public school districts considering a waiver request to begin the process by contacting the School Health Unit. Preliminary support for the waiver request will be based on the school district's alternative plan(s), consistent with the above requirements. DPH will assess the alternative plan and its relevance to the local school health program.

Based on a favorable assessment, a School Health Advisor will then request that a waiver application be completed. The waiver application and related forms may be obtained on the DPH website at http://www.mass.gov/dph/fch/schoolhealth/waiver_app.pdf. The application must be completed by the public school district nurse leader or designated school nurse contact (RN) for

the district. Mail the completed waiver application to: School Health Unit, Massachusetts Department of Public Health, 250 Washington Street, Boston, MA 02108-4619.

The application **must include** the following:

- An alternative plan or program designed to be as effective in protecting and promoting the health of school-age children in the given school district. (This plan must not reflect a reduction in the school health budget or staff.
- A written proposal for one or more of the plans or programs listed under WAIVER PROGRAM ACTIVITIES. (Note: School districts may choose other activities relevant to the health of their student population, provided they are approved by the School Health Unit.)

The school district will be notified of the status of its application. If approved, the waiver is valid for a 1-year (school year) period. The school district will be required to complete the waiver data reporting form at the end of the school year and mail it to the School Health Unit together with the annual postural screening data form.

Tort Claims Act

As a general rule, **public** school employees completing screenings are protected from tort liability by the State Tort Claims Act, M.G.L. c.258, s.2, which provides that public employers “shall be liable for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any public employee while acting within the scope of his office or employment.” A public employee will not be held personally liable for such acts, provided the employee provides reasonable cooperation in preparing the defense of the action. A public employee named in such a suit can request that the Attorney General provide representation. “Public employees” are defined as “elected or appointed, officers or employees of any public employer, whether serving full or part-time, temporary or permanent, compensated or uncompensated.” A “public employer” includes the Commonwealth, counties, cities, towns, and educational collaboratives or districts. The statute specifically provides that “with respect to public employees of a school committee of a city or town, the public employer . . . shall be deemed to be said respective city or town.”

For example, a physical education teacher or school nurse working in a public school system who administers the postural screening exam in accordance with DPH protocols as part of his/her official duties would be protected from personal liability based upon a claim of negligence. The sole exception would be a physical education teacher or school nurse found to be an independent contractor. To determine whether a physical education teacher or a school nurse would be regarded as an independent contractor or public employee, it is necessary to look at such issues as whether the physical education teacher or school nurse receives a regular salary and benefits from the city or town, and whether the physical education teacher or school nurse is subject to direction and control by school officials with respect to such issues as hours, work location and conditions, and job responsibilities. Physical education teachers and school nurses generally would be regarded as municipal employees rather than independent contractors under this test. Additional questions regarding liability or other legal issues should be addressed to the school district’s municipal or school counsel.

PHYSICAL EXAMINATIONS

Background/Rationale

A periodic physical examination is critically important for all children and adolescents. Its objectives are to identify and follow up on health conditions that may adversely affect students’ well-being and ability to learn. While parents/guardians have primary responsibility for their children’s health, the

school is responsible for the care, safety, and well-being of students in the educational setting. Therefore, a student's health history and physical examination results are necessary components of the school health record.

The physical examinations mandated for schoolchildren in Massachusetts have other important functions: They ensure that students are assessed by primary care providers on a regular basis, and they offer excellent opportunities for behavior risk assessments as children enter the preadolescent and adolescent developmental stages.

Specific Requirements

M.G.L. c.71, s.57 and related amendments and regulations (105 CMR 200.000–200.920) require physical examinations of schoolchildren within 6 months before entry into school or during the first year after entry, and at intervals of either 3 or 4 years thereafter, such as during kindergarten, 4th grade, 7th grade, and 10th grade. It is the responsibility of the school committee or the local board of health to designate these intervals. The regulations require physical examinations for:

(1) children referred because of frequent absences due to unexplained illness;
(2) children referred because of known physical defects that require repeated appraisal;
(3) children referred from a teacher-nurse conference because the child is not making expected progress in school or because of signs of illness noted by the teacher or nurse;
(4) children under 16 and over 14 years of age requesting employment certificates; and
(5) children planning to participate in competitive athletics annually, previous to such participation.

Note: Under c.71, s.57, a parent/guardian of a pupil in a private school may also request physical examinations consistent with those required in the public schools.

Standards

Physicians should follow the guidelines of the American Academy of Pediatrics for conducting a comprehensive physical examination.

Personnel/Procedure

The school health program should expect that the physical examination and ongoing health assessments will be performed by the family's own primary care provider. If a child does not have a primary care provider, every effort should be made to link him/her with a primary care provider in the community. *The school committee or board of health is required to provide the services of a school physician to carry out physical examinations, in hardship cases, for children who do not have access to a private primary care provider (M.G.L. c.71, s.53 and s.57).* For school-based physical examinations, each child should be separately and carefully examined by a Massachusetts-registered physician or nurse practitioner. School-based health centers may also be available to conduct examinations. When these physical examinations are conducted in the school, written notification and consent of parents/guardians is necessary. The parent/guardian is welcome to be at the physical examination, and the appraisal should include time for a conference with the parent/guardian or child concerning the child's growth and development and the findings of the health appraisal. (See Chapter 2 for the role template for the school physician/medical consultant.)

Physical examinations completed in school should be done in the presence of a third person (usually the school nurse), in a private setting, and with sufficient time allotted for an appraisal of both physical and behavioral/emotional health. The student should be undressed sufficiently to permit an adequate assessment.

Referral and Follow-up

of a child in a nonpublic school may request the vision screening. (Please also see discussion onwaivers of cert
school nurse is responsible for tracking such referrals and collaborating with parents/guardians to ensure that they are completed.

Recordkeeping and Documentation

The results of the primary care provider's examination should be recorded on a health record. A copy of this record, the certificate of immunizations, and the primary care provider's recommendations must be returned to the school. DPH provides a model form, *Massachusetts School Health Record: Health Care Provider's Examination* (MHCPE), which includes information necessary to protect the health and safety of the student in the school setting. See http://www.mass.gov/dph/fch/schoolhealth/health_record.htm. An alternative to the model form is acceptable, provided the content of the MHCPE is included. (Refer to the DPH website for a copy of the Health Care Provider's Examination Form.) The student's certification immunizations must accompany the form. In addition, the following should be attached as appropriate:

- additional detailed information to facilitate the care of the student in the school setting;
- a separate provider's order form for each medication or treatment to be administered in the school; and/or
- if a child has asthma, a Massachusetts Asthma Action Plan (see the Massachusetts Health Promotion Clearinghouse: http://www.maclearinghouse.com/CatalogPageFrameSet.htm)

Assessment findings should be recorded on each student's cumulative school health record, which accompanies the student as he or she is promoted or transferred from one school to another. (See Chapter 2 for further discussion of health records.)

Required School Health Screenings

Vision Screening

Background/Rationale

DPH has long been a pioneer in the area of children's vision screening. In 1940, Albert E. Sloan, M.D., a consultant ophthalmologist with DPH's Division of Child Hygiene, summarized the need for childhood vision screening and recommended a vision protocol. Since the development of the original protocol, advocates, researchers, ophthalmologists, and optometrists have learned even more about the necessity of appropriate eye care for maintaining good vision, the critical relationship between vision quality and learning, and the importance of population-based vision screening. During this time, school nurses have identified countless children with potential vision problems through the school vision screening program and referred them for diagnosis and treatment.

Detecting childhood vision problems early is still a challenge for the health care community. Most eye problems can be corrected if they are detected and treated early. Some problems, if left untreated even for a short period, can result in permanent vision loss. For this reason, it is recommended that children's vision be tested prior to the start of kindergarten. This may be done at preschool, during a well-child visit to the doctor, during a visit to an eye doctor, or at a vision screening conducted by trained personnel, such as those performed by Prevent Blindness America. See http://www.preventblindness.org/children/index.html.

What the Law Says

M.G.L. c.71, s.57 now requires that, in the absence of a religious exemption, the vision of every public school child be screened annually, from kindergarten through grade 12. Parents/guardians of a child in a nonpublic school may request the vision screening. (Please also see discussion on waivers of certain screenings.)

of a child in a nonpublic school may request the vision screening. (Please also see discussioon on waivers of certain screenings.)

In 2004, c.71, s.57 was amended with the following:

> "Upon entering kindergarten or within 30 days of the start of the school year, the parent or guardian of each child shall present to school health personnel certification that the child within the previous 12 months has passed a vision screening conducted by personnel approved by the department of public health and trained in vision screening techniques to be developed by the department of public health in consultation with the department of education. For children who fail to pass the vision screening and for children diagnosed with neurodevelopmental delay, proof of a comprehensive eye examination performed by a licensed optometrist or ophthalmologist chosen by the child's parent or guardian indicating any pertinent diagnosis, treatment, prognosis, recommendation, and evidence of follow-up treatment, if necessary, shall be provided."

Note: Vision screening should be performed approximately every 12 months in the early years. If possible, the vision screening schedule should be adjusted to allow for this. The preschool screening is a separate screening from the kindergarten screening.

Standards

Screening procedures and referral criteria used with both preschool and school-age students have been approved by eye professionals representing Massachusetts ophthalmologists and optometrists.

Procedure

All vision screening in the Commonwealth's schools uses the official Massachusetts Vision Test protocol. Some changes have been made to this protocol in recent years. Some screening procedures, such as the plus lens test, have been eliminated, while others, such as the near vision test, have been added. Preschool vision screening has been added in order to detect amblyopia, a condition that typically develops in children from birth to age 8 or 9 that is highly treatable if detected early.

The Massachusetts Vision Test currently prescribes 3 types of vision screening protocols, based on age. The complete protocol, as well as any subsequent updates, may be found on the DPH School Health Unit website at http://www.mass.gov/dph/fch/schoolhealth/.

- Preschool and Kindergarten: Machines are not used at this age level. The acuity standard for the youngest preschoolers (3 years to 3 years 11 months) is 20/40; for children 4 years and older, it is 20/30. There are 2 components of the preschool vision screening: visual acuity and stereopsis. Visual acuity is assessed with the MassVAT (Visual Acuity Test) flip cards or 10-foot wall chart with HOTV letters or Lea symbols. Ocular alignment and binocularity are assessed with the Random Dot E stereo test. *Particular care must be taken to occlude each eye appropriately during vision testing to prevent peeking.* Children with poor vision in one eye, the ones who it is most important to identify, are also the ones most likely to try to peek. Because it can be difficult for an examiner working alone to monitor peeking in very young children, it is desirable to have 2 people present during vision screenings. It is also important to always show a line of letters (or symbols) when assessing vision in a young child. A child with amblyopia will record a better visual acuity when tested with one letter or symbol at a time, and thus his or her vision problem may be missed.

- Grades 1–3: Vision testing machines or wall charts may be used for these grade levels. Line letters, HOTV, or tumbling E's are all acceptable. Acuity *must* be assessed with a line of letters; showing only one letter at a time results in overestimation of acuity. The

monocular distance acuity standard for children in these grades is 20/30. A child must correctly identify 80% of the letters or symbols on the critical line. The Random Dot E stereo test is used to assess binocular vision. Linear near visual acuity may be assessed with the near slide of the vision machine or a near card. The critical line is 20/30 with both eyes open.

- Grades 4–12: Visual acuity testing protocols for these grades are identical to those for grades 1–3. No assessment of binocularity is required.

Remember: DPH may revise these protocols as new research findings emerge. Any updates will be listed on the School Health Unit website.

Note: If a student wears glasses, he or she must wear glasses when tested. Also, an external examination should be part of all vision screenings. If any of the following are observed, it is reasonable to refer a student for a comprehensive eye exam, even if he or she passed the vision screening:

- redness/discharge;
- abnormal head position;
- squinting;
- tearing, photophobia;
- misaligned eyes;
- nystagmus (rapid involuntary rhythmic eye movement);
- rubbing of eyes; or
- ptosis (droopy eyelid).

Personnel

M.G.L. c.71, s.57, as amended in 2004, requires that vision screening be conducted by "personnel approved by the Department of Public Health and trained in vision screening techniques to be developed by the Department of Public Health in consultation with the Department of Education." The recommendation is that primary care providers or their staff who have received the specialized training conduct vision screening during the health appraisals of preschool children. The statute, as amended, requires presentation to the school district of a notice or evidence that a child has passed a vision screening. The most common method of complying with the statute will be an indication on the Massachusetts Physical Examination Form, which has been modified to allow primary care providers to indicate "certification" of the vision screening.

School nurses and others who have had the required specialized training, approved by DPH in accordance with 105 CMR 200.400, may also perform the vision screening of preschoolers, as well as of the kindergarten through grade 12 populations.

Equipment

There are currently 3 approved vision screening devices available from different manufacturers of vision testing equipment. To ensure valid test results, it is very important that all vision screening equipment be properly maintained. Vision testers should be kept as clean as possible by using the dust cover provided by the manufacturer, and they should be cleaned and checked for problems every 2–3 years. Additional information is available on DPH's School Health Services website, http://www.mass.gov/dph/fch/schoolhealth/index.htm.

Referral and Follow-up

Parents/guardians of all children who do not perform satisfactorily on a vision screening are notified by school health personnel. The school nurse plays a vital role in interpreting the importance of the need for follow-up and in providing ongoing encouragement to complete it, when

indicated. For vision screening referral letters and other documents, see the following DPH website:
http://www.mass.gov/?pageID=eohhs2terminal&L=6&L0=Home&L1=Provider&L2=Guidelines+and+Resources&L3=Guidelines+for+Services+%26+Planning&L4=School+Health&L5=School+Health+Services&sid=Eeohhs2&b=terminalcontent&f=dph_com_health_school_p_health_screening&csid=Eeohhs2.

On average, approximately 7%–8% of students screened nationwide are referred for further evaluation. A referral means only that there is sufficient deviation in the child's visual condition to justify a comprehensive eye examination by a qualified eye specialist. Therefore, good follow-up procedures are vital if all children who are suspected of having visual problems are to be brought to the attention of a competent specialist for diagnosis and therapy. Per statute, parents/guardians of children who do not pass the mandated preschool vision screening are required to show proof of a comprehensive eye exam and follow-up if necessary. A specialist may also recommend appropriate educational adjustments to be initiated by school personnel. These recommendations should be made in concert with the child's primary care provider.

Remember: The law now also requires proof of a comprehensive eye examination, performed by a licensed optometrist or ophthalmologist, for children diagnosed with neurodevelopmental delay. Although the term "neurodevelopmental delay" may be subject to interpretation, it is likely to include children born prior to term, children with low birth weights, and children with neurological disorders as evidenced by cerebral palsy, Down Syndrome, multiple handicaps, or developmental delay.

Recordkeeping and Documentation

All vision screening results — passes as well as referrals — should be recorded on the child's School Health Record. See http://www.mass.gov/dph/fch/schoolhealth/health_record.htm for a copy of the school health record. If the referral confirms a vision problem, the School Health Record Card should also indicate the nature of the abnormality as determined by the specialist, and a complete record of any treatment prescribed.

M.G.L. c.71, s.57 was amended in 1987 to require that any person who conducts an eye exam of a child referred through a school screening program is to report the results to school health personnel. A copy of the report must go to the student's parents/guardians, and they should be encouraged to share a copy of the eye specialist's report with their child's primary care provider.

The report must, at minimum, include the following:

- date of report;
- child's name and address;
- name of child's school;
- type of examination;
- summary of significant findings, including diagnoses, medication, duration of medication's action, prognosis, and whether a return visit is recommended, and if so, when;
- any recommended educational adjustments for the child, such as preferential seating in the classroom, eyeglasses for full- or part-time use in school and/or at home, and the use of low-vision aids; and
- name, address, and signature of the examiner.

Special Considerations

Vision Screening of Newborns: The eyes of newborn infants should be evaluated in the hospital nursery. This examination can help detect several congenital eye problems, some of which can be

very serious. Between 6 and 12 months of age, infants should be checked for good eye health by a doctor or other appropriately trained health care provider, during routine well-baby care or other doctor's office visits.

Screening for Color Blindness: DPH's vision protocol does not include screening for color vision deficiency (color blindness). Color vision deficiency is a term used to describe a number of different problems, ranging from slight difficulty in distinguishing different color shades to complete inability to identify any color. An estimated 8% of males and less than 1% of females have color vision problems. Although most color vision problems are hereditary and already present at birth, certain medications and eye diseases can also affect color vision. Any child having difficulty in school should be checked for vision problems, including color vision deficiency. People with a family history of color vision problems and those who are having problems seeing colors should be tested by a vision specialist.

Hearing Screening

Background/Rationale

The purpose of Massachusetts's hearing screening program is to identify children with an educationally significant hearing impairment who would otherwise not have been identified. Identification aims to ensure timely remediation or treatment in order to eliminate or lessen the negative effects of an undetected hearing problem. Any hearing loss (even a "mild" or a unilateral loss) will influence the child's overall educational process.

Most children with significant hearing loss are identified before school entry; however, many children with mild to moderate hearing loss may go undetected until school enrollment and participation in the school's hearing screening program.

Any hearing loss may negatively affect a child's ability to communicate and achieve. The effects of a hearing loss depend on the nature and the degree of loss, as well as the appropriateness of the interventions. An undetected or unmanaged hearing loss may result in:

- a delay in speech and language skills;
- language deficits, which may lead to learning problems and limited academic achievement;
- difficulties in communication, which may lead to social isolation and poor self-concept and result in emotional/behavioral problems; and
- a negative impact on the child's vocational and educational choices.

What the Law Says

M.G.L. c. 71, s. 57, as amended, requires that, in the absence of an exemption on religious grounds, the hearing of every public school child be screened annually, from kindergarten through grade 12. Parents/guardians of children in nonpublic schools may request the screening. (Please also see discussion on waivers of certain screenings previously in this chapter.)

Regarding preschool hearing screening, regulations developed under the Comprehensive Special Education Law, c.766 p.306, 1(D) specify that, beginning with the third birthday, children with special needs or children suspected to have a hearing problem by their parent/guardian must be given a test for auditory functioning appropriate to the child's age and developmental stage.

Standards for Massachusetts School Hearing Screening

An advisory committee of specialists in otology and audiology assisted DPH in updating standards for screening procedures, appropriate use and care of the audiometer, and guidelines for referrals. A manual developed by the Vision and Hearing Section of the DPH School Health Unit, *Individual Pure Tone Hearing Test Procedures*, is distributed to personnel who attend training sessions given

by DPH staff. Intended for use by staff conducting hearing screenings in the school setting, the manual deals primarily with standards and procedures for *individual* pure tone hearing testing recommended by DPH. (Group testing is never appropriate for hearing screening.) The manual also deals with the proper care of the audiometer and referral guidelines. A copy of the manual should be available in every school system. Exhibit 5-3 contains guidelines for a school hearing screening program, highlighting new guidelines for 2005 and beyond. The exhibit also shows what the guidelines were prior to 2005.

Personnel

School nurses are responsible for coordinating the school hearing screening program. An audiologist may function as a consultant to the program. Professional staff such as nurses, audiologists, and speech-language pathologists are appropriately used to supervise the screening program, perform repeat screenings when necessary, and carry out the necessary referral and follow-up when a child fails the hearing screening. If the school chooses to use lay screeners or volunteers, they should be under the direct supervision of the school nurse.

Preschool hearing screening usually falls within the purview of the child's primary care provider. School districts with a preschool program operating in their buildings may engage the consultation services of a hearing specialist such as an educational audiologist to review the hearing screening protocols or to conduct annual screening for the students that may not have been screened by a primary care provider. School nurses may conduct these screenings, but specialized training is required to perform the tests. Preschool children may present with developmental or behavioral challenges to traditional hearing screening procedures**.** In complex circumstances, the hearing screenings may be conducted by a licensed audiologist or speech-language pathologist.

DPH is mandated to assist school systems in carrying out their responsibilities by developing the requirements of the hearing screening program; providing training sessions for personnel, usually the school nurses, assigned to coordinate or complete hearing screening; and certifying screeners upon completion of the training program. DPH offers training sessions for certification of hearing screeners periodically during the school year throughout the Commonwealth.

Equipment

The audiometer used in school-based hearing screening programs must meet the standards for screening audiometers established by the American National Standards Institute (ANSI). It must have air conduction frequencies of 1000, 2000, and 4000 hertz. Because screening audiometers are quite fragile, proper handling and transport are essential to ensure accurate readings from a properly calibrated machine.

DPH notes that, since all audiometers drift out of calibration with regular use, it is very important that each audiometer receive a full laboratory calibration by an external company at least once a year. The American Speech-Language-Hearing Association (ASHA) and the Occupational Safety and Health Administration (OSHA) recommend calibration as an important component for accurate hearing screening results. As noted above, the manual *Individual Pure Tone Hearing Test Procedures* developed by the Vision and Hearing Section of the DPH School Health Unit includes information on proper care of screening audiometers.

Referral and Follow-up

Appropriate medical and audiological follow-up and referrals are central to an effective system. In general, all children who fail the initial screening must be retested within 1 week before being considered a candidate for a notice to the parent/guardian. A repeat failure of the screening justifies parental notification in writing.

The typical failure rate in a screened population is approximately 2½–3%. If the findings of the hearing screening vary significantly from this (either consistently higher or lower), a review should include, at a minimum, the skill of the tester, the appropriateness of the testing site (i.e., presence of ambient noise), the condition of the audiometer, and an evaluation of the testing procedures.

Screening tests are not diagnostic; they merely identify students who may need further attention by a primary care provider or audiologist.

Recordkeeping and Documentation

All results of the hearing screening program (passes as well as referrals) should be recorded on the child's School Health Record. For a copy of the school health record form, see http://www.mass.gov/dph/fch/schoolhealth/health_record.htm. In the event that parental notification is required, the school health staff should make every attempt to follow up to determine: (1) that the parent/guardian consulted the primary caregiver, (2) whether a resolution of the apparent hearing problem was made, and (3) whether any educational adjustments were made, if recommended.

References and Resources

Consultation and guidance on acceptable protocols are available to school personnel through the DPH School Health Unit. Specific publications dealing with hearing conservation and prevention of hearing loss in the school setting (i.e., from live or recorded music, use of Walkman-type receivers, or loud equipment in some vocational schools) are available upon request.

The Classroom Teacher's Role

Classroom teachers, who observe students daily over an extended period of time, may be in the best position to notice unusual reactions, conditions, or behavior changes that may signal a hearing problem. A referral to the school nurse should be made when any hearing problem is suspected. Hearing problems may be indicated when the student:

- makes frequent or unusual mistakes in following directions;
- has delayed speech and language development;
- appears to have difficulty focusing;
- has difficulty localizing to sound;
- has difficulty understanding speech in a noisy environment;
- does not respond to normal speech;
- favors one ear (indicated by turning one ear to the speaker);
- speaks too loudly or too softly;
- strains to hear the speaker;
- concentrates intensely on the speaker's mouth or face;
- is inattentive in oral activities;
- frequently asks to have words or statements repeated;
- mispronounces common words;
- regresses academically subsequent to a serious illness; or
- is not reaching his or her academic potential.

Special Considerations

Hearing Conservation — Since the promulgation of the Hearing Conservation Amendment (46 Fed. Reg. 4078 [1981]; 48 Fed. Reg. 9776 [1983]), hearing conservation programs (HCPs) have been widely implemented in industry to prevent noise-induced hearing loss among workers exposed to occupational noise. The components of HCPs include sound exposure monitoring to assess the degree of the hazard, engineering and administrative noise controls to reduce the hazard, hearing protectors to reduce the noise entering the wearer's ears, education to motivate personnel to take an active part in protecting their own hearing, and annual audiometric

personnel to take an active part in protecting their own hearing, and annual audiometric evaluations to detect any significant changes in the hearing thresholds of noise-exposed workers.

Audiometric evaluations such as school screenings can play a critical monitoring function in a comprehensive HCP, as susceptible students may develop a noise-induced hearing loss, especially in the Commonwealth's many vocational/technical schools that employ heavy machinery.

CDC's Office of Health and Safety (OHS), aware that excessive noise exposure is a potential cause of hearing loss, is establishing a hearing conservation program that is more conservative than that required by OSHA. School districts should carefully consider the following language taken from OHS:

> "It is the policy of the Centers for Disease Control and Prevention to provide employees with a safe and healthful working environment. This is accomplished by utilizing facilities and equipment that have all feasible safeguards incorporated into their design. When effective engineering controls are not feasible, or when they are being initiated, administrative controls will be used when and where possible followed by the use of personal protective equipment.
>
> The primary goal of the CDC Hearing Conservation Program is to reduce, and eventually eliminate hearing loss due to workplace noise exposures. The program includes the following elements:
>
> 1. Work environments will be surveyed to identify potentially hazardous noise levels and personnel at risk.
> 2. Environments that contain equipment that produces potentially hazardous noise should, wherever it is technologically and economically feasible, be modified to reduce the noise level to acceptable levels.
> 3. Where engineering controls are not feasible, administrative controls and/or the use of hearing protective devices will be employed.
> 4. Periodic hearing testing will be conducted to monitor the effectiveness of the hearing conservation program. Early detection of temporary threshold shifts will allow further protective action to be taken before permanent hearing loss occurs.
> 5. Education is vital to the overall success of a hearing conservation program. An understanding by employees of the permanent nature of noise-induced hearing loss, CDC hearing conservation program, and the employee's responsibilities under the program are all essential for program effectiveness."

Inserting the word "school" for the word "work" and "student" for "personnel" or "employee" in the above 5 elements suggests a potential policy for schools. Although the CDC/OSHA specifications and implementation of an HCP in schools clearly exceed the annual hearing screening defined in Massachusetts state law and regulations, it is recommended that, whenever possible, school districts evaluate the noise and environmental factors that may contribute to hearing loss in students and staff by keeping in mind this CDC policy.

The purpose of any school-based HCP is to prevent hearing loss from noise and environmental factors as well as to identify children with hearing loss and refer them for further evaluation. School districts are required to conduct hearing screening, but screening should be viewed in the broader context of a hearing conservation effort within the school district. The major goal of a school-based HCP is to provide a comprehensive approach that identifies and improves students' health and educational performance.

Growth Screening

Background/Rationale

Growth screening that combines annual height and weight measurements enables school health professionals to:

- monitor students' growth and development patterns;
- detect growth abnormalities that may indicate a serious physical problem;
- identify students who may be at nutritional risk; and
- identify students who are overweight or at risk of becoming overweight.

Poor growth patterns may result from systemic disorders (e.g., malnutrition, intestinal conditions), psychosocial conditions, congenital disorders (e.g., Turner's syndrome, intrauterine growth retardation), or conditions of the endocrine system (e.g., hypothyroidism, growth hormone deficiency). Eating disorders such as anorexia and bulimia can result in both serious long-term health problems and poor school performance. Overweight in children and adolescents is associated with a variety of serious health conditions such as type 2 diabetes and cardiovascular disease. (See Chapter 9 for further discussion of nutritional issues.)

What the Law Says

M.G.L. c.71, s.57, as amended, requires that, in the absence of exemption on religious grounds, school-age children be weighed and measured annually. (Please also see discussion on waivers of certain screenings.)

Procedure for Measuring Body Mass Index (BMI)

BMI provides a guideline based on weight, height, sex, and age to assess children who are underweight, at risk for overweight, or overweight. The Centers for Disease Control and Prevention (CDC) recommends using the BMI charts for children between the ages of 2 and 20, released in 2000, rather than the older weight-for-stature charts. CDC has established the following benchmarks:

Underweight	BMI-for-age < 5th percentile
At risk of overweight	BMI-for-age >/= 85th percentile to < 95th percentile
Overweight	BMI-for-age >/= 95th percentile

BMI for age is plotted on gender-specific charts. See the following charts on the CDC website for boys ages 2–20 (http://www.cdc.gov/nchs/data/nhanes/growthcharts/set1clinical/cj41l021.pdf) and for girls ages 2–20 (http://www.cdc.gov/nchs/data/nhanes/growthcharts/set1clinical/cj41l022.pdf). These charts are stature-for-age and weight-for-age percentile charts that include a formula for calculating BMI.

Applying appropriate measuring techniques and using well-calibrated equipment is essential. Appropriate technique includes positioning the child correctly on the scale and against the measuring tape when determining height. Repeating measurements 1–3 times can ensure reliability, as can having only one person responsible for taking heights and weights, since measurements taken by different individuals can vary.

To calculate BMI using the English system, use decimal (not fractional) measurements of weight and height in pounds (not ounces) and inches; divide weight by height-squared; and multiply that total by 703. If using the metric system, measure weight and height in kilograms and centimeters respectively; divide weight by height-squared; and multiply the total by 10,000. Handy tables of these BMI calculations are available at http://www.cdc.gov/growthcharts. An interactive BMI

training module is available at:
http://www.cdc.gov/nccdphp/dnpa/growthcharts/training/modules/modules.htm.

Plot the BMI on a growth chart. (Growth charts are available at:
http://www.cdc.gov/nchs/about/major/nhanes/growthcharts/clinical_charts.htm.) BMI measurements between the 25th and 85th percentiles are considered to be within the normal range; BMIs outside this range indicate a need for further assessment. Children and teens with BMI-for-age above the 95th percentile are more likely to have risk factors for cardiovascular disease and to become overweight adults. Further investigation is also warranted if a child's growth pattern makes a major shift, i.e., from the 80th percentile to the 50th percentile.

Privacy should be provided when weighing and measuring children to reduce the potential for embarrassment or ridicule. A quiet, private location also provides better opportunity for identifying the child's health concerns and for a brief one-to-one teaching moment on nutrition, physical activity, or other health issues.

Notification of Parents/Guardians
Consistent with DPH recommendations, parents/guardians should be notified of the date of the screening, the reason, and statutory requirements. Additional educational materials, such as information about use of BMI to evaluate a student's growth pattern, may be included in the letter. For a sample prescreening letter, go to the following DPH website:
http://www.mass.gov/?pageID=eohhs2terminal&L=6&L0=Home&L1=Provider&L2=Guidelines+and+Resources&L3=Guidelines+for+Services+%26+Planning&L4=School+Health&L5=School+Health+Services&sid=Eeohhs2&b=terminalcontent&f=dph_com_health_school_p_health_screening&csid=Eeohhs2.

Personnel
The school nurse is responsible for overseeing this screening but may delegate the task to properly trained unlicensed personnel such as health aides or physical education teachers.

Standards
To be useful, measurements should be both accurate and recorded and plotted on standardized CDC gender-specific growth charts. Height and weight are plotted against age and compared with standardized percentiles, as well as with previous measurements.

Equipment
Equipment should include a beam balance scale with nondetachable weights; a nonstretchable tape attached to a flat vertical surface such as a wall; and a right-angle head board to lower onto the child's head when taking the height measurement.

Referral and Follow-up
The school nurse is in an ideal position to ensure the early identification of children at risk for growth problems by providing appropriate assessments and referrals. Children should be referred for further assessment when:

- weight-for-height or weight-for-age is above the 95th percentile;
- weight-for-height, weight-for-age, or height-for-age is below the 5th percentile;
- BMI-for-age is below the 5th percentile or above the 85th percentile; or
- the child's growth pattern changes dramatically — for example, a child who has been consistently at the 50th percentile drops to the 10th percentile or rises to the 90th.

For a sample letter to parents/guardians regarding their child's BMI, see the following DPH website:
http://www.mass.gov/?pageID=eohhs2terminal&L=6&L0=Home&L1=Provider&L2=Guidelines+and+Resources&L3=Guidelines+for+Services+%26+Planning&L4=School+Health&L5=School+Health+Services&sid=Eeohhs2&b=terminalcontent&f=dph_com_health_school_p_health_screening&csid=Eeohhs2.

Recordkeeping and Documentation
The growth chart should be part of the school health record. In addition, the summary results should be recorded on the student's health record, including any indication of referral and follow-up. See http://www.mass.gov/dph/fch/schoolhealth/health_record.htm for a copy of the school health record.

Postural Screening

Background/Rationale
The purpose of postural screening is threefold: (1) to detect early signs of spinal problems that should have further medical evaluation, (2) to provide regular monitoring, and (3) to reduce the need for surgical remedies. Screening must be done annually in grades 5–9 because of growth spurts and diverse rates of physical maturation.

Postural screening is required by Massachusetts statute. Like other screening programs conducted in the schools, this program is not intended to provide medical diagnosis, but rather to detect possible early signs of spinal problems that should have further medical evaluation.

There are 3 major types of spine curvature: scoliosis, kyphosis, and lordosis.

Scoliosis is a lateral (sideways) curvature of the spine with primary onset at ages 10–15. Signs of scoliosis occur in about 10% of the population, with equal frequency among both genders, although only about 2%–3% develop a condition that requires medical attention; girls are about 8 times more likely than boys to exhibit this magnitude of curvature.

Scoliosis affects an estimated 6 million people in the United States, and there is no cure. Much is unknown about this condition: why people get it, which cases will progress, or how far they will progress. What is known is the impact it can have on those affected. Scoliosis can significantly diminish quality of life, causing pain, limiting activity, reducing respiratory function, and eroding self-esteem. Scoliosis must be identified during the growth spurt to maximize effectiveness of treatment.

Kyphosis is a front-to-back spinal curvature with a protrusion in the midline of the back, sometimes resulting in a deformity described as a humpback or hunchback. This progressive spinal disorder is not as prevalent as scoliosis and can affect either adults or children (males slightly more often than females).

Lordosis, a disorder defined by an excessive inward curve of the spine, may be found in all age groups. It primarily affects the lumbar (lower back) spinal region, but also can occur in the neck (cervical). When found in the lumbar spine, the patient may appear swayback, with prominent buttocks and a generally exaggerated posture. Because the spine's natural curves, which position the head over the pelvis and work as shock absorbers to distribute mechanical stress during movement, are disturbed, a lumbar lordosis can be painful and sometimes can affect movement.

There is no known way to prevent scoliosis, kyphosis, and lordosis, but early detection and prompt treatment are advisable to help prevent these curves from becoming severe problems.

What the Law Says

Since April 1980, M.G.L. c.71, s.57 has required all public school systems in the Commonwealth to provide postural screening to all students in grades 5–9. These requirements may not be waived except on religious grounds. This statute assigns DPH as the administrative authority, after consultation with DOE and the medical profession, to determine implementation requirements.

Regulations issued by DPH relevant to the physical examination of schoolchildren are 105 CMR 200.000 through 200.920. Postural screening protocols developed by DPH in accordance with the above requirements are consistent with the "Procedures for Health Appraisals" section in regulations 105 CMR 200.600 and 200.700.

DPH strongly recommends that public school systems closely follow the guidelines developed in accordance with these statutes and regulations when implementing the postural screening program. If a parent/guardian refuses postural screening by the school, written documentation provided by the family physician must be submitted to the school nurse, including the date of screening, results, and physician's name.

Procedure

The screening program has 2 components: (1) an initial educational session (by the school nurse or other trained health care professional) for each class of students to be screened, and (2) the screening itself.

The initial classroom contact should include the specifics of screening: information on when, where, and how the screening will be done; what the screener looks for; special clothes to be worn during the screening; and a short discussion of postural problems. This speaker should seek to convey a positive attitude about the program and its preventive nature, emphasizing the student's own self-interest in having a screening. (Note: Avoid using the terms "scoliosis," "kyphosis," or "lordosis" when referring to the program; "postural screening" is sufficient.)

A schedule for screening should be prepared and coordinated in advance with classroom teachers. Girls and boys are screened separately, by an adult screener of the same gender whenever possible. Because the student's back should be bare for optimal viewing of the spine, girls are asked to wear a halter top and shorts or a bathing suit. (Extra tops should be made available). If possible, the screening area should be located in a place that will accommodate a steady flow of traffic, with separate doors for entrance and exit. Student privacy must be respected at all times. There should be enough space to allow the screener to move freely around the student for front, back, and side views. One minute or less per student is generally the time required for screening. (This varies with experience, with novice screeners taking 2–3 minutes per student.)

Screening Positions and Referral Criteria

For detailed information, please read DPH's postural screening training manual at http://www.mass.gov/dph/fch/schoolhealth/psmanual04.pdf. See Exhibit 5-4 for a description of screening positions.

Practical suggestions for completing the screening include:

- Place a piece of tape on the floor to indicate where the student should stand.
- To save time, have some students get dressed while others are being screened. (Be sure to maintain privacy and confidentiality, however.)
- Record each student's name on the Postural Screening Worksheet, including those who

are not being screened. If for any reason a student is not screened, note the reason next to the student's name. (Some schools record this information with handheld computers, downloading students' names from an administrative database.)
- Record all positive findings on the Postural Screening Worksheet.
- Arrange another time to screen students who missed the original screening session.

Personnel
The school nurse coordinates all the activities related to the screening program — materials, equipment, and space; training and cooperation of other staff; parent/guardian notification; student screening; use of instructional materials; access to materials for interested community members; and recordkeeping.

Individuals conducting the screening should receive training offered through DPH and use materials contained in DPH's manual to assist in implementing a postural screening program. According to the Massachusetts guidelines described in the legal section above and further defined in DPH's postural screening manual, postural screening should be conducted by physical education teachers, school nurses, and/or school physicians. Use of any other personnel to conduct postural screening is not recommended, although health educators and classroom teachers can provide instructional backup.

DPH's protocol recommends that physical education teachers conduct the initial screen and that the school nurse rescreen all children with positive findings. DPH also recommends that school nurses and school physicians inform physician colleagues in the community that the school is completing a postural screening program and prepare them to receive referrals. The school physician may also participate in rescreening before referrals are made.

Notification of Parents/Guardians
Consistent with DPH recommendations, parents/guardians should be notified of the date of the screening, the reason, statutory requirements, and proper clothing. Additional educational materials may also be included in this letter. (DPH's postural screening program manual provides a sample letter to parents/guardians.)

Equipment
A scoliometer (inclinometer) is not included in DPH protocols. If a scoliometer is used, all screeners are required to have proper training in its use, and policies must be in place regarding referral criteria. Note: Screening with a scoliometer cannot replace screening for kyphosis and lordosis.

Referral and Follow-up
Children with positive findings should be scheduled for a rescreening by the school nurse. Typically, 1 in 10 students is targeted for referral after rescreening. These students' parents/guardians should be contacted by phone and by a follow-up letter, which parents/guardians can pass on to the child's physician. The follow-up letter may also be sent directly to the physician at the parents' request, if they give the name and address of the child's primary care provider. (Note: Regulations require school districts to refer parents/guardians of children with positive findings to a primary care provider for follow-up.) DPH's postural screening program manual provides a sample letter to parents.

Referral and follow-up are vital to the success of any screening program. Primary care providers in the community should be informed about the school's postural screening program. Developing collaborative relationships with these providers will facilitate the referral and follow-up process.

Recordkeeping and Documentation
DPH's postural screening worksheet should be used to document positions in which the student is viewed by the screener, any positive findings, and follow-up activities. DPH also provides a postural screening summary report for reporting the number of students screened, number in treatment, number referred for rescreening, results of physicians' examinations, and comments. All school districts must submit this report annually to DPH's School Health Unit.

Lead Blood Screening

Background/Rationale
The prevalence of toxic lead in the environment, particularly in older housing, has been a continuing concern of health officials nationwide. In Massachusetts, hundreds of children are poisoned each year by ingestion of lead paint, and approximately 2,500 children have blood lead levels above 10 micrograms per deciliter (mcg/dL) (MACLPPP Screening and Incidence Statistics, 2004), which CDC defines as a "level of concern" for lead in a child's body.

Lead can damage the brain, kidneys, and nervous systems of young children. Very high levels can cause retardation, convulsions, and coma. Several studies associate elevated lead levels during toddler age to lower performance in high school, increased absenteeism, lower vocabulary and grammatical reasoning scores on standardized tests, and poorer hand-eye coordination (Bellinger & Dietrich, 1994; Needleman et al., 1990). Furthermore, recent studies indicate that even levels of lead that were once thought harmless can affect development, interfere with a child's ability to achieve in school, and cause learning and behavioral problems (Canfield et al., 2003).

A blood test is the only way to know if a child has lead poisoning. Massachusetts regulations require annual testing of children under 4 for lead poisoning, with additional testing at age 4 for children living in high-risk communities. (High-risk communities are updated annually; contact Childhood Lead Poisoning Prevention Program at 800-532-9571 or http://www.mass.gov/dph/clppp for updates.)

Sources of Lead: The most common source of lead poisoning is lead-based paint, which contributes to other sources of lead poisoning such as lead-contaminated household dust and soil. Children between the ages of 9 months and 6 years living in houses built before 1978 (the year the Department of Commerce recalled residential lead paint) are most at risk; approximately 45% of older Massachusetts homes and public buildings still contain layers of lead-based paint, which can create hazardous lead dust when old paint peels and cracks or when buildings are renovated. Airborne lead from auto exhaust and from stationary sources such as smelters and refineries can also increase the lead content of dust and soil. Adults working in lead-related jobs, hobbies, or crafts can bring home lead dust on their clothes, hands, and hair. Lead is most highly concentrated in house dust and in soil within 3 feet of a building and in areas close to busy streets, parking lots, and driveways. Additional secondary sources of elevated lead levels include drinking water and canned foods containing lead.

Children become poisoned when they eat or suck on lead-painted surfaces or items coated with lead dust. Typical sources include railings, window wells and sills, door thresholds, toys, furniture, and jewelry. Children playing outdoors can also become poisoned by ingesting contaminated dirt. Frequent handwashing, especially before meals or snacks, can help to reduce risk. Eating foods high in calcium, iron, and vitamin C can also help prevent lead absorption.

Who Is at Risk
Children aged 6 months to 6 years who (1) live in, or frequently visit, housing built before 1978 that is dilapidated or undergoing renovation, (2) have siblings or housemates who are lead-poisoned,

(3) have family members who engage in lead-related hobbies or occupations, or (4) live near industries likely to result in atmospheric lead release are considered at high risk for exposure.

What the Law Says

M.G.L. c.111, s.193 and DPH's lead poisoning prevention and control regulations (150 CMR 460.050–460.070) require universal, periodic blood lead screening for preschool children, once between the ages of 9 months and 12 months, and again at ages 2 and 3. The health care provider must also determine whether a child is at high risk for lead poisoning and, if so, schedule an additional screening at age 4. Lead poisoning screening is a condition for entry into kindergarten. Regulations of the Office of Child Care Services require child care centers to obtain documentation, for each child, of compliance with DPH's mandatory screening schedule.

Consistent with the Massachusetts Lead Law, DPH's Childhood Lead Poisoning Prevention Program provides a full range of prevention services to Massachusetts children, their families, and others with an interest in the prevention of childhood lead poisoning. For more information, call 800-532-9571 or see http://www.mass.gov/dph/clppp.

The Massachusetts Lead Law (M.G.L. c.111, s.189A-199B) also requires property owners to remove or cover lead paint hazards in homes built before 1978 that house children under 6. To determine lead hazards, the owner must hire a licensed lead inspector. Lead paint hazards include loose lead paint, lead paint below the 5-foot level on accessible mouthable surfaces, and lead paint on moveable parts of windows or window parts that are rubbed by moveable parts. Only a licensed deleader may do high-risk deleading work, such as removing lead paint or repairing chipping and peeling lead paint. However, the owner or someone who works for the owner can do certain other deleading work after receiving special training.

A lead inspector who detects lead violations issues an order to the property owner, who must correct the violations within timeframes specified in DPH's regulations or face legal action by the state lead poisoning prevention program or the local board of health. It is the property owner's responsibility to pay for testing and fixing of lead hazards; financial assistance is available through the *MassHousing Get the Lead Out* Program at 617-854-1000, as well as through state tax credits and local resources. Families renting homes containing lead hazards are protected from eviction, retaliatory rent increases, and discriminatory rental practices.

Procedure

Blood is drawn from the child's finger (capillary sample) or arm (venous sample). Lead levels above 10 mcg/dL measured from a capillary sample should be confirmed by a venous blood sample within 3 months. Because blood lead levels tend to be higher in the summer months, children should be screened for lead poisoning between May and October.

Personnel

Primary care providers are responsible for ensuring that testing is available to all children in their care. This applies to physicians practicing at community health centers and hospitals as well as private physicians.

Referral, Medical Treatment, and Follow-up

Chelation therapy, which enables the body to release lead stored in the blood and soft tissue and excrete it through urine, can help children with elevated blood lead levels. Chelating agents are administered via pills or a 5-day series of injections. Children with very high lead levels may require more than one course of treatment.

By reducing blood lead levels, chelating agents can limit future damage to the central nervous system. However, no evidence exists that chelating agents can reverse damage caused before the child is treated. Children diagnosed and treated for lead poisoning should continue to be tested frequently to determine whether additional treatment is necessary.

Recordkeeping and Documentation

Blood lead documentation should be carefully completed with the correct spelling of the child's name, correct birth date, and a confirmed address, including floor or apartment number, where the child is living when the blood is drawn. Accurate addresses allow CLPPP to quickly target high-risk properties that may have poisoned a child. Results of lead screenings should be included on the health care provider's examination form provided by the primary care provider and assessments should be kept in the child's school health record. For a copy of the school health record form, see http://www.mass.gov/dph/fch/schoolhealth/health_record.htm.

Other Screenings and Evaluations (Recommended but Not Required)

Dental Screening

Background/Rationale

Dental screening is designed to detect early dental or oral health problems in children. As an opportunity for individual dental health education, it helps to build a positive attitude toward dental health in children who have not received prior dental care. It also provides baseline information for subsequent evaluation and referrals. Although dental screening can detect cavities or oral health problems, it does not replace a complete examination in a dentist's office. (See Chapter 15 for a discussion of prevention and remediation of oral health problems.)

What the Law Says

Although Massachusetts does not specifically mandate dental examinations, DPH strongly recommends screening children before they enter school, and again in the 3rd and 7th grades. Dental screening may be linked to other medical requirements for children entering school, such as vision and auditory screening and immunizations. Screening is especially important for certain populations such as the homeless, whose transience often precludes preventive care, and children with special needs, whose conditions may complicate dental hygiene. (See Chapter 15 for additional information.)

Protocols

DPH's Office of Oral Health (OOH) recommends using the Basic Screening Survey (BSS) to screen schoolchildren for dental disease and for access to preventive dental sealants. All children participating in a dental screening *should have parental consent prior to being screened.* In 1999, the Association of State and Territorial Dental Directors, in collaboration with the Ohio Department of Health and CDC, established guidelines for the collection of oral health data in schoolchildren. The data collected serve 2 purposes: 1) to identify and refer children with specific oral health problems, and 2) to monitor schoolchildren's oral health status.

BSS utilizes a direct-observation dental screening methodology by trained personnel. Using disposable mirrors and tongue blades and a good overhead light, the dental screener looks in the child's mouth and records: 1) history of disease (Y/N); 2) untreated disease (Y/N); 3) presence of at least 1 dental sealant on a permanent molar (Y/N); and 4) treatment urgency (0 = no problem; 1 = suspected problem; 2 = urgent need). However, BSS does not include counting of teeth, cavities, or fillings. A parent/guardian questionnaire is also recommended to assess access to dental treatment services.

The dental screening provides an excellent opportunity to educate schoolchildren about the importance of oral health. Partnering with a local dentist or dental hygienist is a good way to introduce oral health to children in a school-based setting; however, when dental providers are not available, school nurses and other health personnel may be trained in the use of BSS. Training kits including a manual and video are available for purchase. See http://www.astdd.org.

Recordkeeping and Documentation
OOH provides data-collection tools for recordkeeping and documentation, as well as BSS technical assistance and training. All schools are asked to submit a final data-collection form upon completion of the school-based screening. The submitted data contains only aggregate data for surveillance purposes.

Referral and Follow-up
DPH recommends notifying parents/guardians of children's oral health status upon completion of the dental screening. Any child with suspected cavities or urgent needs should see their family dentist for dental treatment.

For some school populations, follow-up by the school nurse is extremely important in overcoming barriers to obtaining dental care. For example, homeless students may need transportation or telephone access. The district's homeless education liaison is designated to provide such help to homeless children. For families that do not have a dentist or cannot afford regular dental care, the school nurse should contact the local dental society or OOH (617-624-6074) for assistance.

The Teacher's Role
Teachers play an important role in promoting oral health and participation in school-based dental screenings. When teachers advocate for oral health and for screening participation, generally more children participate. Teachers may also reinforce the importance of daily toothbrushing, a healthy diet, and other good oral hygiene practices. And because teachers see students daily, they may be aware of behaviors such as finger sucking/nailbiting that may cause dental or speech problems.

The school nurse should inform teachers of any problems affecting students. For example, children with oral infections or missing teeth may need more time to eat lunch. (See also chapters 3 and 15 for guidelines for health education.)

Blood Pressure Assessment

Background/Rationale
Because elevated blood pressure is a risk factor for the development of premature cardiovascular disease, blood pressure assessment in children and adolescents (with subsequent referral and follow-up) could extend the years of healthy life for many Americans.

What the Law Says
Massachusetts does not mandate blood pressure screening.

Recommendations
The American Heart Association and the American Academy of Pediatrics recommend annual blood pressure measurements for children age 3 and older. Trained health personnel should follow standards for procedures, standards, equipment, referral, and follow-up. Blood pressure measurement should be included in the physical examination as part of the continuing care of the child, not as an isolated screening procedure.

Health recommendations for preventing high blood pressure in children and adolescents include regular physical activity; a diet rich in fresh fruits, fresh vegetables, fiber, and lowfat dairy; limited sodium intake; maintaining a healthy weight; and avoiding smoking.

Cholesterol Screening

Background/Rationale

Evidence exists that atherosclerosis begins in childhood and that this process is associated with elevated levels of blood cholesterol. Prevention or slowing of the atherosclerotic process in childhood and adolescence could extend the years of healthy life for many people. Cholesterol screening can detect elevated blood cholesterol levels and other risk factors for coronary heart disease. Like all screening programs, preliminary cholesterol screening is designed to indicate students who may require further evaluation; it does not diagnose disease.

What the Law Says

Massachusetts does not require cholesterol screening of school-age children.

Recommendations

The National Cholesterol Education Program (NCEP) Report of Expert Panel on Blood Cholesterol Levels in Children and Adolescents recommends selectively screening children and adolescents who have a family history of premature cardiovascular disease (before age 55) or at least 1 parent with high blood cholesterol (greater than 240 mg/dL), as well as those whose parental or grandparental history is unobtainable.

This screening should occur within the context of regular health care. Cholesterol screening usually does not take place in schools; it must be done by facilities that are approved by DPH. Examples of groups or facilities that may receive such approval are the Visiting Nurses Association (VNA), home health agencies, hospitals, and clinical laboratories.

Because lack of information about health status and family history can make it difficult to determine whether students fall into any of the above high-risk categories, it is also important to encourage the populationwide changes in nutrient intake and eating patterns that will lower the average levels of blood cholesterol among all American children and adolescents. (See chapters 3 and 9 for more information on nutrition.)

Skin Cancer Screening and Prevention

Background/Rationale

Skin cancer is the most rapidly increasing form of cancer in the Commonwealth. Teaching children sun-safe habits can reduce the risk that they will get skin cancer as adults. Although it is not required, some schools have begun to collaborate with local dermatologists to screen for atypical moles and other signs of sun damage during postural screening. This is a unique opportunity to teach students about sun safety and about skin cancer and its symptoms. Some school nurses are also collaborating with local dermatologists, the American Cancer Society, and/or the Melanoma Foundation of New England to use facial dermatological scan machines at health fairs and in health rooms to provide students with immediate feedback as to facial sun damage already present and the importance of protecting skin through the use of sunscreen.

Prevention Education and Resources

Recognizing the role of schools in skin cancer prevention, CDC has developed *Guidelines for School Programs to Prevent Skin Cancer Among Young People,* available at: http://www.cdc.gov/HealthyYouth/skincancer/publications.htm. The guidelines emphasize

measures schools can take to prevent ultraviolet (UV) exposure, including providing shade for outdoor activities and teaching parents/guardians and students about the importance of sunscreen and protective clothing, and about the long-term effects of sunburn.

Another valuable resource for school policymakers is *Fit, Healthy, and Ready to Learn: A School Health Policy Guide,* a guidebook developed with funding from CDC's Division of Adolescent and School Health. Published in 2002 by the National Association of State Boards of Education (NASBE), *Fit, Healthy, and Ready to Learn* provides information on how to integrate sun safety into a coordinated school health program. CDC also recommends Project S.A.F.E.T.Y. (Sun Awareness For Educating Today's Youth), a science-based skin cancer awareness and prevention curriculum developed by the University of Texas M. D. Anderson Cancer Center. Self-contained sets of materials for the elementary, middle, and high school levels are available at http://www.mdanderson.org/departments/projectsafety/. See the Resources section at the end of this chapter for more materials and websites dedicated to skin cancer screening and prevention.

Policy Implications for Schools

Schools can take a leadership role in skin cancer prevention through development of policies that include (1) use of sunscreen for outdoor activities and field trips, (2) provision of shade for outdoor activities, and (3) prevention education.

Community Support

Skin cancer prevention is a community responsibility. Parks and recreation facilities should be encouraged to develop sun-safe policies. Youth sports activities such as Little League, soccer, and football offer excellent opportunities to teach sun safety. Health professionals in the community, including pediatricians, primary care providers, nurses, pharmacists, and dermatologists, can also support school and community programs through presentations, professional training, demonstrations, and classroom visits, and they may serve as advocates for skin cancer prevention policies, environmental changes, and programs. During consultations with children and parents, these health professionals can also assess sun-exposure patterns, reinforce sun-protective behaviors, and provide counseling to people with sunburn.

Tanning Booths/Beds/Lamps

Tanning lamps emit UVA and often UVB rays, both of which can cause skin damage and increase skin cancer risk. A good time to implement skin cancer prevention programs — which include mention of the dangers of tanning lamps — is prior to spring proms.

What the Law Says

M.G.L. c.111, s.211 states: "No person fourteen years of age to seventeen years of age, inclusive, shall use a tanning device without the prior written consent of a parent or legal guardian who shall indicate therein that such parent or guardian has read and understood the warnings required under the provisions of section two hundred and nine. No person under fourteen years of age shall use a tanning device unless accompanied by a parent or legal guardian."

SUMMARY

School health service programs, and the health assessment and screenings they offer, provide an important safety net for all schoolchildren. By offering “walk-in” services on a daily basis, school nurses provide easy access to health assessments and appropriate referrals to other components of the health care delivery system.

Massachusetts legislation requires specific health assessments at important intervals in children’s growth and development. These mandated physical examinations provide opportunities for assessment of children by primary care providers. Mandated vision and hearing screening programs provide early detection of health conditions that may affect learning. As schools increasingly assume responsibility for monitoring students’ body mass index (BMI), they will play a crucial role in addressing the epidemic of childhood obesity. Oral health assessments and services are also becoming a component of the comprehensive, coordinated health program, making schools partners with local oral-health resources in preventing and treating many health problems. As school health programs continue to develop their infrastructures, they will provide additional opportunities to address and identify other emerging health conditions (e.g., cholesterol screening, skin cancer prevention and screening).

RESOURCES

Blood Pressure Assessment

Massachusetts Department of Public Health
Health Promotion and Chronic Disease Prevention Unit
250 Washington Street
Boston, MA 02108
Phone: 617-727-0944
Website: http://www.mass.gov/dph/fch/dchp.htm
The Massachusetts Division of Health Promotion and Disease Prevention develops programs to encourage healthy behaviors in individuals. These programs focus on the areas of nutrition, physical activity, disease prevention, genetics, healthy aging, and gender-specific health.

Cholesterol Screening

National Cholesterol Education Program (NCEP)
NHLBI Health Information Network
P.O. Box 30105
Bethesda, MD 20824-0105
Phone: 301-592-8573
Fax: 240-629-3246
Website: http://www.nhlbi.nih.gov/about/ncep/
NCEP was established by the National Heart, Lung, and Blood Institute (NHLBI) in 1985 to raise awareness about high cholesterol, educate people about prevention methods, and communicate the benefits of lowering cholesterol levels.

Dental Screening

Massachusetts Department of Public Health
Office of Oral Health (OOH)
250 Washington Street
Boston, MA 02108
Phone: 617-624-5943
Fax: 617-624-6062
Website: http://www.mass.gov/dph/fch/ooh.htm
OOH provides dental certificates to school personnel free of charge.

Massachusetts Dental Society
2 Willow Street, #200
Southborough, MA 01745-1027
Phone: 508-480-9797 or 800-342-8747
Fax: 508-480-0002
Website: http://www.massdental.org
The Massachusetts Dental Society is a professional organization with the goal of promoting the benefits of good oral health through education, advocacy, and promotional efforts. The public section of the website serves as a resource of information about orofacial health, filing complaints, dental careers, and locating dentists.

Hearing Screening

Massachusetts Department of Public Health
School Health Services
250 Washington Street
Boston, MA 02108
Phone: 617-624-6060

Website: http://www.mass.gov/dph/fch/schoolhealth/index.htm
Local school nurses can request training sessions and registration for certification from DPH.

American Speech-Language-Hearing Association (ASHA)
10801 Rockville Pike
Rockville, MD 20852
Phone: 800-498-2071
TTY: 301-897-5700
Fax: 301-571-0457
Website: http://www.asha.org
ASHA is a professional association for speech-language pathologists, audiologists, and speech, language, and hearing scientists in the United States and internationally. ASHA aims to promote the interests of these professionals and to advocate for people with communication disabilities.

Height and Weight Screening

Massachusetts Department of Public Health (MDPH)
Office of Nutrition
250 Washington Street
Boston, MA 02108
Phone: 617-624-6100
Fax: 617-624-6179
Website: http://www.mass.gov/dph/fch/nd.htm
A division of MDPH's Bureau of Family and Community Health (BFCH), the Nutrition Division encompasses a number of programs and campaigns in the state. The Women, Infant, and Children (WIC) Nutrition Program provides health education, healthy food, and related services for qualifying families. The Growth and Nutrition Program supports children with growth deficiencies known as "Failure to Thrive" (FTT) by combating undernourishment through a multidimensional team approach. The Office of Nutrition also has information about breastfeeding, the importance of folic acid, and the Food Stamp Outreach Program.

Lead Blood Screening

Massachusetts Department of Public Health
Childhood Lead Poisoning Prevention Program (CLPPP)
250 Washington Street
Boston, MA 02108
Phone: 617-624-5757 or 800-532-9571
Fax: 781-774-6700
Website: www.mass.gov/dph/clppp/clppp.htm
CLPPP was established for the prevention, screening, diagnosis, and treatment of lead poisoning, including the elimination of sources of poisoning, through research and through educational, epidemiologic, and clinical activities.

National Lead Information Center (NLIC)
8601 Georgia Avenue, Suite 503
Silver Spring, MD 20910
Phone: 800-424-LEAD (800-424-5323)
TTD: 800-526-5456
Fax: 585-232-3111
Website: http://www.epa.gov/lead/pubs/nlic.htm
Through its website, NLIC dispenses information about lead hazards and their prevention, basic facts about lead (in English and Spanish), information about lead in the news, resources for professionals having contact with lead, and further resources about lead-related regulations.

Postural Screening

Massachusetts Department of Public Health
School Health Services
250 Washington Street
Boston, MA 02108
Phone: 617-624-6060
Website: http://www.mass.gov/dph/fch/schoolhealth/index.htm
Contact DPH to request training and approval of postural screeners. DPH also owns copies of the National Scoliosis Foundation video *Growing Straighter and Stronger* for lending to schools on a first-come, first-served basis, although DPH encourages individual school systems to purchase their own copies from the National Scoliosis Foundation.

National Scoliosis Foundation (NSF)
72 Mount Auburn Street
Watertown, MA 02172
Phone: 800-NSF-MYBACK (673-6922)
E-mail: NSF@scoliosis.org
Website: http://www.scoliosis.org/
NSF is a patient-led nonprofit organization providing support for those suffering from spinal deformities such as scoliosis. The foundation provides support through early screening efforts, information about treatment methods, and generally promoting public awareness about spinal deformities.

Scoliosis Research Society (SRS)
555 East Wells Street, Suite 1100
Milwaukee, WI 53202-3823
Phone: 414-289-9107
Fax: 414-276-3349
E-mail: info@srs.org
Website: http://www.srs.org
SRS is a professional organization of physicians and health personnel with two primary goals: one, to provide continuing education for health care professionals, and two, to support and fund research on spinal deformities.

Preschool Assessment

Developmental Medicine Center (DMC)
Children's Hospital Boston
300 Longwood Avenue, Fegan 10
Boston, MA 02115
Phone: 617-355-6501
Website: http://www.childrenshospital.org/clinicalservices/Site1921/mainpageS1921P0.html
DMC provides comprehensive neurodevelopmental assessments for children 0–3 years old. Typical referrals to the DMC infant teams include children with developmental concerns such as language and communication delays, motor issues, behavioral problems, and PDD/autism.

School Health Screening (General)

Massachusetts Department of Public Health
School Health Services
250 Washington Street
Boston, MA 02108
Phone: 617-624-6060
Website: http://www.mass.gov/dph/fch/schoolhealth/screening.htm
One of the many services provided by the Massachusetts Department of Public Health School Health Services is School Health Screening. The Screening website provides information on how to conduct various

types of screenings, how to request a waiver, and what the Massachusetts laws concerning the physical examination of school children are.

National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP)
Centers for Disease Control and Prevention (CDC)
4770 Buford Highway, NE, MS K-40
Atlanta, GA 30341-3717
Phone: 770-488-5403
Fax: 770-488-5971
Website: http://www.cdc.gov/nccdphp/index.htm
The CDC's Chronic Disease Prevention Center presents an overview of chronic disease in the United States, addresses the costs of chronic disease and the cost-effectiveness of prevention, discusses the burden of chronic disease on minority populations and women, and provides links to other relevant information.

Skin Cancer Screening and Prevention

Massachusetts Health Promotion Clearinghouse
Website: http://www.maclearinghouse.com.
Funded by the Massachusetts Department of Public Health, the Massachusetts Health Promotion Clearinghouse website provides free resources on a range of health topics including skin cancer prevention: http://www.maclearinghouse.com/CatalogPageFrameSet.htm.

Melanoma Education Foundation
P.O. Box 2023
Peabody, MA 01960
Phone: 978-535-3080
Fax: 978-535-5602
E-mail: skincheck@comcast.net
Website: http://www.skincheck.com
The Melanoma Education Foundation is a non-profit organization established to increase awareness of melanoma by conducting high school and middle school workshops, providing information about self-detection, and organizing talks and screening for area businesses and organizations.

Melanoma Foundation of New England (formerly Massachusetts Melanoma Foundation)
66 Commonwealth Avenue, 1st Floor
Concord, MA 01742
Phone: 617-232-1424
E-mail: info@massmelanoma.org
Website: http://www.massmelanoma.org
Established in 1999, the Melanoma Foundation of New England is working to eliminate melanoma and non-melanoma skin cancers. The Foundation meets this aim by fundraising for childhood education, public awareness, medical research, and support groups for melanoma patients.

National Association of State Boards of Education (NASBE)
277 South Washington Street, Suite 100
Alexandria, VA 22314
Phone 703-684-4000
Fax: 703-836-2313
Website: http://www.nasbe.org/HealthySchools/sun_safety.html#top
NASBE has issued a list of sample policies intended to prevent skin cancer and to promote sun safety in school children. These include: sun safety education, addressing sun safety in outdoor activities, developing a sun safety policy for school staff, and providing families and the community with information about sun safety and the causes of skin cancer.

National Safety Council (NCS)
1025 Connecticut Avenue NW, Suite 1200

Washington, DC 20036
Phone: 202-293-2270
Fax: 202-293-0032
Website: http://www.nsc.org/ehc/sunsafe.htm
NCS is addressing the health issues related to sun safety by providing various fact sheets on their website. These include: Health Effects of UV Radiation; Melanoma/Skin Cancer Detection; Risks from Overexposure to UV Radiation; Preventing Harmful Effects of the Sun; What is the UV Index?; Sun Safety Activity Guide; Kid's Sun Fun; and a list of website links.

Project S.A.F.E.T.Y.
University of Texas M. D. Anderson Cancer Center
1515 Holcombe Blvd., Unit 240
Houston, TX 77045
Phone: 713-745-1205
Fax: 713-792-0800
E-mail: mahearn@mdanderson.org
Website: http://www.mdanderson.org/projectsafety
Project S.A.F.E.T.Y. (Sun Awareness for Educating Today's Youth) is a skin cancer awareness curriculum developed by science and health educators in concert with The University of Texas M. D. Anderson Cancer Center. The program, featuring topics such as ozone depletion, ultraviolet rays and the skin cell cycle, is intended to be incorporated into youth science and health curricula. The program's website provides ordering and technical information as well as skin cancer facts and links to other useful resources.

SHADE Foundation of America
Virginia G. Piper Cancer Center
10510 N. 92nd Street, Suite 100
Scottsdale, AZ 85258
Phone: 480-614-2278 or 866-41-SHADE
Website: http://www.shadefoundation.org/
The SHADE Foundation of America was founded by Shonda Schilling in 2002 after she overcame a battle with melanoma. The foundation's main goals are bringing awareness and education of skin cancer to children through their Sunwise education, SHADE cover grants (for prevention), screening programs, and promotion of sun knowledge in the community and schools. The website is an extensive resource for skin cancer prevention information, medical resources, sun safety events, and even links to sun protective shopping.

Skin Cancer Primary Prevention and Education Initiative
Centers for Disease Control and Prevention
Division of Cancer Prevention and Control
National Center for Chronic Disease Prevention and Health Promotion
4770 Buford Highway, NE, MS K-64
Atlanta, GA 30341-3717
Phone: 888-842-6355
Fax: 770-488-4760
E-mail: cancerinfo@cdc.gov
Websites: http://www.cdc.gov/cancer/skin/
CDC provides leadership for nationwide efforts to reduce illness and death caused by skin cancer. The CDC Skin Cancer webpage includes manuals and brochures for schools about the topic. Their Skin Cancer Primary Prevention and Education Initiative recently published a fact sheet that contains the latest statistics about skin cancer: http://www.cdc.gov/cancer/skin/pdf/0607_skin_fs.pdf.

U.S. Environmental Protection Agency (EPA)
SunWise Program
1200 Pennsylvania Avenue NW (6205J)
Washington, DC 20460
Phone: 202-343-9591
Fax: 202-343-2338

Website: http://www.epa.gov/sunwise/schools.html
This program aims to teach the public how to protect themselves from overexposure to the sun through classroom-based, school-based, and community-based components. Its *SunWise ToolKit,* available at http://www.epa.gov/sunwise/tools.html, contains crosscurricular classroom lessons for grades K-8 that combine education about sun protection and the environment. As part of its SunWise program, EPA, in partnership with the National Weather Service (NWS) and with guidance from the World Health Organization, has developed a new version of the UV Index called the Global Solar UV Index. Available at http://www.epa.gov/sunwise/uvindex.html, the new index includes UV forecasts for 58 U.S. cities from NWS and allows users to check the UV outlook for their area by ZIP code.

Vision Screening

Massachusetts Department of Public Health
School Health Services
250 Washington Street
Boston, MA 02108
Phone: 617-624-6060
Website: http://www.mass.gov/dph/fch/schoolhealth/index.htm
Local school or health administrators should contact this office to request training sessions and registration for certification.

National Eye Institute (NEI)
2020 Vision Place
Bethesda, MD 20892-3655
Phone: 301-496-5248
Fax: 301-402-1065
Website: http://www.nei.nih.gov
NEI was established in 1968 as one of the National Institutes of Health (NIH) in order to protect the vision of Americans. NEI supports research about eye diseases and other vision disorders and develops professional and educational programs intended to prevent blindness, reduce visual impairment, and increase awareness of services available for people with impacted vision.

Prevent Blindness America (formerly National Society to Prevent Blindness)
500 East Remington Road
Schaumburg, IL 60173
Phone: 800-331-2020 or 847-843-2020
Fax: 847-843-8458
E-mail: info@preventblindness.org
Website: http://www.preventblindness.org
Prevent Blindness attempts to translate medical and technological advances in the field of eye care into practical and obtainable services for the public. It sponsors vision screening and educational projects to detect vision problems in young children and adults. Information and advisory services related to current treatments, available facilities, research findings, and medical knowledge in the fields of eye care, eye disease, eye health, and eye safety are available upon request. Prevent Blindness's program of professional education provides health professionals and health service groups with eye-care resource materials and educational programs related to services in the community.

Publications include:

- pamphlets on eye diseases, young eyes, adult eyes, eye safety, vision screening, and glaucoma education and detection;
- teaching materials, including curriculum aids, and pamphlets designed for professionals; and
- educational videos on adult and children's vision problems and on eye safety.

Prevent Blindness Massachusetts (PBM)
100 Cummings Center, Suite 330C
Beverly, MA 01915
Phone: 978-524-9500

Fax: 978-922-2300
E-mail: preventblind@aol.com
Website: http://www.pbmass.org/
PBM is a local nonprofit volunteer-driven organization dedicated to saving sight through public education, community-based vision screening programs, and research.

REFERENCES

Abramson, J. M. (2003). Feasibility of school-based spirometry screening for asthma. *Journal of School Health, 73*(4), 150–153. PMID: 12728613.

Allensworth, D. D. & Bradley, B. (1996). Guidelines for adolescent preventive services: A role for the school nurse. *Journal of School Health, 66*(8), 281–285. PMID: 8899585.

American Academy of Pediatrics, Committee on School Health. (2000). School health assessments. *Pediatrics, 105*, 875–877.

American School Health Association. (1997). *Policy statement: Scoliosis screening in schools.* Kent, OH: Author.

Arnold, R. W. (2004). Pseudo-false positive eye/vision photoscreening due to accommodative insufficiency. A serendipitous benefit for poor readers? *Binocular Vision & Strabismus Quarterly, 19*(2), 75–80. PMID: 15180592.

Arvidson, C. R. & Colledge, P. (1996). Lead screening in children: The role of the school nurse. *Journal of School Nursing, 12*(3), 8–13. Review. PMID: 9043258.

Bellinger, D. & Dietrich, K. N. (1994). Low-level lead exposure and cognitive function in children. *Pediatric Annals*, *23*(11), 600–605.

Boynton, R. W., Dunn, E. S., Stephens, G. R. & Pulcini, J. (2003). *Manual of ambulatory pediatrics.* Hagerstown, MD: Lippincott, Williams & Wilkins.

Canfield, R. L., Henderson, C. R. Jr., Cory-Slechta, D. A., Cox, C., Jusko, T. A. & Lanphear, B. P. (2003). Intellectual impairment in children with blood lead concentrations below 10 µg per deciliter. *New England Journal of Medicine, 348*(16), 1517–1526.

Carek, P. J., Futrell, M. & Hueston, W. J. (1999). The pre-participation physical examination history: Who has the correct answers? *Clinical Journal of Sport Medicine, 9*(3), 124–128. PMID: 10512339.

Cavendish, R. (2001). Standardized language to describe abdominal pain. *Journal of School Nursing*, *17*(5), 266–273.

Centers for Disease Control and Prevention. (2002). Guidelines for school programs to prevent skin cancer. *Morbidity and Mortality Weekly Report*, *51*, RR-4.

Chomitz, V. R., Collins, J. L., Kim, J., Kramer, E. & McGowan, R. (2002). Screening and family education: Overweight prevention pilot study in Cambridge, MA. *Paper presented at the 130th Annual Meeting of APHA*. (For details, contact Institute for Community Health, Cambridge, MA at 617-665-3807.)

Clemens, C., Doolittle, R. P. & Hoyle, M. (2002). Kindergarten health assessment reports: what do schools really learn from them? *Clinical Pediatrics, 41*(2), 93–98. PMID: 11931338.

Cohen, S. M. (2001). Lead poisoning: A summary of treatment and prevention. *Pediatric Nursing, 27*(2), 125–130. PMID: 12962248.

Crouch, D. (2004). How nurse intervention is tackling child obesity. *Nursing Times*, *100*(31), 26–27. PMID: 15360074.

Denehy, J. (2004). Health report cards: An idea whose time has come? *Journal of School Nursing*, *20*(3), 125–126.

Eibschitz-Tsimhoni, M., Friedman, T., Naor, J., Eibschitz, N. & Friedman, Z. (2000). Early screening for

amblyogenic risk factors lowers the prevalence and severity of amblyopia. *Journal of the American Association for Pediatric Ophthalmology and Strabismus, 4*(4), 194–199. PMID: 10951293.

Enzenauer, R. W., Freeman, H. L., Larson, M. R. & Williams, T. L. (2000). Photoscreening for amblyogenic factors by public health personnel: the Eyecor Camera System. *Ophthalmic Epidemiology, 7*(1), 1–12. PMID: 10652167.

Falkner, B. & Daniels, S. R. (2004). Summary of the fourth report on the diagnosis, evaluation, and treatment of high blood pressure in children and adolescents. *Hypertension*, *44*(4), 387–388.

Flanary, V. A., Flanary, C. J., Colombo, J. & Kloss, D. (1999). Mass hearing screening in kindergarten students. *International Journal of Pediatric Otorhinolaryngology, 50*(2), 93–98. PMID: 10576608.

Flegal, K. M., Ogden, C. L., Wei, R., Kuczmarski, R. L. & Johnson, C. L. (2001). Prevalence of overweight in U.S. children: Comparison of U.S. growth charts from the Centers for Disease Control and Prevention with other reference values for body mass index. *American Journal of Clinical Nutrition, 73*(6), 1086–1093. PMID: 11382664. Available online at http://www.ajcn.org/.

Flegal, K. M., Wei, R. & Ogden, C. (2002). Weight-for-stature compared with body mass index-for-age growth charts for the United States from the Centers for Disease Control and Prevention. *American Journal of Clinical Nutrition, 75*(4), 761-766. PMID: 11916765. Available online at www.ajcn.org.

Fryer, G. E. Jr., Igoe, J. B. & Miyoshi, T. J. (1997). Considering school health program screening services as a cost offset: A comparison of existing reimbursements in one state. *Journal of School Nursing, 13*(2), 18–21. PMID: 9146218.

Fukaya, M. (1998). The nurse's office as refuge. *Monograph (55).*

Geller, A., Rutsch, L., Kenausis, K. & Zhang, Z. (2003). Evaluation of the SunWise School program. *Journal of School Nursing, 19*(2), 93–99.

Gerber Zimmermann, P. (2003). Assessment of abdominal pain in school-age children. *Journal of School Nursing, 19*(1), 4–10.

Green, M. & Palfrey, J. (Eds.). (2000). *Bright futures: Guidelines for health supervision of infants, children and adolescents* (2nd ed.). Arlington, VA: National Center for Education in Maternal and Child Health.

Guo, S. S., Wu, W., Chumlea, W. C. & Roche, A. F. (2002). Predicting overweight and obesity in adulthood from body mass index values in childhood and adolescence. *American Journal of Clinical Nutrition, 76*(3), 653–658. PMID: 12198014. Retrieved in 2006 from www.ajcn.org.

Hatmaker, G. (2003). Development of a skin cancer prevention program. *Journal of School Nursing, 19*(2), 89–92.

He, Q. & Karlberg, J. (2002). Probability of adult overweight and risk change during the BMI rebound period. *Obesity Research, 10*(3), 135–140. PMID: 11886935. Retrieved in 2006 from www.obesityresearch.org.

Hedley, A. A., Ogden, C. L., Johnson, C. L., Carroll, M. D., Curtin, L. R. & Flegal, K. M. (2004). Prevalence of overweight and obesity among U.S. children, adolescents, and adults, 1999–2002. *Journal of the American Medical Association, 291*(23), 2847–2850. PMID: 15199035.

Hick, C. B. & Tharpe, A. M. (2002). Listening effort and fatigue in school-age children with and without hearing loss. *Journal of Speech Language and Hearing Research*, *45*(3), 573–584. PMID: 12069009.

Hug, T. (2004). Full-time occlusion compared to part-time occlusion for the treatment of amblyopia. *Optometry, 75*(4), 241–244. PMID: 15117057.

Hunter, D. G., Nusz, K. J., Gandhi, N. K., Quraishi, I. H., Gramatikov, B. I. & Guyton, D. L. (2004). Automated detection of ocular focus. *Journal of Biomedical Optics*, *9*(5), 1103–1109. PMID: 15447031.

Jackson, R. J., Cummins, S. K., Tips, N. M. & Rosenblum, L. S. (1998). Preventing childhood lead poisoning: The challenge of change. *American Journal of Preventive Medicine*, *14*(3 Suppl.), 84–86. PMID: 9566943.

Joish, V. N., Malone, D. C. & Miller, J. M. (2003). A cost-benefit analysis of vision screening methods for pre-schoolers and school-age children. *Journal of the American Association for Pediatric Ophthalmology and Strabismus*, *7*(4), 283–290. PMID: 12917617.

Kalich, K., Chomitz, V. R., McGowan, R. & Must, A. (2004). School-based weight screening: The students' perspective. Presentation delivered at Public Health and the Environment, Washington, D.C.

Kemper, A. R., Fant, K. E., Bruckman, D. & Clark, S. J. (2004). Hearing and vision screening program for school-aged children. *American Journal of Preventive Medicine, 26*(2), 141–146. PMID: 14751326.

Krueger, W. W. & Ferguson, L. (2002). A comparison of screening methods in school-aged children. *Otolaryngology and Head and Neck Surgery, 127*(6), 516–519. PMID: 12501102.

LaMontagne, L. L., Hepworth, J. T., Cohen, F. & Salisbury, M. H. (2004). Adolescents' coping with surgery for scoliosis: Effects on recovery outcomes over time. *Research in Nursing & Health, 27*(4), 237–253.

Lonstein, J. E. & Carlson, J. M. (1984). The prediction of curve progression in untreated idiopathic scoliosis during growth. *Journal of Bone and Joint Surgery*, *66*(7), 1061–1071.

McCrindle, B. W. (2001). Cardiovascular risk factors in adolescents: Relevance, detection, and intervention. *Adolescent Medicine, 12*(1), 147–162.

Mervis, C. A., Boyle, C. A. & Yeargin-Allsopp, M. (2002). Prevalence and selected characteristics of childhood vision impairment. *Developmental Medicine and Child Neurology*, *44*(8), 538–541.

Morrissy, R. T. (1999). School screening for scoliosis. *Spine, 24*(24), 2584–2591. Review. PMID: 10635521.

National Association of School Nurses. (1992). *Vision screening guidelines for school nurses.* Scarborough, ME: Author.

National Association of School Nurses. (1995). *Postural screening guidelines for school nurses.* Scarborough, ME: Author.

National Association of School Nurses. (1998). *The ear and hearing: A guide for school nurses.* Scarborough, ME: Author.

National High Blood Pressure Education Program Working Group on High Blood Pressure in Children and Adolescents. (2004). The fourth report on the diagnosis, evaluation, and treatment of high blood pressure in children and adolescents. *Pediatrics, 114*(2), 555–576. Retrieved in 2006 from www.pediatrics.org.

Nead, K. G., Halterman, J. S., Kaczorowski, J. M., Auinger, P. & Weitzman, M. (2004). Overweight children and adolescents: a risk group for iron deficiency. *Pediatrics*, *114*(1), 104–108. PMID: 15231915.

Needleman, H. L. & Gatsonis, C. A. (1990). Low-level lead exposure and the IQ of children. *Journal of the American Medical Association, 263*, 673–678.

Nussinovitch, M., Finkelstein, Y., Amir, J., Greenbaum, E. & Volovitz, B. (2002). Adolescent screening for orthopedic problems in high school. *Public Health, 116*(1), 30–32.

Ogden, C. L. (2004). Defining overweight in children using growth charts. *Maryland Medicine, 5*(3), 19–21. PMID: 15495854.

Oliveria, S. A., Geller, A. C., Dusza, S. W., Marghoob, A. A., Sachs, D., Weinstock, M. A., et al. (2004). The Framingham school nevus study: A pilot study. *Archives of Dermatology,140*(5), 545–551. PMID: 15148098.

O'Loughlin, J., Lauzon, B., Paradis, G., Hanley, J., Levy, E., Delvin, E., et al. (2004). Usefulness of the American Academy of Pediatrics recommendations for identifying youths with hypercholesterolemia. *Pediatrics*, *113*(6), 1723–1727.

Piomelli, S. (2002). Childhood lead poisoning. *Pediatric Clinics of North America, 49*(6), 1285–1304, vii. PMID: 12580366.

Quinn, G. E., Beck, R. W., Holmes, J. M. & Repka, M. X.; Pediatric Eye Disease Investigator Group. (2004). Recent advances in the treatment of amblyopia. *Pediatrics, 113*(6), 1800–1802. PMID: 15173508. Retrieved in 2006 from www.pediatrics.org.

Randolph, R. F., Hudak, R. L. & Vaught, C. (2003). Communicating hearing loss information to young children effectiveness of lecture and printed materials. *American Association of Occupational Health Nurses*, *51*(10), 433–438. PMID: 14596383.

Salmon, D. A., Moulton, L. H., Omer, S. B., Chace, L. M., Klassen, A., Talebian, P., et al. (2004). Knowledge, attitudes, and beliefs of school nurses and personnel and associations with non-medical immunization exemptions. *Pediatrics, 113*(6), e552–559. PMID: 15173536. Retrieved in 2006 from www.pediatrics.org.

Saraiya, M., Glanz, K., Briss, P., Nichols, P., White, C. & Das, D. (2003). Preventing skin cancer: Findings of the task force on community preventive services on reducing exposure to ultraviolet light. *Morbidity and Mortality Weekly Report,* 52(RR15), 1–12.

Schneider, M. B., Friedman, S. B. & Fisher, M. (1995). Stated and unstated reasons for visiting a high school nurse's office. *Journal of Adolescent Health, 16*(1), 35–40. PMID: 7742334.

Sorof, J. M., Lai, D., Turner, J., Poffenbarger, T. & Portman, R. J. (2004). Overweight, ethnicity, and the prevalence of hypertension in school-aged children. *Pediatrics, 113*(3), 475–482. PMID: 14993537. Retrieved in 2006 from www.pediatrics.org.

Sorof, J. M., Turner, J., Martin, D. S., Garcia, K., Garami, Z., Alexandrov, A. V., et al. (2004). Cardiovascular risk factors and sequelae in hypertensive children identified by referral versus school-based screening. *Hypertension, 43*(2), 214–218.

Skybo, T. & Ryan-Wenger, N. (2003). Measures of overweight status in school-age children. *Journal of School Nursing, 19*(3), 172–180.

Sweeney, J. F. & Sweeney, D. D. (2000). Frequent visitors to the school nurse at two middle schools. *Journal of School Health, 70*(9), 387–389. PMID: 11127003.

Thronson, F. E. Jr. (2002). Diagnosing acute abdominal pain: Your ears may tell you more than your hands. *Advance for Nurse Practitioners, 10*(8), 55–58, 72.

Tsao, J. C. & Zeltzer, L. K. (2003). Sex differences in pain-related symptoms and self-initiated school nurse visits among pre-adolescents. *Journal of Pain and Symptom Management, 25*(5), 472–480. PMID: 12727046.

Velezis, M. J., Sturm, P. F. & Cobey, J. (2002). Scoliosis screening revisited: Findings from the District of Columbia. *Journal of Pediatric Orthopedics, 22*(6), 788–791.

Vessey, J. A., Ben-Or, K., Mebane, D. J., Krapac, N. E., Cobb, N., Poltrack, M., et al. (2001). Evaluating the value of screening for hypertension: An evidence-based approach. *Journal of School Nursing, 17*(1), 44–49. PMID: 11885106.

Winter, R. B. & Lonstein, J. E. (1997). To brace or not to brace: The true value of school screening. *Spine, 22*(12), 1283–1284. PMID: 9201828.

Wold, S. J. (1990). *School nursing: A framework for practice.* North Branch, MN: Sunrise River Press.

Yawn, B. P., Wollan, P., Scanlon, P. & Kurland, M. (2002). Are we ready for universal school-based asthma screening?: An outcomes evaluation. *Archives of Pediatrics & Adolescent Medicine, 156*(12), 1256–1262.

Yockel, N. J. (2002). A comparison of audiometry and audiometry with tympanometry to determine middle ear status in school-age children. *Journal of School Nursing, 18*(5), 287–292. PMID: 12387595.

Zimmermann, P. G. (2003). Assessment of abdominal pain in school-age children. *Journal of School Nursing, 19*(1), 4–10.

Note: Articles with PMID number have been indexed by PubMed for MEDLINE.

EXHIBITS

Exhibit 5-1 Sample Student Health Encounter Form

Exhibit 5-2 Overview of Basic Required School Health Services

Exhibit 5-3 Guidelines for a School Hearing Screening Program

Exhibit 5-4 Postural Screening Positions

Exhibit 5-1

Sample Student Health Encounter Form

Name:_____ D.O.B.:_____ Date:_____
School:_____ Room #_____

PROVIDER ( ) Nurse ( ) Aide ( ) School Staff Signature _____

Complaint: _____
_____
_____

Observation: _____
_____

Presenting Problem
( ) cold ( ) stomach ache ( ) headache ( ) asthma ( ) allergy ( ) nosebleed
( ) sore throat ( ) pink eye ( ) cramps ( ) insect bites ( ) rash ( ) diarrhea ( ) other

( ) injury at school ( ) laceration ( ) splinter ( ) puncture ( ) bruise ( ) abrasion
( ) possible fracture ( ) sprain ( ) burn ( ) other

( ) injury not at school

( ) dental ( ) toothache ( ) other
( ) school physical ( ) hearing ( ) vision ( ) scoliosis screening
( ) emotional problem ( ) violence to other
( ) possible abuse ( ) possible neglect
( ) immunization
temperature: _____ B.P.: _____ height: _____ weight: _____

Nursing Assessment: _____
_____
_____

Treatment/action taken
( ) counseling ( ) cleaned ( ) Band-aids ( ) ice ( ) rest
( ) 51-A ( ) accident report ( ) lice checks/follow-up
( ) medication ( ) team mtg.

( ) transport EW
( ) conference ( ) teacher ( ) parent ( ) principal
( ) parent notified: letter_____ telephone_____

M.D._____ Person_____ ( ) dismissal

Referral
( ) Neighborhood Health Center ( ) Private Medical Doctor/Facility
( ) Outpatient Department ( ) Social Services
( ) Emergency Department ( ) Dental Services
( ) Mental Health ( ) Other

Exhibit 5-2 Overview of Basic Required School Health Services

1.	Appointment of one or more school physicians and registered nurses (M.G.L. c.71, s. 53). See Chapter 2 of the *Comprehensive School Health Manual* for sample job descriptions (should include job responsibilities as outlined in this document) and MDOE licensure regulations 603 CMR.7.11.
2.	Maintenance of school health records (M.G.L. c. 71, s.34D and M.G.L.c.71, s37L and MDOE regulations 603.CMR.23.000 including mandated immunization records per M.G.L.c.71, s.55).
2.1	Records updated, available and shared (consistent with regulations under the Family Educational Rights and Privacy Act (FERPA) to ensure continuity of care.
2.2	Management information systems including responsibilities for computerization, technology assistance and sharing demographic data.
3.	Mandated immunization review and communicable disease control, including prevention, case finding, and follow-up (M.G.L.c.71, s55) For resources and references: for list of required immunizations: http://www.mass.gov/dph/cdc/epii/imm/imm.htm#school; for school health immunization record: http://mass.gov/dph/fch/schoolhealth/health_record.htm; and for translation of foreign immunization records: http://www.cdc.gov/epiinfo/translations.htm.
4.	Medication administration, storage, and access to prescription and prn (as needed) medications per MDPH regulations (M.G.L. c. 71, s.54B and M.G.L.c.94 and MDPH regulations105 CMR 210.00: *The Administration of Prescription Medications in Public and Private Schools).*
4.1	Medication administration, storage, and access to medications for the treatment of life-threatening allergies (LTA), i.e., epinephrine (MDPH regulations105 CMR 210.100: *The Administration of Epinephrine)* and MDOE guidelines found at: http://doe.mass.edu/cnp/news02/allergy.pdf.
4.2	Properly trained staff to administer epinephrine by auto-injector for individuals with life-threatening allergies. Registration with the MDPH for training unlicensed personnel is required; see: http://mass.gov/dph/fch/schoolhealth/medadmin.htm.
4.3	Physician protocols available for school nurse administration of epinephrine for anaphylaxis due to undiagnosed life-threatening allergies.
4.4	Supply of epinephrine available for above protocols.
5.	Mandated physical examinations and screenings, unless written documentation provided by the student's primary care provider (M.G.L. c.71, s.57); for sample record form: http://mass.gov/dph/fch/schoolhealth/health_record.htm. Program waivers for certain grades available per MDPH regulations 105.CMR 200.910 (see: http://mass.gov/dph/fch/schoolhealth/screening.htm).
5.1	Physical examinations upon original entry and every three to four years thereafter. (MDPH regulations 105.CMR 200.100).
5.2	Lead screening program (M.G.L. c.112, s.12BB and MDPH regulations 460.050 (2)).
5.3	Vision and hearing screenings for all grades, including preschool vision screening, unless waived under MDPH regulations (105 CMR 200.910).
5.4	Postural screenings (grades 5 through 9).
5.5	Growth screenings for all grades unless waived under MDPH regulations (105 CMR 200.910).
6.	Responsibility of both agencies for emergency care planning and provision including individual and group emergencies. (See Chapters 2 and 4 of the revised *Comprehensive School Health Manual).*
6.1	Provision of sufficient number of properly trained staff in urgent care, CPR/ AED and the Heimlich procedure especially for students with special health care needs.
6.2	Emergency preparedness with linkages for local, state and federal emergency management systems.
7.	Case finding, referral, and follow-up with written Individual Health Care Plans (IHCP). (See Chapter 2 of the *Comprehensive School Health Manual).*
8.	Health education and counseling. (See Chapter 3 of the *Comprehensive School Health Manual).*
9.	Supervision of educational collaborative nursing staff.
10.	Appropriate school health facilities, supplies and equipment to address the diverse and complex health service needs of the student population to be served. (See Chapters 2 and 4 of the *Comprehensive School Health Manual).*
11.	Other school health services.

Exhibit 5-3 Guidelines for a School Hearing Screening Program

SCHOOL-BASED HEARING SCREENING PROGRAM	SYSTEM PRIOR TO 2005	SYSTEM BEGINNING JANUARY 2005
Hearing screening program manager is the school nurse leader and/or school nurse	The school nurse leader or a school nurse may supervise and train others and/or perform the individual pure tone screening test/retests to comply with M.G.L. c.71, s.57 and/or chapter 766 special education requirements.	Same as current mode. However, school nurses should review screening with a focus on a comprehensive “hearing conservation program” recommended in consultation with an educational audiologist or speech pathologist.
Children screened	Recommend screening children in pre-K when on site in school district. M.G.L. c.71, s.57 requires screening of all children in grades K-12, unless the school district receives a waiver from DPH for certain grades. The screening time is conducted at the discretion of the local school district. As a result, the screening occurs at different times/months throughout the school year.	Screen children in pre-K when on site in school district in consultation with an educational audiologist or other hearing professional. Screening of preschool-age children is a specialty area that involves behavioral audiometry, requiring additional training. Preschool hearing screening is mandatory (nonwaivable) for children entering school. M.G.L. c.71, s.57 requires screening of all children in grades K-12, unless the school district receives a waiver from DPH for certain grades or the child’s parent/guardian seeks a religious exemption. Consistent with M.G.L. c.71, s.57, DPH is permitted, in consultation with medical professionals and Massachusetts DOE, to revise the guidelines. Recommend screening in the fall months (September, October, November).
Signal type	Group pure tone test or individual pure tone test.	Individual pure tone test only.
Pure tone screening frequency	500, 1000, 2000, and 4000Hz.	1000, 2000, and 4000Hz; eliminate 500Hz due to inability to monitor for an accurate ambient noise level at this frequency. Screening at 500Hz requires 41.5dB SPL when measured using a sound level meter with an octave-band filter centered on this screening frequency.

SCHOOL-BASED HEARING SCREENING PROGRAM	SYSTEM PRIOR TO 2005	SYSTEM BEGINNING JANUARY 2005
Pure tone screening levels	Protocol requires 20dB at 1000 Hz and 2000Hz with a 5dB variance allowable at 500 Hz and 4000Hz.	Screening level at 20dB only. Use this standard across both ears for the recommended frequencies of 1000, 2000, and 4000Hz.
Acoustic immittance screening of middle ear function and/or tympanometry **Note:** Although technological improvements have made equipment less complex, the procedures require intensive training.	Although some school nurses (RN) perform these procedures because the equipment is easy to use, these procedures are not part of the current population-based hearing screening program, and they should only be conducted under the direct supervision and technical assistance of an educational audiologist.	These procedures are not part of the population-based hearing screening program and are not recommended except under the direction of an educational audiologist.
Referral letter and follow-up	Referral letter developed by school district with DPH template.	Referral letter developed by school district with DPH.
Plotting of an audiogram	School nurses (BSN) have been constructing audiograms for children who do not pass the screening.	Eliminate the plotting of an audiogram.
Test administration: **Pass the child when……..**	child identifies 20dB at 1000, 2000Hz, and 20 or 25dB at 500, 4000Hz.	child identifies 20dB at 1000, 2000, or 4000Hz.
Schedule and perform a rescreening when……	child is unable to identify the 20dB level for 1000, 2000Hz, or a 20/25dB level for 500, 4000Hz.	child is unable to identify 20dB at 1000, 2000, or 4000Hz.
Rescreening (readministration of test)*:* **Do not pass the child if ….** (This second test on the same child is the rescreen and should be conducted no later than 2 weeks after original test.)	he/she is unable to identify the 20dB level for 1000, 2000Hz, or a 20/25dB level for 500, 4000Hz. Repeating the criteria confirms the need for a referral if the child does not pass.	he/she is unable to identify 20dB at 1000, 2000, or 4000Hz. Repeating the criteria confirms the need for a referral if the child does not pass.

Exhibit 5-4 Postural Screening Positions

Position I

Student stands facing the examiner. He/she should stand erect but relaxed, feet close together with weight evenly distributed, knees straight, arms at side, eyes straight ahead.

Observe the following:

A. Is one shoulder higher than the other?
B. Is the waistline the same on both sides, or is there a larger space between the arm and flank on one side?
C. Are hips level and symmetrical, or is one side high or more prominent?

REFER IF ANY 2 OUT OF 3 PRESENT

A. Shoulder - Is one shoulder higher than the other?
B. Waist - Is the waistline the same on both sides, or is there a larger space between the arm and flank on one side?
C. Hip - Are the hips level and symmetrical, or is one side higher and more prominent?

Position II

In order to view the entire back, student's back is toward the examiner. Long hair should either be pinned up or be evenly separated and brought forward in front of each shoulder.

Observe the following:

A. Does the head lean to one side?
B. Is one shoulder higher than the other?
C. Is one shoulder blade more prominent than the other?
D. Is there a spinal curvature?
E. Is the waistline the same on both sides, or is the arm-to-body space uneven?

REFER IF ANY 3 OUT OF 5 PRESENT

A. Head - Does the head line up over the crease in the buttocks, or does it lean to one side?
B. Shoulder - Is one shoulder higher than the other?
C. Scapula - Is the wing on one shoulder blade higher or more prominent than the other?
D. Spine - Does there appear to be a curve when you observe the spine?
E. Waist - Is the waistline the same on both sides, or is there a larger space between the arm and flank on one side?

Position III

Student stands erect with his side toward examiner.

Observe the following:

A. **Roundback** - Is there an accentuated roundness in the upper back?
B. **Sway Back** - Is there an accentuated arching in the lower back?

REFER IF EITHER PRESENT

Position IV

Student bends forward until back is parallel to the floor. Feet are together, knees are straight, palms of the hands are together, and head is down. Examine from the front and back view.

Observe the following:

Is there a rib hump on one side?

REFER IF PRESENT

Chest Cage Hump: Are both sides of the back symmetrical, or is the chest cage prominent or bulging on one side?

REFER IF PRESENT

Position V

Student bends forward in position IV. View from the side.

Observe the following: Is there an exaggerated midline hump?

REFER IF PRESENT

Spine Hump: Is there an accentuated midline hump?

REFER IF PRESENT

Position IV

Student bends forward until back is parallel to the floor. Feet are together, knees are straight, palms of the hands are together, and head is down. Examine from the front and back view.

Observe the following:

Is there a rib hump on one side?

REFER IF PRESENT

Chest Cage Hump: Are both sides of the back symmetrical, or is the chest cage prominent or bulging on one side?

REFER IF PRESENT

Position V

Student bends forward in position IV. View from the side.

Observe the following: Is there an exaggerated midline hump?

REFER IF PRESENT

Spine Hump: Is there an accentuated midline hump?

REFER IF PRESENT

Chapter 6

NURSING PRACTICE IN THE SCHOOL SETTING

Networking With Colleagues in the Health Care Field

School Nurse Staffing

School Nursing Practice and Education

DOE Licensure ("Certification") of School Nurses

Standards of Professional School Nursing Practice

The Nursing Process and Documentation

Delegation of Nursing Activities

Medication Administration

Summary

Resources: Massachusetts Agencies and Organizations

Resources: National Agencies and Organizations

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 6

NURSING PRACTICE IN THE SCHOOL SETTING

At a Board of Directors meeting in 1999, the National Association of School Nurses (NASN) adopted the following definition of school nursing:

> "School nursing is a specialized practice of professional nursing that advances the well-being, academic success, and life-long achievement of students. To that end, school nurses facilitate positive student responses to normal development; promote health and safety; intervene with actual and potential health problems; provide case management services; and actively collaborate with others to build student and family capacity for adaptation, self-management, self-advocacy and learning."

In Massachusetts, school nursing is one of the most comprehensive and rapidly evolving nursing specialties, moving from an unrecognized component of the health care delivery system to an active partner in the provision of care to the Commonwealth's children and adolescents. While school nurses in Massachusetts actively assume the responsibilities described in the NASN definition, they have also expanded their public health role.

This expansion of the scope of school nursing practice is a consequence of the redefinition of the role of school health services. Because children spend many hours of every weekday in schools, the school is increasingly regarded as the logical site for prevention, early intervention, referral, and primary care. As growing numbers of children with complex health needs are mainstreamed, schools provide an increasingly diverse and challenging range of health services. In addition, because schools serve large populations of children, they offer newly recognized opportunities to address a range of public health issues such as asthma surveillance, infection control, and overweight prevention (see also Chapter 1).

As school health services broaden and become more complex, so too does the scope of school nursing practice (see also Chapter 1). In a single day, the school nurse may be called upon to exercise skills in assessment, first aid, counseling, health education, specialized treatments (often previously performed only in a formal health care setting), case management, and public health surveillance. School nurses, as public health nurses, must serve as health program managers for large student populations. In this capacity, they must understand the principles of public health and evidence-based practice, as well as assessment, program planning, implementation, and evaluation. As relatively autonomous professionals, with onsite responsibility for serving students with a wide range of health risks, illnesses, and disabilities, both physical and behavioral, school nurses must continuously update and expand their clinical skills. To effectively manage all of these aspects of school nursing practice, school nurses must incorporate information-management technology into their daily activities and future planning.

The expanded scope of school nursing practice requires unprecedented levels of communication and cooperation. Collaboration has become the hallmark of effective school nursing practice. School nurses must work in concert with members of the coordinated school health team, families, primary care

providers, community service providers, and local health and safety authorities to ensure the well-being of individual students and the school population as a whole.

As a consequence of their extensive firsthand knowledge of changes and trends in the health needs of children and adolescents and their experience in working collaboratively with the formal health care delivery system, the input of school nurses is now often actively sought at both community and state levels when health initiatives for youth are developed.

NETWORKING WITH COLLEAGUES IN THE HEALTH CARE FIELD

Unlike their colleagues in hospitals and community nursing services, school nurses practice in a setting where the primary focus is education rather than health. Many schools have only one nurse. Because nurses may not have ready access to professional resources for consultation on health issues, updating skills and knowledge through continuing education and networking becomes critical. Some recommended avenues for informal professional development and cultivation of resources include:

- ***Networking with other school nurses***. Developing opportunities to consult with colleagues in the school nursing specialty is essential to maintaining skills and ensuring support in a very challenging role. In addition, the sharing of successful programs, policies, and procedures can promote the general improvement of school health programs throughout the Commonwealth. Networking may take the form of regular regional meetings, telephone consultation, continuing education, e-mail exchanges, sharing of resources such as videos, or joint participation in research studies. Nurses from different schools may also participate in peer evaluation.

- ***Collaborating with school-based health centers (SBHCs).*** In schools with school-based health centers, collaboration between the school nurse and the SBHC staff is critical and should ideally begin when the SBHC is still in the planning stages. The school nurse has unique opportunities to identify children who need primary care providers and can work with families to enroll their children in the SBHC. In addition to serving as consultative resources for each other, the SBHC staff and school nurses may partner to implement important schoolwide initiatives, such as health fairs, overweight prevention programs, asthma management programs, and support groups for students.

- ***Linking with local health care providers.*** Informing local health care providers about the school health program is essential to incorporating school health into the community health care delivery system. School nurses are encouraged to introduce themselves to a range of health and human-services providers, including oral health professionals, within the communities served by the school district. Nurses should have business cards and school letterhead stationery with their identifying information for use when communicating with providers and families.

- ***Linking with local hospitals.*** The school nurse should establish contacts with the local hospital, especially the pediatric department, including its ambulatory and emergency divisions. This contact facilitates collaboration on individual student care, as well as population-based issues. It may also result in other benefits, such as access for the school nurse to hospital-sponsored educational conferences and course enrichment opportunities for pediatric residency programs that include school health components. A school nurse can potentially both offer such programs experience-based input and facilitate clinical practice for pediatric residents in the school setting.

- ***Linking with local schools of nursing.*** School nurses should develop partnerships with nursing experts in local colleges and universities. Most schools of nursing in Massachusetts currently place their students in public or nonpublic schools for at least a portion of their pediatric clinical experience. Formal memoranda of agreement with the institution of higher education could include the college providing "in-kind" contributions to the district's school nurses, such as consultation; continuing education; tuition waivers; and assistance with studies, program evaluation, and research.

- ***Collaborating with local boards of health (BOHs).*** The local board of health, like the school health program, is a public health agency serving a large population of community residents. It is responsible for implementing local and state health regulations, including isolation and quarantine regulations (which often affect schools). School nurses should initiate collaboration by including local BOH representatives on the school health advisory committee and communicating issues pertaining to the health of the community.

- ***Collaborating on emergency response and bioterrorism planning.*** School nurses are encouraged to participate on local planning committees (with both BOH and public safety representatives) for infectious-disease emergencies and bioterrorism response. Emergency response/bioterrorism planning is one area in which school nurses may also be called upon to collaborate with community authorities in new ways. Most local public health departments would need additional numbers of public health nurses and volunteer nurses to adequately respond to a bioterrorist attack or other large-scale health emergency. The National Association of School Nurses supports the use of school nurses, a skilled workforce, as responders in a mass casualty event, whether it is naturally occurring or as a result of bioterrorism.

- ***Joining local coalitions.*** Membership participation in local planning committees and coalitions addressing issues affecting the health of students and their families is key to successful community collaborations. Because the school nurse has daily experience with issues such as tobacco control, teen pregnancy prevention, and behavioral/emotional health, she/he is in a unique position to provide consultation to others. Since such committees/coalitions are likely to include representatives of the business community, civic groups, and faith-based organizations, they can provide helpful connections and resources for current and future school-health initiatives.

- ***Collaborating on research in school health.*** Research on school health, especially focusing on health and educational outcomes, is essential to guiding program development and enhancing the implementation of evidence-based practice. As more grants become available to study school health, school nurses are strongly encouraged to apply for them, either on their own or in partnership with local institutions of higher education specializing in nursing, medicine, health education, health policy, and economics. Implementing a study in the school setting requires administrative approval and possibly parental consent and Institutional Review Board (IRB) approval for human subject research. As in any true partnership, both the school nurse and the research partner should share in the publication and presentation of study findings.

Collaboration and coordination with colleagues on the school staff (e.g., special education, guidance, social work) and with external providers of school-based student services (e.g., mental health) are discussed in Chapter 2.

SCHOOL NURSE STAFFING

M.G.L. c.71, s.53 requires each school committee to appoint one or more school physicians and registered nurses, assign them to public schools within its jurisdiction, and provide all proper facilities for the performance of their duties. The physicians and nurses must be licensed in Massachusetts.

Deployment of school nurses to schools should be based on the results of a health needs assessment of the student population (see Chapter 2). The 1998 report to the Massachusetts Legislature, *Options for Developing School Health Services in Massachusetts,* recommends one fulltime equivalent (FTE) registered nurse (meeting the DOE licensure requirements) in each building with 250 to 500 students. In buildings with more than 500 students, there should be one fulltime equivalent and 0.1 FTE for each additional 50 students above 500. For buildings with fewer than 250 students, the ratio is calculated at 0.1 FTE for each 25 students.

SCHOOL NURSING PRACTICE AND EDUCATION

School nurses are professional registered nurses issued a license by the Massachusetts Board of Registration in Nursing. M.G.L. c.112, s.80B, the Nurse Practice Act, authorizes the legal practice of nursing in the Commonwealth. The regulations governing nursing practice and nursing education are contained in the Board's regulations at 244 CMR 3.00 – 9.00. The scope of legal nurse practice, including criteria for delegation, is found at 244 CMR 3.00. The statutes and the regulations hold each nurse responsible for his/her own practice. The Accepted Standards of Practice apply in the school setting, just as they would in any other health care arena. Increasingly, nurse practitioners (NPs) are involved in school-based health centers as well as in general school health programs. Regulations including the legal scope of advanced nursing practice governing the NP are contained in the Board's regulations at 244 CMR 4.00.

The dynamic, comprehensive, and expanding nature of school nursing practice demands an appropriate educational and skill level. Massachusetts's colleges of nursing, like their counterparts in other states, have developed baccalaureate, masters, and school nurse practitioner programs responsive to the educational needs of nurses practicing in the school setting. Some school nurses also participate in doctoral programs.

Because of the diversity and complexity of issues affecting children, adolescents, and their families, all school nurses need to continuously participate in educational programs from a variety of fields: health (physical and psychosocial), education, public health, health policy, and law/legislative process (as pertains to current laws and regulations that impact the health of school-age children). To equip themselves to function effectively as managers of school health service programs, school nurses are also encouraged to increase their skills in leadership, program planning, research, and evaluation, and their knowledge of information management systems. Additionally, grant writing and public relations skills may also be helpful in obtaining funding for new programs and relating programming information to the school and community populations, respectively.

DOE LICENSURE ("CERTIFICATION") OF SCHOOL NURSES

All school nurses working in the public schools of Massachusetts are required to be licensed with the Department of Education, as are all administrators, teachers and other support personnel. The Education Reform Act of 1993 amended the Teacher Certification Act to include school nurses. The Department of

Education (DOE), in collaboration with the Department of Public Health (DPH), the Massachusetts School Nurse Organization, and other organizations, developed requirements for an initial license and a professional license for school nurses, similar to those for teachers and other support personnel. These regulations have been in effect since 1994 and have been periodically revised. School nurses must first meet the requirements for initial licensure and, after 5 years (see renewal criteria below), meet the requirements for professional licensure.

The requirements for an initial license are:

(1) a valid license to practice as a Registered Nurse in Massachusetts;
(2) a bachelor's or master's degree in nursing;
(3) a minimum of 2 full years of employment as a Registered Nurse in a child health, community health, or other relevant clinical nursing setting;
(4) completion of an orientation program, based on the requirements for delivery of school health services, as defined by the Department of Public Health; and
(5) a passing score on the communication and literacy skills test.

The initial license is valid for 5 years of employment and may be renewed at the discretion of the Commissioner of Education for an additional 5 years. This license is equivalent to a provisional educator certificate with advanced standing, as defined in M.G.L. c.71, s.38G.

Requirements for a professional license are:

(1) possession of an initial license;
(2) three years of employment as a school nurse; and
(3) completion of one of the following:
    (a) achievement and maintenance of certification or licensure by a nationally recognized professional nursing association as a school nurse, community health nurse, or pediatric/family/school nurse practitioner; or
    (b) a master's degree program (that may include credits earned in a master's degree program for the initial license) in community health, health education, nursing, or public health.

The professional license is valid for 5 years and is renewable for additional 5-year terms, as set forth in 603 CMR 44.00. This license is equivalent to a standard educator certificate, as defined in M.G.L. c.71, s.38G.

Application for licensure as a school nurse is made through DOE, which has the authority to promulgate and implement the licensure regulations. Complete information about licensure, including how to use the Educator Licensing and Recruitment (ELAR) system, may be found at the DOE website, http://www.doe.mass.edu/educators, and an explanation of the licensure system written for school nurses may be found on the website of the Massachusetts School Nurse Organization at http://www.msno.org/certify.html. ELAR, part of the state's e-government initiative, allows prospective Massachusetts "educators" (which includes all professional support personnel such as school nurses) to apply for licensure, renew professional-level license(s), track licensure progress, and view or edit licensure files online.

STANDARDS OF PROFESSIONAL SCHOOL NURSING PRACTICE

In 2000, the Board of Directors of the National Association of School Nurses (NASN) approved the following Standards of Professional School Nursing Practice, which build upon *Standards of Clinical Nursing Practice* 2nd Edition, published in 1998 by the American Nurses Association. Both sets of standards include two sections, "Standards of Care" and "Standards of Professional Performance."

Standards of Care

- ***Standard I. Assessment:*** The school nurse collects client data.
- ***Standard II. Diagnosis:*** The school nurse analyzes the assessment data in determining nursing diagnoses.
- ***Standard III. Outcome Identification:*** The school nurse identifies expected outcomes individualized to the client.
- ***Standard IV. Planning:*** The school nurse develops a plan of care/action that specifies interventions to attain expected outcomes.
- ***Standard V. Implementation:*** The school nurse implements the interventions identified in the plan of care/action.
- ***Standard VI. Evaluation:*** The school nurse evaluates the client's progress toward attainment of outcomes.

Standards of Professional Performance

- ***Standard I. Quality of Care:*** The school nurse systematically evaluates the quality and effectiveness of school nursing practice.
- ***Standard II. Performance Appraisal:*** The school nurse evaluates one's own nursing practice in relation to professional practice standards and relevant statutes, regulations, and policies.
- ***Standard III. Education:*** The school nurse acquires and maintains current knowledge and competency in school nursing practice.
- ***Standard IV. Collegiality:*** The school nurse interacts with and contributes to the professional development of peers and school personnel as colleagues.
- ***Standard V. Ethics:*** The school nurse's decisions and actions on behalf of clients are determined in an ethical manner.
- ***Standard VI. Collaboration:*** The school nurse collaborates with the student, family, school staff, community, and other providers in providing student care.
- ***Standard VII. Research:*** The school nurse promotes use of research findings in school nursing practice.
- ***Standard VIII. Resource Utilization:*** The school nurse considers factors related to safety, effectiveness, and cost when planning and delivering care.
- ***Standard IX. Communication:*** The school nurse uses effective written, verbal, and nonverbal communication skills.
- ***Standard X. Program Management:*** The school nurse manages school health services.
- ***Standard XI. Health Education:*** The school nurse assists students, families, school staff, and community to achieve optimal levels of wellness through appropriately designed and delivered health education.

Note: The language of standards IX, X, and XI was developed from *School Nursing Practice: Roles and Standards* (Proctor, Lordi & Zaiger 1993).

The full text of the standards can be found in *Scope and Standards of Professional School Nursing Practice (2001),* available from NASN at http://www.nasn.org/publications/cataloglist.htm. See Exhibit 6-1 for the ANA Code of Ethics for Nurses.

THE NURSING PROCESS AND DOCUMENTATION

The nursing process can be defined as a thought pattern that allows the nurse to think critically and systematically to make accurate clinical judgments. The components of the nursing process include:

- ***Assessment.*** Systematic collection of health data from students, families, health care providers, school staff, and community agencies.
- ***Diagnosis.*** Analysis and interpretation of collected data and subsequent formation of an appropriate plan of care.
- ***Identification of outcomes.*** Identification of measurable, appropriate, individualized, reasonable, and attainable goals within acceptable time frames.
- ***Planning.*** Selection of interventions to produce the desired measurable outcomes, including but not limited to independent nursing strategies, prescribed medical or other therapeutic regimes, evidence-based best-practice recommendations, and current advances in school health delivery.
- ***Implementation.*** Provision, coordination, supervision, and delegation (as appropriate) of skills, tasks, or activities to support the designed plan of care.
- ***Evaluation.*** Appraisal of the outcome and implementation of necessary, appropriate adjustments to the plan of care to achieve or maintain optimal health.

Communication is central to nursing. The plan of care and the student's response are communicated through complete, accurate, and legible documentation in all records required by federal, state, and local laws and by individual school system policies and procedures. The school nurse has a duty to document each time she or he plans and/or delivers care to a student. The adage "If it is not documented, it was not done" applies here. An individual health record should exist for each student. A system of documentation should include, at minimum, some recording of the trigger for care, subjective and objective data, analysis of the data, a proposed plan responding to collected data, and a decision regarding when to reassess or follow up. (See Chapter 2 for more information on student health records and electronic recordkeeping.)

DELEGATION OF NURSING ACTIVITIES

The Massachusetts Board of Registration in Nursing (Board) is authorized to promulgate regulations concerning nursing practice and nursing education that are consistent with the statutes. These regulations have the same force and effect as law. Information about the Board and its regulations can be found at http://www.mass.gov/dpl/boards/rn/index.htm.

The Board's regulations regarding delegation to and supervision of unlicensed assistive personnel (UAP) are found at 244 CMR 3.05. The regulations give the nurse a framework for deciding how and when to delegate. In the school setting, these decisions are always the responsibility of the individual school nurse, who is directly accountable for the safety of the school's nursing care, including the outcomes of the delegated act.

Key Features of the Nurse Practice Act and Delegation Regulations

The definition of the practice of nursing found at M.G.L. c.112, s.80B states in part that the practice of nursing "involves clinical decision making leading to the development and implementation of a strategy of care to accomplish defined goals." It goes on to state:

> *"The practice of registered nurses shall include, but not be limited to:*
> *(1) the application of nursing theory to the development, implementation, evaluation and modification of plans of nursing care for individuals, families, and communities;*

(2) coordination and management of resources for care delivery; and
(3) management, direction, and supervision of the practice of nursing, including the delegation of selected activities to unlicensed assistive personnel."

The language on delegation is found in the Board's regulations at 244 CMR 3.05: Delegation and Supervision of Selected Nursing Activities by Licensed Nurses to Unlicensed Personnel. It states:

> *"The qualified licensed nurse (Registered Nurse/Practical Nurse) within the scope of his/her practice is responsible for the nature and quality of all nursing care that a patient/client receives under his/her direction.*
>
> *Assessment/identification of the nursing needs of a patient/client, the plan of nursing actions, implementation of the plan, and evaluation of the plan are essential components of nursing practice and are functions of the qualified licensed nurse. The full utilization of the services of a qualified licensed nurse may permit him/her to delegate selected nursing activities to unlicensed personnel.*
>
> *Although unlicensed personnel may be used to complement the qualified licensed nurse in the performance of nursing functions, such personnel cannot be used as a substitute for the qualified licensed nurse. The following sections govern the licensed nurse in delegating and supervising nursing activities to unlicensed personnel. Delegation by Registered Nurses or Licensed Practical Nurses must fall within their respective scope of practice as defined in M.G.L. c.112, s.80B, paragraphs 1 and 2. Said delegation must occur within the framework of the job description of the delegatee and organizational policies and procedures and also must be in compliance with 244 CMR 3.05(4) and (5)."*

Regulations 244 CMR 3.05(4) and (5) detail what may and may not be delegated by the licensed nurse. The regulations at 105 CMR 210.005(G) serve as a guide for the nurse's responsibilities in regard to developing a plan to monitor unlicensed school staff to whom medication administration or other nursing activities are delegated, as well as a plan for addressing problems when they are identified.

Please note: Massachusetts Department of Education sets the licensure requirements for school nurses and restricts them to registered nurses. *Although the Licensed Practical Nurse* ***may not*** *function as a school nurse, she/he may provide 1:1 or 1:2 nursing for children with special medical needs in the school setting.*

Delegation means the legal authority of a licensed person to transfer the performance of a selected activity to an unlicensed person, and these statutes and regulations allow the school nurse to use delegation as an appropriate tool. But delegation is also much more than a tool; it is a management strategy that, when used correctly, supports the delivery of safe and effective nursing care services. Safety and effectiveness are achieved and maintained by adhering to the following criteria:

- The nurse delegating the activity is directly responsible for the care to be delivered.
- The nurse delegating has the final decision as to what activity can safely be delegated.
- The nurse assesses before delegation begins.
- The activity to be delegated is reasonable.
- The activity itself is within the nurse's legal scope of practice.
- The unlicensed person has documented competencies necessary for the proper performance of the activity.
- The nurse will adequately supervise the delegated activity.

Supervision is key to successful delegation. The type of supervision and the degree to which the licensed nurse must supervise is a nursing judgment based on an evaluation of the following factors:

- the stability of the person receiving the care;
- the training and capacity of the unlicensed person to whom the nursing task is delegated;
- the nature of the task being delegated; and
- the proximity and availability of a qualified licensed nurse to the unlicensed person performing the task or activity.

Decision-Making Guidelines

School nurses can minimize health risk or liability related to any delegated activity by following some simple decision-making guidelines:

- **Always assess the individual student's needs prior to delegating any activities.** If a particular activity requires nursing assessment or judgment during implementation, that activity should not be delegated. Similar tasks or activities may have different requirements for nursing assessment or judgment during implementation because of different patient needs, the training of the unlicensed person, or the nurse's own ability to be readily available.

- **Delegate only to persons who have received the appropriate training to carry out a particular activity.** Failure to determine a person's ability to complete a delegated task leaves the nurse susceptible to making an inappropriate delegation decision.

- **Develop a plan to monitor unlicensed school staff to whom medication administration or other nursing activities are delegated, and have a plan for addressing problems when they are identified.** The regulations at 105 CMR 210.005(G) serve as a guide for the nurse's responsibilities in this area. Absent or inadequate monitoring or supervision may result in the nurse failing to identify problems. Unrecognized problems and/or failure to follow through on identified problems may put the patient and nurse at risk.

When an activity is delegated to an unlicensed person, the school nurse should consider the following questions:

- Is there a written plan of care?
- How much supervision will be required?
- When will I reassess or reevaluate?
- Have I made it clear when the unlicensed person must consult with me?
- Have I provided specific instructions about what the unlicensed person should document?
- Have I documented assessments, evaluation plan, and supervision criteria to the unlicensed person?

Activities That May Not Be Delegated

Although the Board's regulations provide guidelines for when to delegate, under 244 CMR 3.05(5) they also include specific criteria regarding those nursing activities that *may not* be delegated. In addition to activities that require nursing assessment and judgment during implementation, these include:

- physical, psychological, and social assessment that requires nursing assessment intervention, referral, or follow-up;
- formulation of the plan of nursing care and evaluation of the patient's or client's response to the care provided; and
- administration of medications, except as permitted by M.G.L. c.94C.

School nurses (registered nurses) are the only category of nurses authorized under Chapter 94C to delegate to unlicensed personnel the administration of medications. There is consistency between the

Regulations Governing the Administration of Prescription Medications in Public and Private Schools (105 CMR 210.000) and those of the Board of Registration in Nursing. For the purposes of 105 CMR 210.000, a Licensed Practical Nurse functions under the general supervision of the school nurse, who has supervisory authority.

MEDICATION ADMINISTRATION

Because many children with conditions requiring medications and other medical technologies are attending school, medication administration is an important issue. While every attempt should be made to schedule medication administration outside the school day, this may not be possible due to the growing numbers of before- and after-school programs, as well as a diversity of both daily and "prescribed as needed" (p.r.n.) medications.

Over-the-Counter Medications

The Massachusetts Board of Registration in Nursing, which governs nursing practice, has promulgated regulations regarding the nurse's administration of all medications, including over-the-counter medications. The Board issued an Advisory Ruling on Nursing Practice Concerning the Administration of Over-the-Counter Medications in June 1992 and revised it in July 2002.

> ***"Advisory Ruling 9207:***
> *Medication Administration in Massachusetts Schools According to Protocols Written by a Duly Authorized Prescriber*
> ***Authority:*** *The Massachusetts Board of Registration in Nursing issues this Advisory Ruling on Nursing Practice pursuant to Massachusetts General Laws, chapter 30A, section 8 and chapter 112, section 80B.*
> ***Date Issued:*** *June 3, 1992*
> ***Date Revised:*** *July 10, 2002*
> ***Scope of Practice:*** *Registered Nurse*
> ***Purpose:*** *To guide the practice of the Registered Nurses who, within their practice as School Nurses, administer Over-the-Counter Medications (OTC).*
> ***Advisory:*** *Registered nurses may administer OTCs to students in Massachusetts schools based on protocols which have been developed in collaboration with the school department's duly authorized prescriber, provided the appropriate school administrative authority allows the use of such protocols.*
>
> *Protocols must include the following information:*
> - *Drug name*
> - *Dose to be administered*
> - *Dosage frequency*
> - *Indications for use*
> - *Contraindications*
> - *Potential side-effects*
> - *Assessment criteria to be gathered prior to administering a particular medication*
>
> *Registered nurses who within their practice as School Nurses administer OTCs must have an assessment of the following information:*
> - *The student's current medication profile*
> - *The student's history of allergies*

- *Parental consent*
- *Documentation of OTC medication administered according to such protocols must conform to the school department's regulations for documentation of medication administration to students*

The duly licensed prescriber, usually the school physician, must sign the protocols."

Administration of Prescription Medications

DPH regulates the administration of prescription medications and has promulgated detailed regulations governing the administration of prescription medications in public and private schools (105 CMR 210.000). To find the most current version of regulations, see the following website: http://www.mass.gov/dph/fch/schoolhealth/medadmin.htm

In July 1992, the legislature enacted a law (amendment to M.G.L. c.71, s.54B) requiring DPH to promulgate regulations governing administration of prescription medications in school settings under M.G.L. c.94C, the Controlled Substances Act. The resultant regulations, promulgated in March 1993, were amended in 1996 (and again in 2003) to address issues relating to the administration of epinephrine by auto injector to students with life-threatening allergic conditions. Exhibit 6-2 provides information about the sample policies and forms, as well as a link to the website containing an overview of the regulations.

In addition, Chapter 71, section 54B has been amended 3 times. In 2002, language was added to state that no school district may prohibit students with asthma or respiratory diseases from possessing and administering prescription inhalers, in accordance with DPH regulations on self-administration of prescription medications (105 CMR 210.006). In 2004, the section was amended to state that no school district may prohibit students with cystic fibrosis from possessing and administering prescription enzyme supplements, in accordance with DPH regulations concerning students' self-administration of prescription medications. In 2005, the section was amended to add the following statement:

> *"Notwithstanding any general or special law or regulation to the contrary, no school district shall prohibit students with diabetes from possessing and administering glucose monitoring tests and insulin delivery systems, in accordance with department of public health regulations concerning students' self-administration of prescription medications."*

Note: Schools must follow the self-administration regulations (105 CMR 210.006) in these special situations.

The purpose of the regulations is to provide minimum standards for the safe and proper administration of prescription medications to students in the Commonwealth's public and private schools, both primary and secondary. The regulations are designed to:

- ensure that students requiring prescription medication during the school day can attend school;
- encourage collaboration between parents/guardians and the school;
- provide school officials, parents, health professionals, and educational personnel with the guidance necessary to ensure safe and proper administration of medications, consistent with the standards of nursing and medical practice;
- set standards for self-administration of medication, thus improving access to medications for students with such conditions as asthma, who may require the use of an inhaler during the school day; and
- recognize and enhance the school nurse's professional role by designating her or him as the manager of the medication administration program.

Key Features of the Regulations

Under M.G.L. c.94C, there are now two options for the administration of prescription medications in public and private schools:

(1) administration by certain licensed professionals such as nurses, physicians, and dentists; and
(2) the delegation model, which permits certain unlicensed personnel to administer prescription medications provided that:
   (a) The school committee or board of trustees approves a policy for administration by school personnel.
   (b) The school nurse (a registered professional nurse appointed under the provisions of M.G.L. c.71, s.53) manages the medication administration program.
   (c) The school committee/board of trustees provides assurance that there are sufficient school nurses to provide safe supervision of unlicensed personnel.
   (d) Unlicensed personnel receive training under the direction of the school nurse and as specified by the department.
   (e) The school system is registered with DPH to ensure compliance with regulations.

Registration Process

The Massachusetts Regulations Governing the Administration of Prescription Medication in Public and Private Schools (105 CMR 210.000) require registration with DPH to permit school nurses to delegate to unlicensed personnel the task of administering prescription medications. Registration is given to the public school district, not to individual school buildings. A public school district whose application is approved may designate the registration to any or all of the school buildings within its system at its own discretion and in accordance with its policies. Registration is also granted to private (nonpublic) schools on an individual basis. There are 3 forms of registration: (a) full delegation, which covers all prescription medications, consistent with 105 CMR 210.000, as well as field trips and epinephrine administration by auto-injector; (b) delegation limited to field trips and short-term special school events; and (c) training of unlicensed personnel to administer epinephrine by auto-injector to individuals (with a diagnosed life-threatening allergy) experiencing a life-threatening allergic event.

Procedures for Registration by Type

All types of registration

The school nurse should submit a written request *on school letterhead* to the DPH School Health Unit (SHU) for an application to register for delegation of prescription medications to unlicensed personnel. The SHU will send a complete application packet. The school nurse should choose which form of registration is desired, complete the application, and return the original application with original authorized signatures.

Please note: The application requires a series of signatures from school officials and the school physician, as well as the name of the school nurse leader or nurse contact who will assume responsibility for the program. Photocopies or faxed completed applications will not be processed.

Registration for full delegation, including field trips and epinephrine administration by auto-injector

This 2-step process is detailed below. See also Exhibit 6-3 for *Guidelines for Reviewing and Approving Applications to Register for Full Delegation of Prescription Medications to Unlicensed Personnel*.

(1) Review by the DPH School Health Unit (SHU): The staff of the SHU conducts a desk review of the initial application and, if it is approved, notifies both the Division of Food and Drugs and the applicant. Applicants who do not meet the requirements for approval are also notified.
Please note: The review process is rigorous and may result in a delay in the notification process.

(2) Application to the Division of Food and Drugs, Department of Public Health, for Registration under the Controlled Substances Act, M.G.L. c.94C, to Delegate Administration of Prescription Medications in Public and Private Schools*:* After notification of the SHU's approval, the applicant may then apply for registration under the Division of Food and Drugs, a process that includes completion of an application questionnaire and payment of an annual registration fee. When the Division of Food and Drugs grants its approval, a formal written registration to delegate the administration of prescription medications to unlicensed personnel under 105 CMR 210.000 is sent to the school by DPH. The school may then proceed with its plan for delegation. **Please note:** Annual registration is required. School districts will receive a renewal application from the SHU 3 months prior to expiration.

The staffs of both the SHU and the Division of Food and Drugs are authorized to make site visits, when appropriate, to review the planning and implementation process. To the extent possible, these will be made on a joint basis.

Field trip registration

For school districts that do not choose the delegation model, except for the purpose of field trips, DPH has developed an expedited registration. Registration will be granted provided the school district agrees to comply with DPH Regulations 210.005(E) (1) (o), which require:

> *"... development of a plan for medication administration during field trips and special school events (unique one-time events which are not part of the regular school schedule and involve travel from the school site). Every effort shall be made to obtain a nurse or school staff member trained in medication administration to accompany students at special school events. When this is not possible, the school nurse may delegate prescription medication to another responsible adult. Written consent from the parent or guardian for the named responsible adult to administer the prescription medication shall be obtained. The school nurse shall instruct the responsible adult on how to administer the prescription medications to the child."*

DPH recommends that school districts develop policies and protocols requiring faculty to submit requests for field trips and give the school nurse a list of participating students at least 3 weeks in advance so that the nurse has adequate time to assess students' special health concerns and make clinically informed decisions regarding nursing coverage and/or medication delegation to unlicensed personnel. Many school districts require an academic year plan for all field trips at the beginning of the school year. Such a policy provides increased assurance that students requiring medications or medical treatments will receive them.

Each school should submit the application to register for field trip delegation to the SHU. The unit staff will review the application and, if approved, send the registration to the school. The registration is for 2 years and expires on June 30 of the second year**.** Prior to expiration, the school district must formally request in writing a new application from the DPH SHU, thus initiating the registration process for the next 2 years. *Because of the volume of expirations during the month of June, the Department suggests submitting application requests 4 weeks prior to the expiration date.*

This expedited registration for field trips covers the administration of epinephrine. ***Please note:*** *As in any form of delegation, the school nurse must make the final determination as to whether a medication may be delegated. See the Board of Registration in Nursing regulations governing delegation.*

Registration to train unlicensed personnel to administer epinephrine by auto-injector to individuals with diagnosed life-threatening allergic conditions who are experiencing a life-threatening allergic event.

DPH amended the school medication regulations in 1996 to provide guidance for the care of children with life-threatening allergic conditions (LTAs). Specifically, if the school district/school is registered with DPH for this purpose, the school nurse may train unlicensed personnel to administer epinephrine by auto-injector to individuals with a diagnosed allergic condition. The amendments cited the requirements for: (a) supervision of the program by a school nurse, (b) a comprehensive medication administration and emergency plan for each potential recipient of epinephrine, (c) an immediate call to emergency medical services whenever epinephrine is administered, and (d) training programs for unlicensed personnel.

To register to train unlicensed personnel to administer epinephrine by auto-injector to individuals (with diagnosed LTAs) experiencing a life-threatening allergic event, schools should submit completed applications to the SHU. The unit staff will review the application and, if approved, send the registration to the school. The registration is for 2 years and expires on June 30 of the second year. Again, prior to expiration, the school district must formally request in writing a new application from the DPH SHU, thus initiating the registration process for the next 2 years. (Application requests should be submitted 4 weeks prior to the expiration date.)

Due to increasing numbers of children with LTAs, DPH advises all school districts to:

(1) Complete this registration process, and
(2) Establish protocols, signed by the school physician, authorizing school nurses to administer epinephrine by auto-injector to individuals previously undiagnosed with an LTA who are experiencing a life-threatening allergic event in the school setting. Stock supplies of epinephrine auto-injectors should be maintained in the school for this purpose. **Note:** Only nurses may administer epinephrine to a previously undiagnosed individual experiencing a life-threatening allergic event.

In 2002, to further assist schools in caring for children with LTAs, DOE, collaborating with representatives from the Asthma and Allergy Foundation of America/New England Chapter, Massachusetts School Nurse Organization, DPH SHU, Massachusetts School Food Service Association, Executive Committee of the Massachusetts School Physicians, Allergy and Immunization Division of Children's Hospital Medical Center in Boston, Massachusetts Teachers Association, Emergency Medical Services, and Framingham State College, published comprehensive guidelines, *Managing Life Threatening Food Allergies in Schools,* available on the DOE website, http://www.doe.mass.edu/cnp/2002/news/allergy.pdf.

In 2003, because of the proliferation of before- and after-school programs and the need to provide for the safe care of children with LTAs, DPH amended the regulations again to accomplish the following:

- establish a process in each school/school district for determining which before- and after-school programs may be covered under the regulations;
- define the storage requirements for epinephrine to allow rapid access by authorized persons;
- require a call to 911 and submission of a written report to DPH each time epinephrine is administered;
- clarify that the administration of parenteral medications may not be delegated to unlicensed personnel, with the exception of epinephrine, as described in 105 CMR 210.100; and
- require unlicensed staff to be properly trained and supervised by a school nurse.

The School Nurse's Role in Medication Administration

Regardless of which option is chosen (administration by licensed professionals or the delegation model), the school nurse's role in medication administration includes:

- policy development;
- collaboration with the school physician, school administrators, and the school health advisory committee;
- management of the medication administration program;
- adherence to completing state-mandated medication reporting forms:
  - report of a drug incident and/or diversion (**please note:** any drug diversion must be reported to local law enforcement);
  - report of EpiPen® Administration (forms are available at http://www.mass.gov/dph/fch/schoolhealth/medadmin.htm); and
- awareness of regulatory changes affecting management of the medication program.

If delegation is approved, additional responsibilities include:

- determining which unlicensed person may administer the medication (within the categories permitted by the school committee), as well as rescinding permission to delegate as appropriate;
- training the identified person(s);
- supervising the unlicensed person(s); and
- monitoring the program.

The School Committee or Board of Trustees' Role

The school committee or board of trustees is responsible for the following:

- adoption of policies and protocols governing the administration of prescription medications and self-administration of prescription medications within the school system, following development of proposals by the school nurse in consultation with the school physician; and
- where the option of delegation is chosen, approval of categories of unlicensed personnel who may administer prescription medications (e.g., administrative personnel, teachers, secretaries, health aides).

Sample Policies and Protocols

To facilitate the implementation of the regulations governing the administration of medication, DPH has developed sample policies, letters, and forms. School systems have 3 options:

(1) adopt the policies as written, placing them on school letterhead and customizing them to their school system; or
(2) make the policies more *(not less)* stringent than the regulations (e.g., accepting only written medication orders rather than using pharmacy-labeled containers for short-term medications of 10 days or less); or
(3) rewrite all the policies and protocols or use their current ones, *provided they are updated to be consistent with regulations.*

Exhibit 6-2 provides information about the sample policies and forms that are available online.

SUMMARY

School nursing is an increasingly challenging specialty. The scope of school nursing practice continues to grow in Massachusetts, and school nurses are taking a more visible and active role within the health care delivery system. These expanded responsibilities bring greater recognition but also higher expectations.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS

Massachusetts School Nurse Organization (MSNO)
P.O. Box 1287
Marblehead, MA 01945-5287
Website: http://www.msno.org/about.html

Massachusetts Department of Education
Certification Office
Phone: 781-338-6600

Massachusetts Department of Public Health
School Health Unit
250 Washington Street
Boston, MA 02108
Phone: 617-624-6060
Fax: 617-624-6062
TTY: 617-624-5992
Website: http://www.mass.gov/dph/fch/schoolhealth/index.htm

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS

American Academy of Nurse Practitioners
P.O. Box 12846
Austin, TX 78711
Phone: 512-442-4262
Fax: 512-442-6469
E-mail: admin@aanp.org
Website: http://www.aanp.org

American Nurses Association
8515 Georgia Avenue
Suite 400
Silver Spring, MD 20910
Phone: 800-274-4ANA (4262) or 301-628-5000
Fax: 301-628-5001
Website: http://www.nursingworld.org

American School Health Association (ASHA)
7263 State Route 43
P.O. Box 708
Kent, OH 44240
Phone: 330-678-1601
Fax: 330-678-4526
E-mail: asha@ashaweb.org
Website: http://www.ashaweb.org/
ASHA publishes *Health in Action,* a quarterly newsletter for school health professionals.

National Association of School Nurses (NASN)
P.O. Box 1300 (163 U.S. Route #1)
Scarborough, ME 04070
Phone: 877-627-6476 or 207-883-2117

Nursing Internet Guide
Health Sciences Library System
University of Pittsburgh and University of Pittsburgh Medical Center
Website: http://www.hsls.pitt.edu/guides/internet/nursing
The Nursing Internet Guide provides links to Internet gateways and sites, articles, directories, archives, and associations.

School Health Alert and SchoolNurse.com
P.O. Box 150127
Nashville, TN 37215
Phone: 615-370-7899
Fax: 615-370-9993
E-mail: cs@schoolnurse.com
Website: http://www.schoolnurse.com
School Health Alert is a monthly, printed newsletter designed to keep school nurses and other interested health professionals up to date on the latest developments in student health services, health education, and safe school environment. SchoolNurse.com is its online incarnation.

The School Nurse Discussion List (SCHLRN-L)
Website: http://www.usinternet.com/users/bergren/schlrn.htm
A public discussion group organized for school nurses, school nurse practitioners, school nurse teachers, and school nurse managers.

REFERENCES

American Academy of Pediatrics, Committee on School Health. (2001). The role of the school nurse in providing school health services. *Pediatrics, 108*, 1231–1232.

American Nurses' Association. (2001). *Code of ethics for nurses with interpretative statements*. Washington, DC: American Nurses' Association.

Awbrey, L. M. & Juarez, S. M. (2003). Developing a nursing protocol for over-the-counter medications in high school. *Journal of School Nursing, 19*(1), 12–15.

Barnes, M., Courtney, M. D., Pratt, J. & Walsh, A. M. (2004). School-based youth health nurses: Roles, responsibilities, challenges, and rewards. *Public Health Nursing, 21*(4), 316–322.

Bobo, N., Adams, V. W. & Cooper, L. (2002). Excellence in school nursing practice: Developing a national perspective on school nurse competencies. *Journal of School Nursing, 18*(5), 277–285.

Bradley, B. J. (1998). Establishing a research agenda for school nursing. *Journal of School Nursing, 14*(1), 4–13.

Brandt, C. M. (2002). Enhancing school nurse visibility. *Journal of School Nursing, 18*(1), 5–10.

Bullock, L. F., Libbus, M. K., Lewis, S. & Gayer, D. (2002). Continuing education: Improving perceived competence in school nurses. *Journal of School Nursing, 18*(6), 360–363. PMID: 12463774.

Carey, A. (2001). Certified Registered Nurse: Results of the study of the certified workforce. *American Journal of Nursing, 101*(1), 44–52.

Costante, C. C. (2001). School health nursing: Framework for the future, Part I. *Journal of School Nursing, 17*(1), 3–11. PMID: 11885103.

Croghan, E., Johnson, C. & Aveyard, P. (2004). School nurses: Policies, working practices, roles and value perceptions. *Journal of Advanced Nursing, 47*(4), 377–385. PMID: 15271156.

Denehy, J. (2001). The value of belonging to your professional organization. *Journal of School Nursing, 17*(4), 175–177.

Descoteaux, A. (2001). The school nurse manager: A catalyst for innovation in school health programming. *Journal of School Nursing, 17*(6), 296–299.

DeSisto, M. C. & DeSisto, T. P. (2004). School nurses' perceptions of empowerment and autonomy. *Journal of School Nursing, 20*(4), 228–233.

Fahrenkrug, M. A. (2003). Development of a nursing data set for school nursing. *Journal of School Nursing, 19*(4), 238–248.

Frame, K. & Kelly, L. (2003). Reading nursing research: Easy as ABCD. *Journal of School Nursing, 19*(6), 326–329.

Guilday, P. (2000). School nursing practice today: Implications for the future. *Journal of School Nursing, 16*(5), 25–31.

Gullion, J. S. (2004). School nurses as volunteers in a bioterrorism event. *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science, 2*(2), 112–117.

Hootman, J. (2002). The importance of research to school nurses and school nursing practice. *Journal of School Nursing, 18(1), 18–24.*

Kelly, M. W., McCarthy, A. M. & Mordhorst, M. J. (2003). School nurses' experiences with medication administration. *Journal of School Nursing, 19*(5), 281–287. PMID: 14498769.

Kolar, K. (2003). Research to reality: Applying findings to practice. *Journal of School Nursing, 19*(6), 361–362.

Lordi, S. & Bradley, B. (2000). *Standards of professional school nursing practice: Applications in the field.* Scarborough, ME: National Association of School Nurses.

Massachusetts Department of Education. (2002). *Managing life threatening food allergies in schools.* Malden, MA: Massachusetts Department of Education.

McCarthy, A. M., Kelly, M. W. & Reed, D. (2000). Medication administration practices of school nurses. *Journal of School Health, 70*(9), 371–376.

Mejdell Awbrey, L. & Juarez, S. M. (2003). Developing a nursing protocol for over-the-counter medications in high school. *Journal of School Nursing, 19*(1), 12–15.

National Association of School Nurses. (2000). *Position statement: Epinephrine use in life-threatening emergencies.* Retrieved from http://www.nasn.org/positions/Epinephrine.htm.

National Association of School Nurses. (2002). *Issue brief: The role of the school nurse*. Retrieved from http://www.nasn.org/briefs/role.htm.

National Association of School Nurses. (2002, rev.). *Position statement: Delegation*. Retrieved from http://www.nasn.org/positions/delegation.htm.

National Association of School Nurses. (2002). *Position statement: Education, licensure, and certification of school nurses.* Retrieved from http://www.nasn.org/positions/education.htm.

National Association of School Nurses. (2003). *Position statement: Medication administration in the school setting*. Retrieved from http://www.nasn.org/positions/medication.htm.

National Association of School Nurses. (2003). *Position statement: Professional development/continuing education*. Retrieved from http://www.nasn.org/positions/pdce.htm.

National Association of School Nurses. (2003, rev.). *Position statement: School nurse supervision/evaluation.* Retrieved from http://www.nasn.org/positions/supervision.htm.

National Association of School Nurses and American Nurses Association. (2001). *Scope and standards of professional school nursing practice.* Washington, DC: American Nurses Publishing.

Pavelka, L., McCarthy, A. M. & Denehy, J. (1999). Nursing interventions used in school nursing practice. *Journal of School Nursing, 15*, 29–37.

Pulcini, J., Couillard, M., Harrigan, J. & Mole, D. (2002). Personal and professional characteristics of exemplary school nurses. *Journal of School Nursing, 18*(1), 33–40.

Reutzel, T. J., Patel, R. & Myers, M. A. (2001). Medication management in primary and secondary schools. *Journal of the American Pharmaceutical Association, 41*(1), 67–77.

Schwab, N. & Gelfman, M. (Eds.). *Legal issues in school nursing*. North Branch, MN: Sunrise River Press.

Selekman, J. & Guilday, P. (2003). Identification of desired outcomes for school nursing practice. *Journal of School Nursing, 19*(6), 344–350.

Sheetz, A. H. & Blum, P. (1998). Medication administration in the schools: The Massachusetts experience. *Journal of School Health, 68*(3), 94–98.

Shipley Zaiger, D. (2001). *School nursing practice: An orientation manual* (2nd ed.). Scarborough, ME: National Association of School Nurses.

Simmons, D. R. (2001). Autonomy in practice: A qualitative study of school nurses' perceptions. *Journal of School Nursing, 18*(2), 87–94.

Solum, L. L. & Schaffer, M. A. (2003). Ethical problems experienced by school nurses. *Journal of School Nursing, 19*(6), 330–337. PMID: 14622040.

Telljohann, S. K., Price, J. H., Dake, J. A. & Durgin, J. (2004). Access to school health services: Differences between full-time and part-time school nurses. *Journal of School Nursing, 20*(3), 176–181.

Tustin, J., Canham, G., Berridge, J., Braden, D. & Starke, T. (2002). Professional development and appraisal system for school nurses. *Journal of School Nursing, 18*(4), 229–236.

Wickline Ryberg, J., Keller, T., Hine, B. & Christeson, E. (2003). Data speak: Influencing school health policy through research. *Journal of School Nursing, 19*(1), 17–22.

Wold, S. (1981). *School nursing: A framework for practice*. North Branch, MN: Sunrise River Press.

Note: Articles with PMID number have been indexed by PubMed for MEDLINE.

EXHIBITS

Exhibit 6-1 ANA Code of Ethics for Nurses

Exhibit 6-2 Sample Medication Policies, Procedures, and Forms Available Online

Exhibit 6-3 Guidelines for Reviewing and Approving Applications to Register for Full Delegation of Prescription Medications to Unlicensed Personnel

Exhibit 6-1

ANA CODE of ETHICS FOR NURSES
(Provisions only)

The ANA House of Delegates approved these nine provisions of the new *Code of Ethics for Nurses* at its June 30, 2001 meeting in Washington, DC. In July, 2001, the Congress of Nursing Practice and Economics voted to accept the new language of the interpretive statements resulting in a fully approved revised *Code of Ethics for Nurses With Interpretive Statements.*

1. The nurse, in all professional relationships, practices with compassion and respect for the inherent dignity, worth and uniqueness of every individual, unrestricted by considerations of social or economic status, personal attributes, or the nature of health problems.

2. The nurse's primary commitment is to the patient, whether an individual, family, group, or community.

3. The nurse promotes, advocates for, and strives to protect the health, safety, and rights of the patient.

4. The nurse is responsible and accountable for individual nursing practice and determines the appropriate delegation of tasks consistent with the nurse's obligation to provide optimum patient care.

5. The nurse owes the same duties to self as to others, including the responsibility to preserve integrity and safety, to maintain competence, and to continue personal and professional growth.

6. The nurse participates in establishing, maintaining, and improving health care environments and conditions of employment conducive to the provision of quality health care and consistent with the values of the profession through individual and collective action.

7. The nurse participates in the advancement of the profession through contributions to practice, education, administration, and knowledge development.

8. The nurse collaborates with other health professionals and the public in promoting community, national, and international efforts to meet health needs.

9. The profession of nursing, as represented by associations and their members, is responsible for articulating nursing values, for maintaining the integrity of the profession and its practice, and for shaping social policy.

Reprinted with permission from American Nurses Association, *Code of Ethics for Nurses with Interpretive Statements,* ©2001 nursesbooks.org, Silver Spring, MD.

Exhibit 6-2

SAMPLE MEDICATION POLICIES, PROCEDURES, AND FORMS AVAILABLE ONLINE

The following sample policy and procedure documents and forms may be found at http://www.mass.gov/dph/fch/schoolhealth/medadmin.htm:

- Sample Policies and Procedures for the Administration of Medications (based on 105 CMR 210.000)
- Sample Parent/Guardian Letter
- Sample Parent/Guardian Authorization for Prescription Medication Administration
- Sample Medication Order Form
- Sample Medication Administration Daily Log
- Sample Medication Administration Plan

Exhibit 6-3

GUIDELINES FOR REVIEWING AND APPROVING APPLICATIONS TO REGISTER FOR FULL DELEGATION OF PRESCRIPTION MEDICATIONS TO UNLICENSED PERSONNEL 105 CMR 210.000

Massachusetts Department of Public Health, School Health Unit

School districts (public and nonpublic) that may apply for registration are listed in the Massachusetts Department of Education's school directory profile. **Only applications that meet the following criteria will be reviewed:**

1. **Dates and Signatures:** All required signatures and dates signed must be complete and original. (*Please note: No facsimiles or copies of the original application will be accepted for review.)*
2. **Printed Names:** The names are printed in a legible way.
3. **Attendance at the Medication Delegation Workshop:** The date for attendance by the school nurse contact at the School Health Institute program, "Delegation of Medication in the School Setting," is included. (*Please note: the nurse contact's date of attendance should fall within the previous five years.)*
4. **School Building Profile:** The "School Building Profile," a detailed document reflecting your school district's nursing coverage, is completed correctly with all fields accurately documented. This school building profile is critical when evaluating whether your school district may delegate prescription medications. *(Please note: the application is for the entire school district.)*
5. **Sufficient Numbers of School Nurses:** Delegation of prescription medications to unlicensed personnel is not intended to take the place of employment of professional school nurses (as defined by the Massachusetts Department of Education), but rather to add flexibility to the nurse's daily practice. 105 CMR 2120.000 requires that

   > "When a School Committee or Board of Trustees, in consultation with the Board of Health where appropriate, has registered with the Department of Public Health and authorized categories of unlicensed school personnel to administer prescription medications, such personnel shall be under the supervision of the school nurse for the purposes of 105 CMR 210.000. The School Committee or Board of Trustees, in consultation with the Board of Health where appropriate, shall provide assurance that sufficient school nurse(s) are available to provide proper supervision of unlicensed school personnel."

In order to determine the safe level of coverage of school nurses, that is, "sufficient numbers of school nurses," a needs assessment should be completed with attention paid to those children with special health care needs, as well as emergency response time for each building. The school nurse to student ratio (in each building) generally shall be no greater than 1:750 in a general population.[1] *(Please note: in reviewing the application, only the designated school nurses onsite will be considered when applying this ratio.)* In the event that a single building in the applicant district exceeds the 1:750 ratio, but is no greater than 1:900, the Department may consider this application individually, after requiring further information, including plans and timelines to achieve the above ratio in that specific building.

9/10/04

1 Consistent with the 1998 legislative report, *Options for Developing School Health Services in Massachusetts*, the recommended school nurse to student ratio is 1.0 fulltime equivalent (FTE) certified nurse in each building with 250 to 500 students. In buildings with more than 500 students, there should be 0.1 FTE for each additional 50 students. For buildings with fewer than 250 students, the ratio is calculated at 0.1 FTE per 25 students.

Chapter 7

STUDENTS REQUIRING SPECIALIZED HEALTH SERVICES

Scope of the Problem

Legal/Regulatory Issues

Policy Implications for Schools

Planning for the Needs of Individual Students

Transitions

Selected Chronic Conditions

Summary

Resources: Massachusetts Agencies and Organizations (General)

Resources: National Agencies and Organizations (General)

Resources: Specific Health Conditions

Resources: Reading Material for Children and Teens

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 7

STUDENTS REQUIRING SPECIALIZED HEALTH SERVICES

Children and youth with special health care needs are defined by the federal Maternal and Child Health Bureau as those who:

- have, or are at increased risk for, a chronic physical, developmental, behavioral, or emotional condition; and
- require health and related services of a type and amount beyond that required by children generally.

Special health care needs may range from asthma, cystic fibrosis, and diabetes to autism and bipolar disorder. Because some children with special health care needs also have special education needs, this chapter provides a brief description of the planning and process for determining eligibility for special education and, if appropriate, implementing Individualized Education Plans. However, this chapter's major focus is on the safe inclusion of students with specialized health care needs in school settings. It identifies the school nurse as the case manager while emphasizing the need for care planning prior to school entry, during all transitions, and as the child transitions into adulthood. It concludes with brief descriptions of a few of the chronic conditions most commonly found among students in Massachusetts schools.

SCOPE OF THE PROBLEM

Growing Incidence of Chronic Illnesses and Disabilities in the School Setting

Nearly 15% of Massachusetts children have special health care needs. The State and Local Area Integrated Telephone Survey (SLAITS) of Children with Special Health Care Needs, a national survey conducted in 2000–2002, found that more than 220,000 children (14.67%) in the Commonwealth were reported to have at least one special health care need. Of the total group of children with special health care needs reported in the SLAITS survey, approximately 5% are considered to have a severe chronic illness, which is defined as one that interferes significantly with normal functioning and development. Ninety-six percent of the Commonwealth's children with special health care needs are educated in public school settings.

Information about special health care needs in Massachusetts schools is collected by the Essential School Health Services Program (ESHS), formerly the Enhanced School Health Services Program. These programs, implemented in schools covering approximately half of the Commonwealth's student population, are required to submit monthly and annual summary data reports. The annual reports provide valuable snapshots of the prevalence of chronic illnesses and disabilities, and the consequent impact on school nursing practice in public schools, in a diverse sample of Massachusetts schools. They summarize such health and activity indicators as number and type of medications prescribed and dosages administered in schools, number of individual health care plans, number and types of specialized procedures performed by school nurses, and other

information pertaining to children with special health care needs. The annual program summary data reports may be found at http://www.mass.gov/dph/fch/schoolhealth/shpubs.htm.

Advancements in Technologies and Medical Practice

Medical advances have resulted in the survival of children and adolescents with a variety of conditions and diseases previously associated with short life expectancy. Cystic fibrosis, childhood leukemia, diabetes, juvenile rheumatoid arthritis, renal disease, and pediatric HIV (perinatally acquired) are examples of conditions for which life expectancy has been substantially increased. Advances in the field of genetics have identified previously unknown conditions, such as mitochondrial and metabolic diseases, and produced new treatment modalities for these conditions.

An expanding array of technologies to support basic life functions is available to children and adolescents with complex medical conditions. These technologies include devices for mechanical ventilation, gastrostomy feedings, delivery of intravenous medications, and renal dialysis. New devices are relatively portable, making home care and mobility possible for children who once would have been hospital- or residential program-bound. School personnel, with careful planning, training, and ongoing consultation, can now accommodate the health service delivery needs of students who require such technologies in the school setting.

Many of the medical procedures mentioned above were once considered rare and/or clearly outside the responsibility of schools. Now they are part of standard school nursing services. The practice of school nursing will continue to expand as children and adolescents with a wide range of chronic conditions enter schools in the Commonwealth, and as the technology to meet those needs continues to develop.

The inclusion of children and youth with special health care needs in school settings provides benefits for all students. For the former, it offers opportunities to share the spontaneous experiences from which children learn, grow, and develop social skills. For *all* children and adolescents, it provides opportunities to learn from each other and experience diversity in the school community.

LEGAL/REGULATORY ISSUES

Since children with chronic illness spend more time away from their families in school than in any other institution, appropriate school policies and programs are critically important to their health, as well as to their growth and development. There are four major laws (and associated regulations) that relate to children with disabilities and education. These laws cover the accommodations, instruction, and services to which a child is entitled and may receive in school. Most also address education in the least restrictive environment, as defined below:

The Least Restrictive Environment (LRE)
LRE means that children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled, and that special classes, separate schooling, or other removal of children with disabilities from the general educational environment occurs only when the nature or severity of the child's disability is such that education in general classes with the use of supplementary aids and services cannot be achieved satisfactorily. If a child cannot attend school at all for medical reasons, then the school system must provide education services either at home or in the hospital.

IDEA: Individuals with Disabilities Education Act

IDEA is the federal special-education law. Part B, the section of IDEA that bears most directly on this chapter, ensures that eligible students with disabilities aged 3–21 receive a free and appropriate public education (FAPE). Part C of IDEA works differently and includes both preventive services and direct services for children aged 0–3 who have or are at risk for having a disability or developmental delay. This includes infants and toddlers who develop at a different, or at a slower, rate than most other children. These services are called Early Intervention (EI).

IDEA Part B requires public schools to provide those services needed by students with one or more disabilities, when the disability adversely affects their ability to make effective educational progress. IDEA further stipulates that supports and services be provided to students in the least restrictive environment. Under IDEA, a child is eligible for special education if the following three conditions are met:

- the child's disability falls into 1 of 13 disability categories (listed below); and
- the child is not making effective progress in school because of his or her disability; and
- the child requires special education and possibly related services in order to make effective progress.

The 13 disability categories listed in IDEA are autism, deafness, deaf-blindness, emotional disturbance, hearing impairment (including deafness), learning disability, mental retardation, multiple disabilities, orthopedic impairment, other health impairment, speech or language impairment, traumatic brain injury, and visual impairment (including blindness).

Each public school child who receives special education and related services must have an Individualized Education Plan (IEP). (**Note:** Although IDEA uses the term Individualized Education *Program,* Individualized Education *Plan* is the more common usage and will be used throughout this chapter.) The IEP is a legally binding document that guides the delivery of special education supports and services for a particular student with a disability, so each IEP must be designed for that student. IDEA mandates a role for parents/guardians on the team that designs the IEP and makes allowance for the parents/guardians or the school district to invite individuals who have knowledge or special expertise regarding the child to participate as members of the team.

For additional guidance and detail about important provisions of IDEA, refer to the state special education website at http://www.doe.mass.edu/sped/.

Section 504 of the Rehabilitation Act of 1973

Some children with special health care conditions do not need special education services. These children, although not covered by either Massachusetts Special Education Law and Regulations or IDEA, may be protected by other federal laws related to civil rights for individuals with disabilities. Section 504 of the Rehabilitation Act of 1973 is a broad civil rights law that protects the rights of individuals with disabilities in programs and activities that receive federal financial assistance.

Public school districts are recipients of federal funds, and U.S. Department of Education regulations implementing Section 504 define the obligations of these schools and the rights of students. A child may be eligible for some services under a 504 Plan if he or she has a physical or mental health disability (or is perceived to have such a disability) that limits one or more major life functions. For example, the law guarantees the rights of a child who has asymptomatic HIV infection or who has a parent with HIV infection. Although such a child might not be eligible for special education, he or she is protected by Section 504 from discrimination or exclusion from education and is eligible to receive education-related services in any public or private school that receives federal funds.

Section 504 does not require an IEP document but does require a plan. It is recommended that the school district document in writing that a group of people knowledgeable about the student (including the parents/guardians and school nurse) has been convened and that they have specified the agreed-upon services.

A 504 Plan for students with special health care needs can provide for health or disability-related accommodations and, in some cases, services that are necessary for a student to participate fully in the school environment and programs. For example, if a child uses a wheelchair, plans must be made to ensure that the school is wheelchair-accessible. If a child takes prescription medications during school hours, provision will be made for dispensing and monitoring the medications under the school nurse's direction. (See Chapter 6 for further discussion of medication administration in schools.)

A 504 Plan should include:

- a school evaluation;
- a letter from the student's primary care provider describing the disability, related problems, and needed medications and/or treatments;
- accommodations to be provided — physical and instructional;
- an Individual Health Care Plan (IHCP); and
- a copy of the Emergency Information Form for Children with Special Health Needs.

See Exhibit 7-1 for a table that compares IDEA and Section 504.

The Americans with Disabilities Act of 1990 (ADA)

The Americans with Disabilities Act of 1990 (ADA) specifies that as of January 26, 1992, public entities and public accommodations must ensure individuals with disabilities full access to and equal enjoyment of all facilities, programs, goods, and services. ADA extends many of the rights and duties defined by Section 504 to public accommodations such as restaurants, hotels, theaters, stores, doctors' offices, museums, private schools, and child care programs.

Massachusetts Special Education Law and Regulations

The state statute at M.G.L. c.71B and the implementing regulations currently at 603 CMR 28.00 are Massachusetts's special education law and regulations.

The Massachusetts law and regulations, as written, are aligned with the provisions of IDEA. Both federal and state laws require public school systems to provide a free and appropriate education (FAPE) to eligible children with disabilities aged 3–21 in the least restrictive environment. Although the terminology used in the Massachusetts regulations to describe the disability categories under which children may be eligible for services differs slightly from the wording in IDEA, the disabilities included are essentially the same. School districts are required to provide necessary services to assist students who are eligible for special education and services. However, special-education law does not require school districts to provide "medical services" except for certain services that are evaluative or diagnostic in nature. As previously stated, not all children with special health care needs are entitled to or require special education.

Massachusetts's IEP process and forms show a clear intent to ensure that all students are provided with challenging and relevant educational programs with high expectations for educational progress and preparation for independence in adult life, including postsecondary education and employment. Massachusetts guidance on developing IEPs links sound practice with statutory and regulatory requirements. In addition to improving outcomes for current services, this is an important step in providing new services to students with disabilities.

Note: The above listing of laws and regulations is not intended to be comprehensive. Additional references to laws and regulations that relate to specific situations are mentioned within the text of this chapter. Please be certain to also check for new laws and regulations that may be in effect after publication of this Manual. The Massachusetts General Laws may be found online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). Always refer to an official edition of the MGL and CMR.

POLICY IMPLICATIONS FOR SCHOOLS

Most schools are likely to encounter many children and adolescents with special health care needs. School health policies and programs are critically important to the growth and development of these students, allowing them the fullest possible opportunity for participation in academic and extracurricular activities.

District and Schoolwide Planning

School districts and individual schools must meet the challenges of providing services for all children, and particularly to those with special health care needs. These challenges include: comprehensive planning for entry into school; coordination with classroom teachers and community providers; the transport of children with complex health conditions; care of these children before, during, and after school hours at school-sponsored events; classroom and facility adaptations for daily functioning; advanced educational planning for prolonged or periodic hospitalizations; and transitioning to new schools and to adult environments, as applicable. School districts may also be called upon to have procedures for medication administration, revision of classroom curricula and routines to meet an individual child's physical and health-related needs, and development of emergency plans. For some terminally ill children, there may be challenges of implementing Comfort Care orders in the school setting.

Population Needs Assessment

To facilitate planning and implementation of appropriate services, training, and education, schools and school districts need to know the extent of special health care needs within their student population. For this reason, the Massachusetts Department of Public Health (DPH) recommends that every school and district conduct an annual health needs assessment, which includes the number and types of special health care needs in the school population. (See Chapter 2 for a discussion of the development of a community and school health needs assessment.) This assessment would include *all* students with special health care needs, not just those requiring special education services and IEPs.

Importance of a Medical Home

Caring for children with special health care needs requires schools to collaborate closely with the child's primary care provider or "medical home." The American Academy of Pediatrics (AAP), American Academy of Family Physicians (AAFP), and national Maternal and Child Health Bureau (MCHB) are working together to promote medical home partnerships between families caring for children with special health care needs and their pediatricians. Medical home is a health care delivery approach that recognizes families as the principal caregivers and centers of strength and support for children. Children and their families who have a medical home receive the care they need from a physician whom they trust. Pediatric health care professionals and parents/guardians act as partners in a medical home to identify and access all the medical and nonmedical services

needed to help children achieve their maximum potential. The AAP believes that the medical care of children should be accessible, continuous, comprehensive, family-centered, coordinated, compassionate, and culturally effective (American Academy of Pediatrics, 2002). Additional information regarding Massachusetts leadership activities to help build medical home capacity in the state can be found at http://www.medicalhomeinfo.org/resources/state/massachusetts.html.

School nurses, parents/guardians, and the medical home need to work in partnership to plan the care of children with special health care needs within the school setting. With appropriate written consent from parents/guardians, ongoing communications between school health professionals (i.e., school nurses and physicians) and providers should be encouraged, in order to benefit the child's care.

The School Nurse's Role

The school nurse is central to all aspects of care and service delivery for students with special health care needs. The National Association for School Nurses (NASN) considers the school nurse to be the case manager for these students in the school setting. In a position paper on the subject, NASN states: "Delivery of health care in the school setting requires the coordination of multiple health and non-health related services. The school nurse has the knowledge, skills, judgment, and critical thinking, inherent in nursing education and authorized through nursing licensure, to perform efficiently in the role as case manager." In this role, the school nurse "provides oversight of care and services while serving as the point of contact for communication among the student, family, school staff, and health care provider." Specific activities attached to serving as case manager for students with special health needs may include:

- being knowledgeable about the services needed by students with special health care needs, after collaboration with the student, family, and health care provider;
- being knowledgeable about services available in the community and assisting families in obtaining needed services;
- screening for students who would qualify and benefit from case management services for their health care needs;
- providing leadership in interdisciplinary team meetings to assist in planning services to meet the students' health and educational needs;
- implementing the health team's plan of care, by providing either direct or indirect care;
- coordinating continuity of care between the home and school;
- monitoring and evaluating interventions provided for in the health care plan;
- monitoring and evaluating progress toward identified health and educational goals; and
- training, monitoring, and evaluating personnel delegated to perform specific nursing care.

When a student has a health-related condition, a health assessment is conducted by a physician and reviewed by the school nurse. Any additional relevant information should be added from the school health service program. Based on this assessment, the school nurse identifies those health issues that are pertinent to the student's educational progress and recommends services or program modifications that the student requires.

All schools should require that an Individual Health Care Plan (IHCP) be developed for any student with special health care needs who requires clinical assessment and/or care in order to participate in the educational process. The IHCP may be required whether or not a student meets the eligibility requirements for special education.

PLANNING FOR THE NEEDS OF INDIVIDUAL STUDENTS

Thoughtful planning for students with special health care needs promotes quality school-based care, helps to ensure that these students are able to participate to the fullest possible extent in educational and social opportunities, and minimizes the potential for liability, which may be a concern of many school personnel. This kind of planning requires ongoing communication and collaboration among parents/guardians, school personnel, individuals representing a range of disciplines, community providers, specialists, and, when appropriate, the student. The goal is to provide the best possible service delivery to the student.

Special Education Eligibility and Individual Education Plans

This section provides only a brief overview of how special education eligibility is determined and the general process used to develop an Individual Education Plan (IEP). The focus of the remainder of this chapter is on health care planning for students with special health care needs.

Special education is defined as specially designed instruction to meet the unique needs of a given student and/or related services that are necessary for him/her to access the general curriculum.

Specially designed instruction means that there is a need to adapt the content, methodology, delivery of instruction, and/or performance criteria for a student to make effective progress. Related services are developmental, corrective, and other supportive services. Within Massachusetts, related services necessary to access the general curriculum are considered special education and may be provided alone or in combination with specially designed instruction.

If the student *only* requires accommodations, then that student is not eligible for special education. Accommodations are adaptations to presentation or setting that can typically and easily occur in general education (such as preferential seating, wearing eyeglasses, or providing extra time on tests).

The Individual Education Plan (IEP)

An initial evaluation must be completed to determine eligibility. Parents/guardians, or any person in a caregiving or professional position concerned that a student may have a disability or concerned about a student's development, may refer a student for an initial evaluation to determine whether the student needs special education. Upon receipt of this referral, the school district must send notice to parents/guardians and obtain their consent to conduct an evaluation in compliance with 603 CMR 28.04(1). The notice sent to the parents/guardians should describe the types of assessments recommended by the district and should include, at a minimum, an educational assessment and an assessment in the area of the suspected disability. The school may recommend, or the parents/guardians may additionally request, a comprehensive health assessment, a psychological assessment, or a home assessment. Within 30 school days of receiving parent/guardian consent, the school district must evaluate the referred student, and within 45 days of receiving such consent, the school district must schedule a team meeting to discuss the evaluation results and determine if the student is eligible for special education.

An eligibility determination must be made by a team of people that includes parents/guardians and qualified professionals knowledgeable about the evaluation information. For students with special health care needs, the team should include the school nurse.

The evaluation process should be sufficiently comprehensive and individualized to identify the child's unique needs, and it must specifically assess *whether the disability is causal to an inability to make educational progress,* a finding that is pivotal in the eligibility determination. (Additionally,

the law clearly states that students may not be determined eligible solely because of a need for reading or math instruction or because of limited English proficiency or social maladjustment.)

No single procedure should be used as the sole criterion of eligibility. Relying on a single test or single test battery for all students would not be adequate or legally appropriate. Evaluation can include formal and informal assessments and other evaluation strategies, if needed. Other appropriate sources of evaluative information include:

- parents/guardians;
- observation;
- work samples;
- interviews; and
- cumulative record review.

It may be appropriate and possible for school staff to complete some or all of the assessments, but if the district does not have a staff member qualified to assess a student's area of suspected disability, it should contract outside agencies or evaluators to ensure that team members have sufficient information.

If a student is found eligible for special education, the team will also develop an IEP for the student. Key elements of the IEP process are:

- use of information from the evaluation assessments in development of the IEP, so that the IEP addresses the individual needs of the student in relation to his or her disability;
- consideration of access to the general curriculum;
- consideration of how the disability affects the student's learning;
- development of goals and objectives that make the greatest difference for the student; and
- choice of a placement in the least restrictive environment that is able to deliver the services of the student's IEP.

For additional information on special education, how disabilities are defined in the law, eligibility determination, the IEP process, and guides for parents/guardians, refer to the Special Education section of the DOE website at http://www.doe.mass.edu/sped. Several documents contained there may be of particular assistance:

- *Is Special Education the Right Service?* (see http://www.doe.mass.edu/sped/2001/elig_drft01.pdf)
- *The IEP Process Guide* (see http://www.doe.mass.edu/sped/iep/proguide.pdf)
- *A Parent's Guide to Special Education* (see http://www.fcsn.org/parentguide/pgintro.html)

The Individual Health Care Plan (IHCP)

An individual health care plan (IHCP) is designed to ensure that the child receives the health services he or she needs during the school day (such as health assessments, treatments, or administration of medication). The IHCP should allow for the coordination of needed health care services and emergency planning for the student within the school setting. Like the IEP, an IHCP should be developed to support the child's participation in classroom activities and other school-related events such as sports and field trips. For a student who is eligible for special education, the IHCP should be developed in coordination with the IEP. The IHCP should also address any training needs for school staff, so that the plan is understood and implemented appropriately. To the extent possible, the plan should provide for the performance of health care procedures in a manner that minimizes disruption of the educational process both for the individual student and for other students present.

The IHCP is individualized to reflect the child's specific medical, nursing, and educational needs. (Exhibit 7-2 is a sample form that may be used to obtain accurate information for the school about an individual student's medical needs.) Review and revision of the IHCP may occur either separately or else as part of the review and revision of an IEP. If elements of the IHCP are incorporated in the IEP, however, a notation can be made in the IEP indicating that the IEP team may not need to reconvene for a change in medication dosage or frequency of a specific treatment, unless those changes substantially impact the student's health care and access to educational services.

The development of the Individual Health Care Plan is a collaborative process that should involve the child's family, the child (when appropriate), the school nurse, the school physician (when appropriate), other school staff, community health providers, and medical specialists, where indicated. Because the IHCP becomes the guide for meeting a student's health-related needs, the school nurse is responsible for coordinating and developing the IHCP. The school nurse serves as the link between child/family and other school personnel, as well as between school personnel and community health care providers in primary and tertiary care settings.

The IHCP must be developed in compliance with state, federal, and local health laws; state and federal education laws; state and federal confidentiality laws; and standards of practice for nursing and medicine. As with any communication, a child's right to privacy should be protected. See Massachusetts Student Records Regulations 603 CMR 23 at http://www.doe.mass.edu/lawsregs/603cmr23.html?section=all.

The IHCP Planning Process

The planning process begins prior to the entry into school or, for a student who is already in school, immediately upon the determination of need by the family, the school, and/or the health provider. The team should develop and document strategies for the care and monitoring of each student. Planning should also reflect long-range objectives and desirable outcomes for the child, including emotional, physical, cognitive, and social adaptations to a health condition. It should also include plans for teaching self-care as appropriate.

Assessment

Assessment is a systematic collection and analysis of information about the student's health; it is the function of physicians and registered nurses and can never be delegated to, or assumed by, other personnel. The essential data for assessment typically include physical findings/needs/adaptations, strengths, coping strategies, communication needs, social and emotional relationships, family issues, and what resources are available/needed.

A home visit is recommended for children with very complex health needs. This will help the school staff begin to establish a relationship with the family and child, observe the child in his or her natural environment, and determine how care needs have been met prior to school entry. A home visit provides an opportunity to plan for future school attendance, identify required school health services, support family goals for self-care and independence, assess family strengths and needs, establish rapport with individuals who provide a support system for the student, and evaluate the need for community health resources. Home visits should be documented in the student's health record.

If a home visit is determined to be unnecessary or is not possible, the school nurse should find an opportunity to meet with the parents/guardians and child, at which time the child's health status can be reviewed.

Another component of the health assessment is the review of the physician's or other licensed provider's orders for medical intervention and equipment; it is an opportunity to learn about technology, medications, and procedures used in the specific child's care. The review should include orders and plans from both the primary care provider and the specialty care providers, as appropriate (see Exhibit 7-2).

Family Participation

Parents/guardians should be actively engaged as planning partners. They see their child in diverse settings and thus best understand how different environments and activities affect the child's health and development.

Because family participation is of the utmost importance, convenience for parents/guardians (both time and location) should be a priority when meetings are planned. Information provided by the school about the child's health, school health activities, and resources should be introduced in terms that are understandable to parents/guardians. Parent/guardian participation in training is invaluable to professionals involved in their child's care, offering child-specific techniques and considerations.

When English is not the family's primary language, any required communication between the school and the family must be in the family's primary language. This includes providing appropriate translation services at all meetings and translating applicable written materials. When parents/guardians of a child are deaf or hearing-impaired, an interpreter must be provided. School personnel must always protect the confidentiality of the student and family.

Preparatory Planning Meeting

School personnel may find it useful to convene a preparatory planning meeting with parents/guardians to initiate discussion of the child's needs, map out the planning process, and identify key participants in the process. (This should occur prior to the formal planning meeting and school entry.)

Planning Meeting

The planning meeting is an opportunity for all the key participants, including the family, student (as appropriate), health care provider, school nurse, and other school personnel, to communicate, address important issues, and develop an individualized plan of care prior to school entry or reentry.

The meeting should identify the school nurse who will serve as the child's health care coordinator at school, as well as other internal and external contacts who should also be involved in the development of the child's health care plan. The meeting provides the opportunity to organize and seek training for any special care a child will require.

The identification of the responsible party for the payment of special services or caregivers may be an issue for the school, parents/guardians, providers, or insurers. Those responsible for the child's care should try to resolve financial details before the child enters school.

Training

Providing appropriate training to care for children with special health care needs is a major challenge for schools. Some elements of training are generic and reflect skills or knowledge necessary or desirable for children with a variety of special health care needs or diagnoses (e.g., the need for development of specific IHCPs or group training on such issues as seizure management). Other training needs address issues related to diseases and conditions with varying levels of severity in a variety of the body's organ systems. Because the school nurse, teachers,

other school personnel, and the child's peers need to understand the child's condition and its impact on performance, the school district has a responsibility to provide training for its staff regarding the specific health condition.

The IHCP also identifies areas in which training for a specific child's care is needed by those school personnel and/or others who may be involved in the care at school, or in transit to or from school: teachers and administrators, lunchroom personnel, bus drivers and monitors, coaches, and other school staff. Some school staff or transportation providers may require one-on-one training involving more specific procedures identified for care of a child. Community emergency medical service personnel may require training or briefing as well. The school nurse usually has the responsibility for organizing the training to meet a specific child's needs.

The child's parents/guardians and a school nurse (familiar with equipment and procedures involved in a child's care) may be the appropriate trainers. Other options, in collaboration with the school nurse, are the child's primary care provider, home nursing personnel, or outside consultants. DPH's MASSTART program provides collaborative consultation services to help schools and families develop health care plans for children with complex diagnoses and/or medical requirements that may call for in-school training. (See Resources at the end of this chapter for additional information.)

Completing an IHCP

An IHCP is designed to guide the planning process. The completed forms are documentation of the planning process. (Model forms are available to guide this process.)
When completed, the IHCP should be:

- signed by the school nurse writing the plan, the child's parents/guardians, and the primary care provider (for complex care); and
- maintained with the child's special-education plan or school health record.

Some or all of the following forms may be useful in the IHCP development process:

- ***Individualized Health Care Plan Checklist*** (Exhibit 7-3): This is an overview of areas in which care planning for the student may be necessary. Almost every child or adolescent with a special health concern will need special considerations by the school setting at some point. The set of special services potentially needed is quite broad and includes the following:
    - support therapies (physical, occupational, speech and language);
    - modified physical education;
    - schedule modifications;
    - transportation;
    - building accessibility;
    - toileting or lifting assistance;
    - school health services (including administration of medications, implementation of medical procedures, emergency preparations, and care coordination);
    - counseling services (for school, career, and personal issues); and
    - sensitivity training and support (for peers and school staff).
- ***Individualized Health Care Plan for the School Setting*** (Exhibit 7-4): This form contains pertinent information about the child, such as names of parents/guardians, addresses, and phone numbers; in addition, it provides a summary sheet for the dates of pertinent assessments, interviews, meetings, physician/licensed provider's orders, training, and review of the health care plan. More detailed information about these assessments is described on the Background Information form (see below).

- ***Important Personnel*** (Exhibit 7-5): This form is a list of key personnel responsible for the student's care. It includes: (a) both school and primary care providers, (b) those responsible for training and supervision of care, and (c) dates of training(s).
- ***Background Information*** (Exhibit 7-6): This form contains a brief medical history, home assessment summary, identified special health care needs, the child's baseline health status, required medications and diet, and transportation needs. The course of the student's condition prior to the school's involvement is an important part of the database. The medical history, self-care, family, and lifestyle factors provide a broad understanding of the student's current health status that will enable school personnel to recognize and/or predict patterns in a child's health status and evaluate changes over time.
- ***Procedure Information Sheet*** (Exhibit 7-7): This sheet contains directions for performing a special clinical procedure, including frequency, required equipment (storage and maintenance), child-specific information, and special considerations. Staff planning and coordination are required for implementing labor-intensive procedures to accommodate daily functions. This will ensure consistency and continuity of care by the school, home, and health care facility or provider.
- ***Possible Problems (Complications/Concerns)*** (Exhibit 7-8): This is a list of any problems that might occur relating to a specialized health care procedure and recommended actions to address them. (For example, in a gastrostomy tube feeding, the tube may become dislodged.)
- ***Nursing Notes*** (Exhibit 7-9): Consistent with standards of nursing practice, documentation should include such areas as health needs, goals, action/interventions, and evaluation. (See Chapter 6, "Nursing Practice in the School Setting" for further information.)
- ***Daily Log for Procedures*** (Exhibit 7-10): This log documents child-specific information as to the administration of the procedure, including date, time, notes, observations, and name of person responsible.
- ***Emergency Plan*** (Exhibit 7-11): This form is a list of potential child-specific emergencies and what to do, so that prompt, appropriate action can occur. (**Note:** The emergency care plan should never substitute for a comprehensive IHCP addressing all the student's relevant needs.) The team should design a document for each student's emergency procedures. In compliance with federal law regarding exchange of information, plans are to be shared with other school personnel, including ancillary staff such as lunchroom workers, custodians, and bus drivers. In addition, a simple set of instructions identifying individuals to notify in an emergency should be discussed carefully with the student's parents/guardians.
- ***Emergency Telephone Procedure*** (Exhibit 7-12): This form provides a detailed guideline for information that may be needed by the emergency medical team respondent; it identifies the school official to be notified and provides additional information as to procedures to be followed. (See Chapter 2 for emergency policies and protocols.)
- ***Emergency Information*** (Exhibit 7-13): This sheet lists telephone contacts for parents/guardians, key emergency providers, and local hospitals, should an emergency occur.
- ***Parent/Guardian Authorization for Specialized Health Care*** (Exhibit 7-14): On this form, parents/guardians must provide written permission for administering specialized health care to the student.
- ***Physician's Order for Specialized Health Care Procedure*** (Exhibit 7-15): This form is documentation of the licensed provider's order and special recommendations for administering a clinical procedure in the school setting.

TRANSITIONS

A student with special health care needs experiences a series of transitions during the educational process. These may include, but not be limited to, transition between: (a) early intervention and school, (b) school buildings within a school district, (c) school districts, (d) school and hospital, and (e) school and adulthood, which may include independent living or transfer to another state agency serving adults with disabilities. Each transition represents a challenge for the student, his/her family, and the responsible staff. Frequently the school nurse is the case manager guiding the planning, collaboration, and communication necessary to ease the transition; however, all team members from both the original site and the new site should be involved. The goal is to support the student during the change and ensure a seamless provision of services essential to his/her education, health, and well-being.

Transition from Early Intervention

Many children with special health care needs are served in early intervention (EI) programs prior to entering school. EI is a community-based system of developmental services for children up to age 3 who manifest, or are at risk of, developmental delay. In most of these cases, the EI program will assist in making a referral for a determination of special-education eligibility, since the EI programs are well aware of the special-education programs provided by public school districts. Federal and state government funds support the Commonwealth's EI system, and Massachusetts law (M.G.L. c.721) requires that third-party insurers reimburse for these services. If a child is then found eligible for special education, Part B of IDEA ensures that eligible students with disabilities aged 3–21 receive a free and appropriate education.

In Massachusetts, the eligibility criteria for EI are broad and include children who experience environmental as well as biological risks. Not all children who are eligible for EI in the state of Massachusetts will automatically be eligible for special education upon school entry. If a child moves from EI to school, it is the responsibility of both EI and school personnel to ensure a smooth transition at age 3. **Note:** Permission from parents/guardians is required to share information.

Since efforts to plan services for students require close collaboration between families and school personnel, a program will be most successful if it addresses the priorities of the family and capitalizes on its strengths and abilities. As the transition to school approaches, parents/guardians and staff from agencies involved with the child's care should share information about the child with one another and with the school in which the child will enroll. Communication will help to avoid duplication of assessments, evaluations, and resources and to effectively obtain any additional necessary information.

Parents/guardians should notify the school and the school nurse as early as possible when a child with special health care needs will be enrolling, especially one who needs medical care on an ongoing basis for his or her needs (e.g., diabetes, cancer, asthma). (This also applies to the child whose needs are short-term, for example, an infection requiring antibiotics.)

When the child's education and health needs are extensive, the EI staff may refer the child to the local school district for special-education evaluation. This should occur as soon as possible after a child reaches the age of 2½ and no later than 6 months in advance of enrollment. Early notification is critical for adequate education, health, and safety planning. Facilitating a comfortable and successful transition to the school setting requires:

- a timely referral process;
- timely transfer of updated medical and developmental evaluations with recommendations;
- a meeting between parents/guardians, the EI provider, and school personnel;

- communication between the early-childhood coordinator and/or the special-education director, teacher, school nurse, school physician, and therapists, for the purpose of sharing information needed for health care planning;
- opportunities for parents/guardians to visit the school setting;
- opportunity for parents/guardians to obtain information on the Massachusetts Special Education Law and Regulations; and
- provision of information to parents/guardians about peer support networks, such as parent advisory councils.

School personnel can promote timely notification about enrollment of children with special health care needs by building close ties with health care and EI providers in their communities and/or region. These providers can then offer school contact information to parents/guardians to begin the planning processes.

In addition to parents/guardians, other referral sources may include primary care providers in the community, hospital clinic staff, specialists, care coordinators from DPH (see http://www.mass.gov/dph/fch/care/index.htm for more information) or other state agencies, and home-care nursing providers. However, if a referral is made by anyone other than parents/guardians, family consent is required. The parents/guardians of a student with HIV, for example, are under no obligation to inform a new school of their child's health status. If they do choose to tell school personnel, parents/guardians alone, in consultation with the primary care provider, should decide which individuals they wish to inform about their child's health status (see Chapter 8).

Transitions Within the School System

Like all students, students with special health care needs will move from one school program to another, and from one school building to another, as they continue their educational program. The Individual Health Care Plan provides the blueprint for continuity of care in these situations. The transitions may require changes in the IHCP to accommodate the student in the new setting, as well as staff training to ensure safe care. The school nurse in the initial setting is responsible for sharing information with the nurse in the new setting. Transfer of school health records from school nurse to school nurse is critical.

Transitions Between School and Hospital

Occasionally, a student with a special health care need (who may or may not have an Individualized Education Plan) may be hospitalized due to a significant change in his/her health status. If a student must remain at home or in a hospital (with a medical documentation of need) for 14 school days in any school year, the local school district shall arrange for provision of educational services in the home or hospital to allow the student to continue his or her educational program. These services shall not be considered special education unless the student has been determined eligible for such services and the services are included in the student's IEP (603 CMR 28.03(3)(c)).

It is important that the school nurse and the family maintain open communication, so that changes in health needs are identified and changes to the IHCP are addressed prior to the student's returning to school. Some changes may require additional staff training for school personnel and the school nurse, which should be implemented prior to the student's return.

Transition to Adulthood

Transition services, a term used in IDEA, describes a coordinated set of activities that may address, among other issues, the assessment, planning process, and educational and community

experiences for students with disabilities as they turn 16 and prepare for transition to adult life. The intent of transition requirements in special-education law is to create opportunities for youth with disabilities that result in positive adult outcomes. Addressing these requirements may include:

- raising expectations for youth outcomes;
- engaging in specific programs or services available in the general education curriculum;
- assessing for interests, preferences, and needs;
- building self-awareness, self-identity, self-esteem, and self-determination skills;
- utilizing the community for supports;
- socializing and developing long-term relationships;
- participating in activities both at school and in the community; and
- engaging in and/or leading the transition planning process.

The IEP contains specific elements related to planning and goals for older students during the transition years (ages 16–21). Transition planning is integrated into the development of the IEP. The school district must have, and document, a discussion about the student's transition needs by the time the student is 15. This is to ensure that, if transition goals or objectives are appropriate, they are incorporated into the IEP by the time the student turns 16.

In Massachusetts, the IEP begins with a vision statement. For older students, this statement aids team members in looking toward the future as they determine the student's transition needs, goals, and services. As a student approaches graduation, the team must also consider the student's graduation status, the possibility of a referral for Chapter 688 services (services from adult human-service providers — see http://www.doemass.org/sped/688/), and the involvement of adult service agencies. As the student nears or reaches age 17, the team must discuss the transfer of special education and health care rights and responsibilities at the age of majority (age 18).

In preparation for independence, employment, and other post-school activities, the team is required to write IEPs that are responsive to students with disabilities. The commitment of students, parents/guardians, educators, adult agency staff, and community members is required to help students reach their visions and become active participants and contributors to society.

The school nurse has an important case-management role during the transition process. Responsibilities are especially challenging in cases where the student has complex needs, such as suctioning, gastrostomy tube feedings, medication administration, and monitoring. Often these service needs require additional staffing, coordination, and funding through the state agencies providing services to the adult population, to ensure that an appropriate and viable transition plan is identified and implemented.

SELECTED CHRONIC CONDITIONS

In the school setting, students with chronic health conditions require monitoring; appropriate and timely care to maintain health status and prevent emergencies; and timely intervention should an emergency occur. As discussed previously, the school nurse is the professional responsible for managing the care and for training other personnel, as appropriate to the individual student's needs. The goal is to provide necessary services and a safe environment, thereby permitting the student to attend school and participate in the educational process.

Within today's student population, a wide range of health conditions of varying severity are likely to be present. It is not possible, within a single chapter, to provide detailed information about more than a few. The specific conditions discussed below were selected because they are often seen in

the school setting. Research on health conditions is constantly being expanded and updated, so the information presented here should be regarded as only a starting point for education on these topics.

Asthma

Asthma is characterized by chronic inflammation of the airways that causes episodes of wheezing, coughing, and difficulty in breathing. Asthma is among the most common chronic diseases in the U.S. today, with an estimated 15 million cases nationwide. The disease often begins in childhood and is one of the leading causes of school absence, emergency room visits, and hospitalizations.

Historically, asthma care focused on treating acute episodes. The current approach emphasizes the prevention of episodes by reducing inflammation in the lungs through the use of daily medication. With long-term maintenance therapy, students should experience a reduction in the number and severity of asthma episodes, fewer absences from school, and fewer early dismissals from class, thus enabling them to participate fully in the classroom educational experience. Furthermore, when asthma is managed effectively, students should enjoy unrestricted participation in all school activities.

Massachusetts Initiatives: Massachusetts Asthma Action Plan

The Managed Care and Public Health Collaborative of New England has identified four key components essential for best practices in caring for pediatric asthma:

- regular assessment and monitoring, including severity classification;
- control of environmental factors and triggers that contribute to symptoms and disease severity;
- pharmacological therapy, including long-term inhaled anti-inflammatory medications; and
- educating the child, the family, and other caregivers on how to follow a written asthma management plan.

In 2001, the Massachusetts Health Quality Partners (MHQP) and representatives from 21 Massachusetts health care organizations joined together to endorse an initiative to promote a key component of best practices in the management of pediatric asthma: the use of written asthma management plans. This initiative included the development and distribution of the Massachusetts Asthma Action Plan (MAAP).

The child's physician or health care provider completes and returns the MAAP to the school nurse. The school nurse facilitates the implementation of the MAAP and works with parents/guardians and health care providers to promote its use as a key tool in the management of asthma.

The three-part multicolored MAAP forms are available free of charge through the Massachusetts Health Promotion Clearinghouse (http://www.maclearinghouse.com/CatalogPageFrameSet.htm). Plans are available in English, Spanish, Portuguese, Haitian Creole, Chinese, Vietnamese, Khmer, and Russian and may be viewed and/or ordered online, or ordered by calling the consumer information line at 800-952-6637. School nurses are encouraged to request that parents/guardians give the MAAP to the child's primary care provider (PCP) for completion. Many school nurses give the MAAP forms to parents/guardians at the end of each school year so that a completed form will be available when the new school year begins. In addition, with consent from parents/guardians, school nurses are encouraged to provide regular feedback to the PCP regarding the child's response to the medical regimen. An example would be sharing peak flow readings with the PCP.

Research has shown that asthma programs using written asthma action plans have resulted in significant reductions in patient morbidity and service utilization, such as emergency room visits

and hospitalization. In schools, written asthma action plans will enhance communication among the school, parents/guardians, student, and physician, as well as improve the overall outcome in the management of asthma. Additionally, students learn to self-manage their asthma. The MAAP should be considered an essential part of the IHCP for all students who receive management of or treatment for asthma in the school setting.

A brief assessment tool from the National Asthma Education and Prevention Program and the National Association of School Nurses offers guidance to school nurses in determining how well an asthma action plan is working for a student. This tool is available online at: http://www.nhlbi.nih.gov/health/prof/lung/asthma/asth_act_plan_frm.pdf.

Management of Asthma in the School Setting

Effective management of asthma requires a partnership among the student; parents/guardians; the primary care provider; specialist; and school staff including the administrator, school nurse and school physician, bus driver, teachers, coach, and guidance counselor. The school plays an important role in helping students by providing support and implementing an individualized asthma management program. The nurse assesses the student with asthma and collaborates with other team members to develop an IHCP that includes, but is not limited to:

- a current MAAP with peak flow monitoring (or specific written parameters for medication dosage when the asthma becomes symptomatic);
- a list of medications and a plan for taking them, especially noting which ones need to be taken during school hours;

  Note: In 2002, language was added to the Regulations Governing Administration of Prescription Medications in Public and Private Schools stating that no school district may prohibit students with asthma or respiratory diseases from possessing and administering prescription inhalers in accordance with DPH regulations on self-administration of prescription medications (105 CMR 210.006). See Chapter 6 for further discussion of medication administration and self-administration.
- plans for daily management, including how to avoid or control known triggers;
- early signs of an asthma episode, which, when noted by the student, should always be taken seriously (may include cough, changes in breathing, itchy chin or neck, or clipped speech);
- a specific plan of action for school personnel in case of early warning signs or an acute episode, which may include immediate notification of the school nurse (a student exhibiting early signs of an asthma episode should be accompanied by an adult to the nurse's office);
- a clearly defined emergency plan — a student's IHCP should be consulted at the first sign of an acute episode of asthma; and
- specific plans for staff members to educate, counsel, and support the student in self-management of asthma.

In addition, many school nurses offer instruction on asthma management for students and families. Some also offer asthma support groups.

Diabetes

The majority of school-age youth with diabetes have Type 1 diabetes. Individuals with Type 1 diabetes do not produce insulin and must receive insulin through injections, an insulin pump, or other delivery device. Type 1 diabetes, previously known by the terms insulin dependent diabetes (IDDM) or juvenile-onset diabetes, is the most common endocrine disorder of youth and affects about 1 in 800 children. It is not contagious, and it is not caused by eating too much sugar. It is never treated by diet alone or with oral medications (unlike Type 2 diabetes). Children living with Type 1 diabetes require care during school hours.

Type 2 diabetes, formerly known as noninsulin-dependent diabetes or adult-onset diabetes, typically affects adults but is increasing in youth. Students with Type 2 diabetes may be able to control their disease with diet and exercise alone, or they may require oral medications or insulin injections. Children with Type 2 diabetes, especially those using insulin, also have to manage their diabetes during school hours.

Management of Diabetes in the School Setting

Aggressive management of Type 1 diabetes involves frequent blood glucose monitoring and sometimes 4 or 5 insulin injections each day. Lowering the average blood glucose has been scientifically proven to delay or postpone the devastating long-term complications of diabetes (blindness, kidney failure, and nerve damage). Part of the child's diabetes treatment plan may routinely occur during school hours. Management of a student's diabetes should be incorporated into a student's IHCP. Information that should be in the IHCP includes:

- the definition of hyperglycemia for that particular student, and the recommended treatment;
- frequency of blood glucose testing;
- written orders from the student's physician outlining the dosage and indications for insulin administration and/or glucagon administration, if needed;
- times of meals and snacks, and indications for additional snacks for exercise;
- full participation in exercise and sports, any contraindications to exercise, or accommodations that must be made for that particular student;
- accommodations for school trips, after-school activities, class parties, etc.;
- education of all school personnel who may come in contact with the student about diabetes, on how to recognize hypoglycemia and hyperglycemia, and when to call for assistance;
- medical and/or treatment issues that may affect the educational progress of the student with diabetes; and
- how to maintain communications with the student, the parents/guardians, the child's health care team, the school nurse, and the educational staff. (Brown & Kent, 2000)

Insulin

Insulin dosage is determined by body size, activity level, state of health, dietary intake, and duration of diabetes, rather than severity of diabetes. Nowadays, insulin is usually administered in multiple daily injections, through an infusion pump or infusion pen, but new technologies are developing rapidly. Student responsibility for insulin injections should commence when his/her emotional maturity indicates this is an appropriate goal, and it is agreed upon by the school nurse, parents/guardians, the child, and health care professionals. The school nurse is responsible for insulin administration and/or supervision (if the student is self-administering), as specified in the IHCP and consistent with the Regulations Governing the Administration of Prescription Medications in Public and Private Schools (105 CMR 210.000). (See Chapter 6.)

Note: In 2005, M.G.L. c.71, s.54B was amended to add the following statement: *"Notwithstanding any general or special law or regulation to the contrary, no school district shall prohibit students with diabetes from possessing and administering glucose monitoring tests and insulin delivery systems, in accordance with department of public health regulations concerning students' self-administration of prescription medications."* Schools must follow the self-administration regulations (105 CMR 210.006) in this special situation.

Glucose Monitoring

Monitoring of diabetes (staff should avoid using the word "testing" just as they should try to avoid "diabetic" and "dieting," because of their subtle negative connotations) has changed in recent years so that more and more youth are checking their own "finger-stick" blood glucose levels. The student's health care provider should recommend a target range for blood glucose levels. All blood glucose levels that are monitored in school should be recorded, sent home to be assessed by

parents/guardians, and shared with the health care provider. As indicated in the student's IHCP, parents/guardians should be notified immediately of extremely high or low glucose levels. Some teachers have creatively used examples of these numbers to explore averages, ranges, and graphing.

Note: The amendment to M.G.L. c.71, s.54B mentioned above applies to possession and administration of glucose monitoring tests by students, as well as insulin delivery systems. *In this situation, schools must also follow the self-administration regulations (105 CMR 210.006).*

Hypoglycemia

Hypoglycemia occurs when the blood glucose level is too low for the body to function properly. It is caused by excess insulin in the system or too little food, often brought about by unplanned excess activity. The best way to document that a hypoglycemic reaction (also called an insulin reaction) is taking place is to observe symptoms and obtain a blood glucose level at that moment. Obtaining actual blood glucose levels is necessary for appropriate treatment decisions. Students who have been assessed by the school nurse to self-monitor (105 CMR 210.000) may monitor their glucose levels, observing universal precautions, with immediate notification of the results to the school nurse. Treatment decisions are made based on the IHCP.

Mild hypoglycemia can cause very subtle symptoms, which school staff should learn to recognize: inattentiveness, mood or behavioral changes, speech pattern change, poor penmanship, or lower-than-expected achievement on an exam. Tremulousness, pallor, sweating, headache, or stomach pains can be caused by low blood glucose. *Moderate hypoglycemia* is similar, but the symptoms are of slightly greater intensity or duration.

Generally, the response to mild or moderate hypoglycemia consists of one of the following (or comparable substitutes): 3 or 4 glucose tablets, or 4 to 6 ounces of juice or regular soda (no extra sugar needed), or 7 Life Savers (any flavor). Fifteen minutes after treatment, blood glucose should be checked again. If the blood glucose level remains low when rechecked, repeat one of the above treatments. Most (90%) of the time, however, a single treatment will correct hypoglycemia. The child should remain quiet while waiting for blood glucose to return to normal. The licensed provider should give instructions as to the appropriate treatment of hypoglycemia for the individual child. *A student suspected of having hypoglycemia should not be permitted to go to the nurse alone.* *Severe hypoglycemia* produces the same symptoms as described above, plus either loss of consciousness or convulsions. Treatment of a rare daytime episode of severe hypoglycemia may require an injection of glucagon by the school nurse (or intravenous glucose if paramedics are present). (**Please note:** Under 105 CMR 210.000, the administration of injectable medications (other than epinephrine by auto-injector to a child experiencing a life-threatening allergic event) may not be delegated to unlicensed personnel.) It is recommended that children who may require emergency glucagon injections attend a school with a full-time school nurse. The child's health care provider orders the treatment specific to the individual child. Plans for contacting the physician, parents/guardians, or medics should be in place (as part of the IHCP) for such rare emergencies. Usually, severe hypoglycemia does not occur unless several factors converge and contribute to the reaction simultaneously (e.g., delayed meals or snacks with extra activity, major emotional trauma).

Because modern diabetes treatment does not preclude occasional episodes of hypoglycemia, teachers should be encouraged to learn about it so that it can be recognized and prevented, or at least easily treated in its early stages.

Ketoacidosis
Diabetic ketoacidosis (DKA) is the seriously elevated blood glucose levels associated with dehydration and coma and is very unlikely to occur during school hours. Unlike hypoglycemia, it does not develop quickly or unexpectedly and is most often associated with an intercurrent infectious disease such as a viral illness. Most children with diabetes need to stay home when they are ill to ensure they receive extra monitoring, extra salty fluids, and extra insulin. Recurrent DKA is often the result of omitted insulin injections or other physical/psychological stresses (AADE Position Statement, 1994). The child with diabetes who is ill or vomiting may need adjustments in insulin and diet. Parents/guardians should always be notified of these problems as soon as they occur.

Food
Meal plans are a key component of diabetes treatment and should take into account food preferences, insulin levels, and activity needs. A diabetes meal plan should provide a consistent source of food without large amounts of concentrated sugars. A food plan is a “diet” only when obesity coexists with diabetes. Adjustments for activity changes are also required, and snacking needs should be based on blood glucose results, with advice from the diabetes treatment team. Whether or not eating school lunches is permitted depends on treatment goals, fat content of meals, and nutritional consistency from day to day. School departments should provide fresh, tasty, and inexpensive meal options for everyone, including those with diabetes (see Chapter 9).

Special events or holidays do not always have to be celebrated with sugary foods or snacks. Adult event planners at school should consult with the health care team and provide adequate notice to parents/guardians so that students with diabetes are able to participate with only minimal changes to what is served. Responsibility for counting carbohydrates should be a collaborative effort among parents/guardians, the student (as appropriate), food service staff, and school nurses.

School Participation
Children with diabetes can be full participants in both curricular and extracurricular school life, including field trips. Knowledgeable and supportive school staff can assist in the treatment of diabetes so that there is minimal interference with learning objectives. Age-appropriate behavior, participation, and educational goals typically do not demand extraordinary adaptations due to diabetes. In cooperation with the family and nursing and medical staff, schools should encourage students with diabetes to reach their full potential.

School attendance should be monitored by parents/guardians, school nurses, and teachers. Because excessive absences may reflect poor glucose control, they should be documented and brought to the attention of the health care professionals involved with the diabetes treatment program.

Physical Education and Recess
School exercise may appear to be a source of concern because students with diabetes who are taking insulin cannot automatically counterbalance changing physical demands without prior planning. Ideal scheduling would provide for physical education periods at the same time each day so that food or insulin adjustments can be made appropriately. Whether and when extra food should be provided should be discussed with the health care provider. The worst time for physical education is the hour just prior to lunch, when most of the morning meal has begun to “wear off” and the likelihood of insulin-induced hypoglycemia is at its peak.

Psychosocial Issues
With a diagnosis of diabetes, psychosocial sensitivities may emerge. When school nurses, administrators, and teachers receive and act on current information about diabetes, they can make

school a safe place for students with diabetes. Words are important; the preferred term is “a child with diabetes,” not “a diabetic child.” If school staff creatively use the process of diabetes management as a resource for education, they encourage increased self-esteem for these students. Science or math lessons that reflect day-to-day issues about diabetes, nutrition, and data collection make learning fun and pertinent. Books that include diabetes as part of the subject matter are useful. Among those recommended by the Juvenile Diabetes Research Foundation, New England Chapter, is Kim Gosselin’s *Taking Diabetes to School,* designed to help educate classmates aged 6–11. See the Resources section at the end of this chapter and the Juvenile Diabetes Research Foundation website for additional children’s books about diabetes.

Many resources are available on the management of children with diabetes in the school setting (see the Resources section at the end of this chapter). *Helping the Student with Diabetes Succeed: A Guide for School Personnel,* published by a Joint Program of the National Institutes of Health and the Centers for Disease Control and Prevention (2003), is especially useful and may be obtained at the National Diabetes Education Program website at http://www.ndep.nih.gov.

Please note: While the federal guidelines address medication administration, each state may have different regulations in this area. The Regulations Governing the Administration of Prescription Medication in Public and Private Schools (105 CMR 210.000) apply in Massachusetts (see Chapter 6).

Life-Threatening Allergies (LTAs)

Food allergies affect 11 million Americans, including 6% to 8% of children. The rate of peanut allergies in children has doubled from 1997 to 2002. In caring for children with LTAs, schools face the dual challenges of providing a safe environment and an appropriate emergency response should an anaphylactic reaction occur.

Eight foods are the most common food allergens and cause more than 90% of all food allergic reactions: milk, eggs, peanuts, tree nuts (such as walnuts and almonds), soy, wheat, fish, and shellfish. Peanuts and tree nuts alone account for 92% of severe and fatal reactions. Among children, allergies to milk and eggs are most common. In addition, many individuals are allergic to multiple foods. Children with severe food allergies also have a higher rate of other allergic disease, including asthma and eczema, which can complicate recognition of anaphylaxis and place students at higher risk. Fatal anaphylaxis is more common in children with food allergies who have asthma, even if the asthma is mild and well controlled. Life-threatening allergic reactions may also be triggered by insect stings, medications, latex rubber, cold, stress, and exercise.

Anaphylaxis

Anaphylaxis is a potentially life-threatening medical condition occurring in allergic individuals after exposure to their specific allergens. Anaphylaxis refers to a collection of symptoms affecting multiple systems in the body. The *most dangerous symptoms* include respiratory involvement, reduction in blood pressure, and/or shock, which are potentially fatal. Other symptoms are:

- hives;
- difficulty swallowing;
- vomiting;
- wheezing;
- itching (of any body part);
- difficulty breathing, shortness of breath;
- swelling (of any body part);
- sense of doom;
- stomach cramps;

- itchy lips, tongue, mouth, and/or throat;
- red, watery eyes;
- fainting or loss of consciousness;
- change of voice;
- dizziness, change in mental status;
- runny nose;
- flushed, pale skin;
- coughing; and
- cyanotic (bluish) lips and mouth area.

Management Guidance

In 2001, the Asthma and Allergy Foundation of America, New England Chapter (AAF/NE), the Massachusetts Department of Education (DOE), DPH, the Massachusetts School Nurse Organization (MSNO), parents/guardians, and other professional organizations collaborated to develop a manual that gives clear advice to schools about the care of students with food allergies. The document, *Managing Life Threatening Food Allergies in Schools,* identifies the school's role and responsibilities, provides guidance on development of an IHCP, and includes specific information from DPH regarding training and delegation. This manual should be available in all schools, but it also can be downloaded from the DOE website at http://www.doe.mass.edu/cnp/2002/news/allergy.pdf.

Strong emphasis is given to the need for planning and development of an IHCP prior to the student's entry into school. Consistent with the interdisciplinary model, a team meeting that includes parents/guardians should occur as soon as possible after the school learns of the planned enrollment of a child with any type of life threatening allergy. Because the school nurse is a critical to both planning and emergency response, the guidelines recommend that *every school building with a student at risk for anaphylaxis from a food allergy should have a full-time school nurse.*

The guidelines also:

- emphasize the role of the school nurse as developer, facilitator, educator, and supporter of the school-based program;
- stress the need for comprehensive school policies;
- establish the school administrator's role and commitment as critical to policy implementation and enforcement; and
- define the responsibilities of all involved personnel, including food service staff.

For students with LTAs, the most important aspect of management in the school setting should be prevention. All school personnel should be educated on LTAs and how to prevent exposure. As vital partners in prevention, food service staff are essential to school planning and implementation efforts.

Preparing for and Handling Emergencies

The school must also be prepared for emergency response to a life-threatening allergic event. For an anaphylactic reaction, epinephrine is the treatment of choice and should be given immediately. (See position statement of the American Academy of Asthma, Allergy and Immunology at http://www.aaaai.org/media/resources/academy_statements/advocacy_statements/ps26.asp.)

Prescription medicine regulations 105 CMR 210.000 permit school nurses (in schools registered with DPH) to train unlicensed personnel to administer epinephrine, during a life-threatening event, by auto-injector to an individual previously diagnosed with a known allergy. DPH encourages all school districts and nonpublic schools to register for this purpose (see Chapter 6 for information on

registration). DPH also encourages school nurses to obtain a signed protocol from the school physician to permit the former to administer epinephrine to previously undiagnosed individuals experiencing their first anaphylactic reaction in the school setting. The school nurse should maintain a supply of epinephrine for this purpose.

Because of the danger of biphasic reactions, any individual receiving epinephrine should be transported by trained emergency medical service personnel to the closest emergency medical facility.

As part of its continuous quality assurance program, DPH requires that a form (available at http://www.mass.gov/dph/fch/schoolhealth/medadmin.htm) be completed and sent to DPH each time epinephrine is administered in the Commonwealth's schools. In addition, DPH prepares periodic health briefs on Epi-Pen administration in the schools, available on the school health service website.

Seizure Disorders

A seizure is a temporary electrical disturbance in the brain causing involuntary movements or paralysis, sensations, change in consciousness, or combinations of these. Many conditions can mimic seizure, including fainting, migraine headache, tics, reflux, and pseudoseizures. Although pseudoseizures can look and feel like epileptic seizures, these episodes are not caused by electrical disruptions in the brain, and they are classified into two major groups: *physiologic* and *psychogenic.* Physiologic seizures may result from a variety of causes, including changes in heart rhythm (cardiac arrhythmia), sudden drops in blood pressure (syncopal episodes), or very low blood glucose (hypoglycemia). Other physical conditions, such as sleep disorders and movement disorders, may produce symptoms that can look like seizures. Psychogenic seizures are thought to be caused by stressful psychological experiences or emotional trauma.

Seizures that recur without a known treatable cause are called epilepsy. The Epilepsy Foundation of America estimates that 315,000 U.S. schoolchildren age 14 and under currently have epilepsy. Children in certain populations are at higher risk for developing epilepsy, including those with mental retardation or cerebral palsy, those who have experienced febrile seizures in infancy or very early childhood, and those whose parents have epilepsy. Not all of those who have a single, unprovoked seizure will develop epilepsy. An estimated 120,000 children under 18 have a first convulsion each year, and current research indicates that only one-third are likely to develop epilepsy.

Seizures are often controllable with medication; 70% of people with epilepsy can be expected to enter remission (defined as 5 or more years seizure-free on medication). Certain forms of epilepsy specific to childhood may even resolve completely without medication as a child matures (see descriptions of syndromes below). But in 10% of cases, seizures cannot be brought under control, even with optimal medical management.

Epilepsy is a broad classification encompassing seizures of many different types, depending on which part and how much of the brain is affected by the electrical disturbance. People may experience more than one type.

In ***partial seizures,*** the electrical disturbance is limited to a specific area of one cerebral hemisphere. Partial seizures are subdivided into simple partial seizures (in which consciousness is retained), and complex partial seizures (in which consciousness is impaired or lost). Partial seizures are the most common type of seizure experienced by people with epilepsy. Virtually any movement, sensory, or emotional symptom can occur as part of a partial seizure, including complex visual or auditory hallucinations.

Generalized seizures affect both cerebral hemispheres and may produce loss of consciousness, either briefly or for a longer period of time, and are subcategorized into several major types:

- **Generalized tonic-clonic seizures,** also known as grand mal seizures, involve all or most of the brain and are characterized by stiffening and jerking movements involving muscles on both sides of the body.
- **Myoclonic seizures,** characterized by a brief muscle jerk resulting from an abnormal discharge of brain electrical activity, usually involve muscles on both sides of the body, most often the shoulders or upper arms.
- **Absence seizures** are characterized by a 5-to-15-second lapse of consciousness, during which the eyes may flutter, stare, or move upward.
- **Atonic seizures** are characterized by sudden loss of muscle tone, which may cause falls and potential injury but are not usually associated with loss of consciousness.

Epilepsy is also evaluated and discussed in terms of syndromes, which takes a number of characteristics into account, including the type of seizure, typical EEG recordings, clinical features such as behavior during the seizure, the expected course of the disorder, precipitating features, expected response to treatment, and genetic factors. Syndromes likely to be seen in epilepsy that occurs during childhood include:

- **Benign Rolandic Epilepsy,** also known as benign partial epilepsy of childhood, accounts for more than one-third of all cases of epilepsy that begin in middle childhood and is thought to be genetically determined. Most children outgrow it within 5 years or by age 14–15. Most seizures occur during sleep. Seizures start as simple partial, usually beginning in the face. There may be drooling and temporary inability to speak, although consciousness is preserved. The seizures then generalize to tonic-clonic convulsions.

- **Childhood Absence Epilepsy** accounts for 2% to 4% of all cases of epilepsy in children and is inherited. Seizures are nonconvulsive staring spells and tend to occur in clusters. Children with this syndrome are otherwise normal; as a group, their IQ scores are 10 points above average. Forty percent outgrow the seizures. Remission is most likely when the child is young at onset, the seizures are easily controlled with medication, and there are no other neurological problems. Approximately half of children with this condition go on to have a generalized tonic-clonic seizure. Risk is reduced if seizures are quickly controlled with medication.

- **Frontal Lobe Epilepsy** produces brief, often dramatic, seizures that may occur in clusters. Partial seizures beginning in the frontal lobe may produce weakness or inability to use certain muscles, including those that make it possible to talk. Sudden thrashing movements during sleep are also characteristic, as is posturing with the head jerking to one side, and the arm rising with it into a brief, frozen state. Sometimes a generalized convulsion follows. Frontal lobe epilepsy has significant social effects because the seizures it generates are more likely to involve brief episodes of screaming, bicycling movements, or even movements suggestive of sexual activity.

- **Juvenile Myoclonic Epilepsy** (also called Janz's syndrome, impulsive petit mal, myoclonic epilepsy of adolescence, and jerk epilepsy) is characterized by sudden jerks of arms and legs, especially on awakening. Juvenile myoclonic epilepsy generally appears at puberty and is usually not outgrown. It is also associated with generalized tonic-clonic seizures. Seizures may be precipitated by sleep deprivation, early awakening, alcohol and drug use, stress, strong emotion, photic stimulation, and menstruation.

- **Landau-Kleffner syndrome** causes children to have trouble understanding spoken language and sometimes to lose the ability to speak. It usually manifests between the ages of 3 and 7. Children with this syndrome may seem not to hear or understand what is said to them. Language for many of these children will improve slowly over time but may not return to a normal level for age. Many, but not all, children will also have seizures. Seizures may vary in type, occur during sleep, and be quite infrequent. Even in the absence of seizures, EEGs show epilepsy-related abnormalities.

- **Lennox-Gastaut syndrome** (also known as myoclonic-astatic epilepsy) typically involves more than one type of seizure. Combinations of seizures include atypical absence seizures (starting with automatic behavior without conscious control), tonic seizures (stiffening), and atonic or astatic seizures (drop attacks). Onset is usually between 1 and 5 years of age, and the condition usually results in some degree of mental retardation by age 6. Skills are lost, sometimes dramatically, in association with uncontrolled seizures. Many children with this syndrome wear protective helmets to prevent injuries caused by repeated falls during seizures. Some are prone to develop *nonconvulsive status epilepticus* (a continuous seizure state that is associated with a change in the child's level of awareness), which requires medical intervention to bring it to an end. As children with Lennox-Gastaut syndrome grow older, the types of seizures change. Drop seizures abate and are replaced by partial, complex partial, and secondarily generalized convulsions. Among teenagers with Lennox-Gastaut, complex partial seizures are the most common form. This seizure syndrome is difficult to treat and often does not respond to the usual medications.

- **Progressive Myoclonic Epilepsy** is a rare form of epilepsy with myoclonic and tonic-clonic seizures. Children with this condition may have trouble maintaining balance and may experience rigid muscles. There is also a loss of mental ability. A gene for this disorder has recently been discovered.

- **Rasmussen's syndrome** (also known as Rasmussen's encephalitis) begins in childhood and produces a slow deterioration of one whole hemisphere of the brain, with loss of function on the opposite side of the body. An autoimmune response to a viral infection has been suggested as a possible cause. Various types of treatment have been attempted, including surgical removal of the affected side of the brain. In children, the remaining hemisphere may compensate for functions lost, but weakness on the affected side will remain. The condition typically starts with seizures, with weakness appearing later. Simple partial seizures affecting movement are the most common form.

- **Reflex Epilepsy** is the name given to seizures triggered by individual sensitivity to sensory stimulation in the environment. The most common form is photosensitive epilepsy — seizures caused by exposure to intense or fluctuating levels of light. Some people have seizures triggered by flashing lights or rapidly alternating light and dark patterns. The condition usually begins in childhood and may be outgrown by adulthood. A flickering fluorescent light, the flicker of sunlight while driving past standing trees, certain video games, or flashing strobe lights can trigger seizures in photosensitive people. The reflex response may be absence (staring) seizures, myoclonic (jerking) seizures, or generalized convulsions. Wearing polarized sunglasses with blue lenses has been cited as good protection against photosensitive reflex seizures. While flashing or flickering light is the most common trigger for reflex epilepsy, rare triggers include certain sounds, music, tone of voice, reading, immersion in hot water, and even eating.

- **Temporal Lobe Epilepsy** is one of the most common forms of epilepsy. Its site is the temporal lobes, located on the sides of the head just above the ears. Complex partial

seizures with automatisms (unconscious actions) such as lip smacking or rubbing the hands together are the most common seizures in temporal lobe epilepsy. Seventy-five percent of patients also experience simple partial seizures, which may include such features as a mixture of thoughts, emotions, and feelings that are hard to describe; sudden emergence of old memories or feelings of strangeness in familiar surroundings; hallucinations of voices, music, smells, or tastes; and feelings of unusual fear or joy. While partial seizures dominate, approximately half of people with temporal lobe epilepsy have generalized tonic-clonic seizures as well. Memory problems may develop over time in people with this syndrome.

Note: The Epilepsy Foundation was the source for much of the information presented in this section. See http://www.epilepsyfoundation.org for more information about the foundation's work.

Treatments and School Responsibility

The goal of epilepsy treatment is to eliminate seizures or at least make the symptoms less frequent and less severe. Long-term anticonvulsant drug therapy is the most common form of treatment, although surgery and other treatment methods are sometimes indicated, if medications do not bring seizures under control.

Partial seizures are both the most common type of seizures and often the most difficult to control with medication. Several drugs are available to treat partial seizures, and they may be prescribed singly or in combination. For the best possible seizure control, medication must be taken every day on time as prescribed, thus necessitating the availability of professional school nurses. Stopping the medicine suddenly for any reason may cause serious rebound seizures and result in status epilepticus, a condition in which a person suffers from continuous seizures and may have trouble breathing.

The school nurse, as case manager and student advocate, is responsible for working with parents/guardians and primary medical providers to create an IHCP and an emergency response plan for students with epilepsy. The school nurse also has responsibility for supervising the administration and monitoring of medications during school hours, ensuring that students are able to participate safely in activities such as field trips and school sports. S/he is also responsible for educating classroom teachers about the child's specific condition and type of seizures so they can make appropriate observations and respond effectively in the event of a seizure. (See also Chapter 6 for discussion of Regulations Governing the Administration of Prescription Medications in Public and Private Schools.)

Teachers are in the best position to observe a child for possible seizures or adverse effects of medication. If the teacher notices any unusual behavior, such as staring, lip smacking, repetitive hand movements, or involuntary movements, the school nurse should be told and the parents/guardians and the doctor informed. These behaviors may represent seizures. In addition, certain problems such as tremor, lethargy, nausea, or double vision may indicate a need to adjust dosages of medications.

Sometimes seizures continue even though medication is being taken exactly as prescribed. Some degree of seizure persistence is estimated to occur in 25% of the diagnosed population. Studies have shown that rectal diazepam gel is a safe and effective treatment for acute, repetitive, or prolonged seizures, which require immediate treatment. The National Association of School Nurses, in a position statement adopted in November 2003, concluded that administration of rectal gel or rectal suppository medication for control of seizures in students at school and during school-related activities is the function of the school nurse. Ongoing nursing assessment is needed, and there is potential for adverse reactions such as respiratory distress. This is consistent with the

Massachusetts Regulations Governing the Administration of Prescription Medications in Public and Private Schools, which prohibit the delegation of medication administration to unlicensed personnel. Other medications and routes of administration that will increase options for treatment of acute, repetitive, or prolonged seizures are currently under study.

One treatment for intractable partial seizures is electrical stimulation of the brain via the vagus nerve. The U.S. Food and Drug Administration (FDA) has approved the use of vagus nerve stimulation (VNS) in patients over the age of 12. This procedure uses a pacemaker-like device implanted in the chest wall to provide intermittent stimulation to the vagus nerve, which affects swallowing, speech, breathing, and many other functions. VNS may prevent or shorten some seizures. A 2003 report said that this treatment has reduced partial seizures by 50% or more in about one-third of patients, with no adverse effects. In Massachusetts, VNS management currently may not be delegated to unlicensed personnel (2005).

A special high-fat, low-carbohydrate, low-protein diet (the ketogenic diet) is also sometimes used to control seizures that are difficult to control with medications. Managing this diet in the school setting requires active involvement of the school dietician and the school nurse. Foods must be eaten in correct combinations and be very strictly weighed and measured. Even a small mistake in portions can interfere with effectiveness and precipitate a seizure. In addition, the diet can have significant side effects, and its use requires careful monitoring.

Children whose seizures are not well controlled often experience social, emotional, and academic problems. IHCPs should reflect interventions to improve seizure control, support the child in the school setting, and, to the degree possible, prevent these issues.

Children with “Do Not Resuscitate” or “Comfort Care” Orders

Children with terminal illnesses are attending school in increasing numbers. As the status of a child’s health declines, a family may make the difficult decision not to prolong the child’s life and request a Do Not Resuscitate (DNR) order. A DNR order is executed by a physician, authorized nurse practitioner, or authorized physician assistant, with the consent of parents/guardians, and issued according to the current standard of care.

If a child has a DNR order, he or she should also have a Comfort Care/DNR Order Verification form for emergency response and ambulance transport use. As of January 22, 2007, this form may be downloaded from the Department of Public Health’s Office of Emergency Medical Services website, at http://www.mass.gov/dph/oems. It must be printed out, completed in full, and signed by an authorized physician or authorized nurse practitioner, in accordance with instructions on the form. A Comfort Care/DNR form (either the original or a copy) is the **only** authorized way for prehospital emergency care providers, such as emergency medical technicians (EMTs, first responders), to recognize a patient with a current, valid DNR order. EMTs and first responders called to a school will honor a DNR only if the child has a Comfort Care/DNR form. Without this form, EMTs and other first responders who are called to a school will provide emergency treatment, including resuscitation, in accordance with standard EMS protocols, and transport to a hospital. The following website provides further information: http://www.mass.gov/dph/oems.

School districts should prepare a policy on the care of the child with a DNR order. Special consideration must be given to meeting child and family needs, as well as the needs of other students and staff. The child should only attend a school that has a full-time school nurse. Local emergency medical services should be informed (with written permission from parents/guardians) that there is a child in the school with a DNR/CC order.

Respecting the family's wishes involves much preplanning in the school setting. An individualized care plan should be developed with the family, in collaboration with the child's physician and the school physician. It should include:

- how the child will be moved to the health room or other designated area if serious distress or death should occur at another location in the school;
- what, if any, comfort measures should be given to the child;
- protocols for notification of the family;
- if the child has died in school, who will do the pronouncement of death (physician, nurse practitioner, or physician assistant); and
- how the deceased will be removed from the school. This may involve planning with the family's designated funeral home and include such factors as type of vehicle, where it will park, who will clear the corridors, and what kind of stretcher or other method of transport will be used. (**Please note:** By law, EMS providers are not permitted to move the deceased.)

The plan should address what will happen if the child is in distress but does not appear to face imminent death. The response should include immediate consultation with parents/guardians and, consistent with the plan, contact with the local EMS provider. If EMS is called, and the child has a Comfort Care/DNR form, the EMT or first responder can provide comfort care measures and transport to a hospital. The type of care that EMS is able to provide in this situation is spelled out in the Comfort Care Protocol in the above-referenced website.

When assigning responsibility for pronouncement of death, keep in mind that nurse practitioner (NP) and physician assistant (PA) pronouncements function as "removal permits" that allow the deceased to be removed from the school grounds by a funeral director. However, the NP or PA who pronounces the death must try, before the pronouncement, to reach the attending doctor so that the doctor can declare the death and complete the death certificate. If the attending doctor cannot be reached before pronouncement, notification must be given as quickly as possible of the event and the location to which the child's body has been removed so that the doctor can complete the death certificate. State law (M.G.L. c.46, s.9) requires that a physician or medical examiner complete the death certificate.

When a plan is in place, the school nurse, in collaboration with the family, should convey the plan to the appropriate school staff and administrators, answering any questions that they may have.

Whenever a death occurs in the school, a crisis team must be activated immediately to assist the family, staff, and students in coping with the loss. Special consideration must be made for any students or staff who witness the death, especially if (per DNR orders) no resuscitative treatment was performed either by school staff or EMS. Questions such as, "What if this happens to me?" and "Will they do anything for me?" may need to be addressed.

SUMMARY

As children with increasingly diverse and complex health care needs enroll in the Commonwealth's schools, it is vital that schools provide the care necessary to meet their health care needs and maximize their participation in the educational process. This requires careful planning, communication, care coordination, and ongoing collaboration among parents/guardians, providers, and school personnel. School nurses perform an essential case-management role in this process, ensuring that planning, health care delivery, training, and ongoing assessment are in place.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS (GENERAL)

The Arc of Massachusetts
Phone: 781-891-6270
Website: http://www.arcmass.org
The Arc enhances the lives of individuals with cognitive and developmental disabilities and their families. Arc helps to improve supports and services in the community.

Brain Injury Association of Massachusetts (BIAMA)
484 Main Street #325
Worcester, MA 01608
Phone: 800-242-0030 (Brain Injury Info Line)
Phone: 508-475-0032 (general information)
Fax: 508-475-0040
E-mail: biama@biama.org
Website: http://www.mbia.net/
BIAMA is the leading advocate for assuring that persons who experience brain injuries in the Commonwealth have adequate services to meet their needs. Information and resource referral are offered to those who are newly injured, as well as to survivors, families, and professionals who are seeking information on brain injury services and resources.

Easter Seals/Massachusetts
State Headquarters:
484 Main Street
Worcester, MA 01608
Phone: 800-922-8290
Fax: 508-831-9768
TTY: 800-564-9700
E-mail: info@eastersealsma.org
Website: http://ma.easterseals.com
Easter Seals Massachusetts provides services at more than 100 locations statewide, including:

- **Boston:**
  89 South Street, 1st Floor
  Boston, MA 02111
  Phone: 617-226-2640
  Fax: 617-737-9875

Federation for Children with Special Needs
1135 Tremont Street, Suite 420
Boston, MA 02120
Phone: 800-331-0688 (in MA) or 617-236-7210
Fax: 617-572-2094
Website: http://www.fcsn.org
The Federation is a parent-operated organization. Its website provides access to and information about laws related to health and educational rights and access issues. (See also Massachusetts Family Voices, below.)

Institute for Community Inclusion (ICI)
Institute for Community Inclusion/UCEDD
UMass Boston
100 Morrissey Blvd.
Boston, MA 02125
Phone: 617-287-4300
Fax: 617-287-4352
TTY: 617-287-4350
E-mail: ici@umb.edu

Website: http://www.communityinclusion.org
ICI is currently involved with school districts throughout the Commonwealth, assisting with the inclusion and empowerment of students with disabilities through technical assistance, training, and research. These activities are funded through a number of state and federal discretionary programs and include the areas of assistive technology, Person-Centered Planning, self-determination and leadership, transition from school to adult life, expanding inclusive recreational and community living options, and the inclusion of students with complex medical health care needs. The projects support restructuring and best practices in general education with learning as the central activity for all students. ICI is based at the University of Massachusetts Boston with additional offices at Children's Hospital Boston.

MassCARE (Massachusetts Community AIDS Resource Enhancement)
Massachusetts Department of Public Health
250 Washington Street, 4th Floor
Boston, MA 02108
Phone: 617-994-9819
Fax: 617-624-5990
TDD/TTY: 617-624-5992
MassCARE provides HIV-related specialty medical care, care coordination, and support services for women, infants, children, and adolescents with HIV/AIDS in community-based health centers and pediatric practices. It provides outreach to pregnant women and obstetrical providers to ensure early identification, enrollment, and enhanced care of pregnant women with HIV and to prevent HIV transmission from mothers to infants. It also provides outreach and support to perinatally infected, newly diagnosed, and at-risk adolescents through teen groups and community education. It promotes an active consumer network of meetings and activities for families.

Massachusetts Commission for the Deaf and Hard of Hearing
150 Mt. Vernon Street
Fifth Floor, Suite 550
Dorchester, MA 02125
Phone: 800-882-1155 or 617-740-1600
Fax: 617-740-1699
TTY: 800-530-7570 or 617-740-1700
Emergency Interpreter Services: 800-249-9949
Website: http://www.mass.gov/mcdhh
The Commission is the Commonwealth's principal agency working on behalf of people of all ages who are deaf and hard of hearing. Children's specialists in the Department of Case Management and Social Services established three specialized regional positions (Boston, Plymouth, and Springfield) to identify needs and issues, provide information about hearing loss, make referrals to appropriate specialized resources, and assist parents in working with other agencies. In addition, children's specialists also consult with or educate other service providers about the special needs of children who are deaf or have hearing loss.

Massachusetts Department of Education (DOE)
350 Main Street
Malden, MA 02148-5023
Phone: 781-338-3000
Three areas of DOE may be of assistance:

- **Program Quality Assurance Services (PQA)**
  Website: http://www.doe.mass.edu/pqa/
  PQA implements DOE's compliance monitoring and complaint management procedures for school districts, charter schools, educational collaboratives, and approved public and private day and residential special-education schools. It also provides technical assistance to school personnel and the public regarding the implementation of education laws and regulations.
- **Special Education Planning and Policy Development Office (SEPP)**
  E-mail: specialeducation@doe.mass.edu
  Website: http://www.doe.mass.edu/sped/
  SEPP develops special education policy and plans for statewide programs in related areas. Its website provides recent administrative advisory information, information on guides to the IEP, and

other technical assistance guides developed by DOE. Publications may also be obtained in hard copy at 781-338-3375.

- **Nutrition, Safety and Health Office (NSH)**
  Website: http://www.doe.mass.edu/hssss
  NSH is responsible for the coordinated school health programs.

Massachusetts Department of Public Health (DPH)
Division for Perinatal, Early Childhood, and Special Health Needs
250 Washington Street
Boston, MA 02108
Phone: 617-624-5070
Fax: 617-624-5990
TTY: 617-624-5992
Website: http://www.mass.gov/dph/fch/dshn.htm
The Massachusetts Department of Public Health (DPH) Division for Perinatal, Early Childhood, and Special Health Needs provides resources and services to families with children with special health needs through the Community Support and Care Coordination programs. Families may access these programs by calling the Community Support Line (800-882-1435) for information regarding eligibility for public benefits programs (SSI, CommonHealth, MassHealth), family-to-family supports (Family Ties), the Flexible Family Support Fund, care coordination services, and community-based programs. Care coordinators assist families to obtain services, coordinate with schools and medical providers, and provide consultation to parents/guardians, educators, and medical and social service providers regarding resources and services for children with special health care needs.

MASSTART
Central Regional Health Office, DPH
180 Beaman Street
W. Boylston, MA 01583
Phone: 508-792-7880
Website: http://www.mass.gov/dph/fch/masstart.htm
MASSTART is a free consultation and technical support service for parents/guardians whose children have complex health conditions or students who are assisted by technology, school nurses, and other school or health care personnel. Services provided by this program include staff training and consultation/information on health care technologies such as tube feedings, ventilators, and oxygen, as well as on diagnosis-specific health management in the school. With the family's permission and involvement, MASSTART also provides child-specific consultation regarding health care and emergency planning for students who are assisted by technology or have complex health conditions. DPH's Bureau of Family and Community Health, Division for Special Health Needs funds MASSTART. For more information or to make a referral, contact the Central Regional Health Office or the provider in your region:

- **Northeast and Greater Boston**
  Children's Hospital
  300 Longwood Avenue
  Boston, MA 02115
  Phone: 617-355-4664
  Fax: 617-730-0049
- **Southeast Region**
  Centrus Premier Home Care
  225 Water Street
  Plymouth, MA 02360-4041
  Phone: 508-747-3521
  Fax: 800-698-8200 or 508-746-6706
  TTY: 800-698-8200
- **Central Region**
  UMMHC
  Pediatric Pulmonary and CF Center
  55 Lake Avenue North
  Worcester, MA 01655

Phone: 508-856-4155
Fax: 508-856-2609
E-mail: PageDO2@ummhc.org

- **Western Region**
  Baystate Medical Center Children's Hospital
  759 Chestnut Street
  Springfield, MA 01199
  Phone: 413-794-3406
  Fax: 413-794-8411
- **Office of Emergency Medical Services**
  Office of Emergency Medical Services
  2 Boylston Street, 3rd Floor
  Boston, MA 02116
  Phone: 617-753-7300
  Fax: 617-753-7320
  Website: http://www.mass.gov/dph/oems/
  OEMS is a source of information and forms related to Comfort Care/DNR orders.
- **School Health Unit**
  Phone: 617-624-6060
  Fax: 617-624-6062
  TTY: 617-624-5992
  Website: http://www.mass.gov/dph/fch/schoolhealth
  DPH's School Health Unit, Division of Primary Care and Health Access provides ongoing consultation to school health personnel and families regarding planning for students with special health care needs, including entry and retention. It also collects data on prevalence of health conditions; administers a School Health Institute that provides ongoing professional education for school nursing, medical, and other staff; and assists schools in developing guidelines and protocols for the management of children with special health care needs in the schools.

Massachusetts Family TIES (Together In Enhancing Support)
Phone: 800-905-TIES (8437)
Website: http://www.massfamilyties.org/
Family TIES of Massachusetts is a statewide information and parent-to-parent support project for families of children with special needs and chronic illnesses. It is administered by parent coordinators housed in each of DPH's regional offices. Messages may be left at the toll-free number shown above. Coordinators retrieve these messages twice a day, Monday through Friday, and return calls as soon as possible. Only direct referrals to the program can be accepted. Calls from all parents, professionals, or members of the community supporting families of children with special needs are welcome. A comprehensive directory of resources for families of children with special needs of all kinds is available in PDF format on the website.

Massachusetts Family Voices
1135 Tremont Street, Suite 420
Boston, MA 02120
Phone: 800-331-0688 x210 or 617-236-7210 x210
Fax: 617-572-2094
E-mail: massfamilyvoices@aol.com
Website: http://www.massfamilyvoices.org
Massachusetts Family Voices at the Federation for Children with Special Needs is a state chapter of Family Voices, a national grassroots network of families, friends, and professionals brought together by a common concern for children with special health care needs.

May Institute
One Commerce Way
Norwood, MA 02062
Phone: 800-778-7601 or 781-440-0400
TTY: 781-440-0461
E-mail: info@mayinstitute.org

May Institute is a treatment, research, and training center specializing in autism, brain injury, mental retardation, pervasive developmental disorder (PDD), and behavioral health care needs.

National Kidney Foundation of Massachusetts, Rhode Island, New Hampshire and Vermont
85 Astor Avenue, Suite 2
Norwood, MA 02062-5056
Phone: 800-542-4001 or 781-278-0222
Fax: 781-278-0333
Website: http://www.kidneyhealth.org

The foundation's mission is to prevent kidney and urinary tract disease, improve the health and well-being of individuals and families affected by these diseases, and increase the availability of all organs for transplant.

NERGG, Inc. (New England Regional Genetics Group)
P.O. Box 920288
Needham, MA 02492
Phone: 781-444-0126
Fax: 781-444-0127
Website: http://www.nergg.org
NERGG is a consortium of genetic health service providers, representatives of the New England public health community, consumer groups, and individuals with interest in genetics. It promotes health of children and adults by increasing awareness of genetic concerns, understanding of the role of genetics in health care, and knowledge of the availability of appropriate services. Educational materials produced by NERGG include *Just like Me? Children Talk about Spina Bifida,* a video produced in conjunction with the Massachusetts Health Research Institute, and *Guidelines for the Management of Students with Genetic Disorders: A Manual for School Nurses (5th Ed.)*. The latter covers general topics for the school nurse and contains chapters on 5 specific genetic disorders: sickle cell disease, myelodysplasia, cystic fibrosis, muscular dystrophy, and diabetes.

New England ADA & Accessible IT Center
Phone/TTY: 800-949-4232
E-mail: ADAinfo@NewEnglandADA.org
Website: http://adaptiveenvironments.org/neada/
The New England ADA & Accessible IT Center provides information and guidance on the Americans with Disabilities Act, Section 508, and accessible information technology to individuals living in New England. The website includes an online store, where ADA documents and other publications may be ordered.

New England Center Deafblind Project
175 North Beacon Street
Watertown, MA 02472
Phone: 617-972-7515
Fax: 617-972-7354
TTY: 617-924-5525
E-mail: NEC@perkins.org
Website: http://www.necdbp.org/index.htm
The New England Center Deafblind Project is funded by the United States Department of Education, Special Education Programs, under the Individuals with Disabilities Education Act (IDEA), to assist state education agencies in developing their capacity to adequately serve children and youth who are deafblind.

New England SERVE
101 Tremont Street, Suite 812
Boston, MA 02108
Phone: 617-574-9493
Fax: 617-574-9608
E-mail: info@neserve.org
Website: http://www.neserve.org

New England SERVE works on many diverse projects with one common goal: to improve the quality of health systems for children with special health care needs and their families. It established the Massachusetts Consortium for Children with Special Health Care Needs, a working group dedicated to high-quality, responsive, and family-centered systems of care, and it continues to convene and facilitate its activities.

PAL, the Parent Professional Advocacy League
Phone: 866-815-8122
Website: http://www.ppal.net
PAL is a statewide network of parents/guardians and professionals supporting children with mental, emotional, and behavioral needs.

Starlight Starbright Children's Foundation of New England
The Schrafft Center
529 Main Street, Suite 608
Charlestown, MA 02129
Phone: 617-241-9911
Fax: 617-241-0066
Website: http://www.starlightnewengland.org
The mission of the Starlight Starbright Children's Foundation is to alleviate some of the loneliness and pain that children feel while enduring the difficulties associated with having a serious illness.

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS (GENERAL)

ABLEDATA
8630 Fenton Street, Suite 930
Silver Spring, MD 20910
Phone: 800-227-0216
Fax: 301-608-8958
TTY: 301-608-8912
E-mail: abledata@orcmacro.com
Website: http://www.abledata.com
ABLEDATA provides a national database of information on assistive technology and rehabilitation equipment. Information specialists are available to answer questions, provide information, and perform searches. ABLEDATA is sponsored by the National Institute on Disability and Rehabilitation Research, U.S. Department of Education.

Americans with Disabilities Act (ADA)
Phone: 800-514-0301 (Information line)
TDD: 800-514-0383
Website: http://www.usdoj.gov/crt/ada/adahom1.htm
The ADA website houses information, frequently asked questions, publications, etc. on the Americans with Disabilities Act, which is the short title of United States Public Law 101-336, 104 Stat. 327 (July 26, 1990), codified at 42 U.S.C. §12101 et seq., signed into law on July 26, 1990. The ADA is a wide-ranging civil rights that prohibits, under certain circumstances, discrimination based on disability. It affords similar protections against discrimination to Americans with disabilities as the Civil Rights Act of 1964, which made discrimination based on race, religion, sex, national origin, and other characteristics illegal.

Assistive Technology Resource Center (ATRC)
100 Institute Road, Room 129
Worcester, MA 01609
Phone: 508-831-6056
Fax: 508-831-5680
E-mail: atrc@wpi.edu

Website: http://www.wpi.edu/~atrc
ATRC disseminates technical information regarding availability and use of assistive devices for individuals with disabilities in central Massachusetts.

Association for the Care of Children's Health (ACCH)
19 Mantua Road
Mt. Royal, NJ 08061
Phone: 609-224-1742
Fax: 609-423-3420
Website: http://www.acch.org/acch/
Website with links to numerous websites and publications in the field of children's health.

American Academy of Child and Adolescent Psychiatry (AACAP)
3615 Wisconsin Avenue NW
Washington, DC 20016-3007
Phone: 202-966-7300
Fax: 202-966-2891
Website: http://www.aacap.org
Publications: *The Child with a Long-term Illness* and *Children and Adolescents and HIV/AIDS,* Nos. 19 and 30 of the series, *Facts for Families* (updated 1999). Other fact sheets deal with conditions such as Asperger's Disorder, autism, and Tourette Syndrome. Fact sheets may be reproduced for personal or educational use without written permission and are available in English and Spanish at http://www.aacap.org/publications/factsfam or by calling the AACAP circulation clerk at 800-333-7636 x131.

American Academy of Pediatrics (AAP)
National Center of Medical Home Initiatives
141 Northwest Point Blvd.
Elk Grove Village, IL 60007
Phone: 847-434-4000
Fax: 847-228-7035
E-mail: medical_home@aap.org
Website: http://www.medicalhomeinfo.org
The National Center works in cooperation with federal agencies, particularly the Maternal and Child Health Bureau (MCHB), to ensure that children with special needs have access to a medical home. The National Center provides support to physicians, families, and other medical and nonmedical providers who care for children and youth with special needs.

Band-Aides and Blackboards
Website: http://www.faculty.fairfield.edu/fleitas/contents.html
This website, created by an RN, offers information about what illness and disability feel like from the perspective of children with these medical problems. It includes resources for teachers and school nurses on a variety of conditions.

Center for Applied Special Technology (CAST)
40 Harvard Mills Square, Suite 3
Wakefield, MA 01880
Phone: 781-245-2212
E-mail: cast@cast.org
Website: http://www.cast.org
CAST's mission is to expand learning opportunities for all individuals, especially those with disabilities, through the research and development of innovative, technology-based educational resources and strategies, based on the principles of Universal Design for Learning. CAST has earned international recognition for its work.

Children's Health Council
650 Clark Way
Palo Alto, CA 94304

Phone: 650-688-3625
Website: http://www.chconline.org
Resource: *Medically Fragile Children in School: A Guide Book for Teachers* is written for classroom teachers who encounter students with medically fragile conditions. It provides valuable accommodations, references, and resources for everyday challenges.

Collaborative Center for Assistive Technology and Training (CCATT)
97 Hawley Street
Northampton, MA 01060
Phone: 413-586-4900
Fax: 413-586-0180
E-mail: info@collaborative.org
Website: http://www.collaborative.org
CCATT is an assistive technology training and evaluation center serving western Massachusetts. It provides consultation to schools and offers a weekly open lab time for parents/guardians and professionals to promote product awareness.

Council of Educators for Students with Disabilities, Inc.
13091 Pond Springs Road, Suite 300
Austin, TX 78729
Phone: 512-219-5043
Fax: 512-918-3013
Website: http://www.504idea.org
The Council provides Section 504 and IDEA training and resources for educators.

DisabilityInfo.gov
Website: http://www.disabilityinfo.gov
DisabilityInfo.gov is a comprehensive online resource designed to provide easy access to disability-related information and programs available across the government on numerous subjects, including health and education.

DRM Regional Resource Directory
Website: http://www.disabilityresources.org
DRM Regional Resource Directory is a resource site, operated by the publisher of Disability Resources Monthly newsletter, to link subscribers and others with a disability to organizations and agencies in their own states or communities. It offers the DRM WebWatcher, a subject guide to online disability resources that can be used to find national and international resources, documents, databases, and other informational materials about specific disabilities or disability-related topics.

Family Village
Website: http://www.familyvillage.wisc.edu/
The Family Village website provides information, resources, and communication opportunities for people with disabilities, families, and providers. Family Village includes informational resources on specific diagnoses, communication connections, adaptive products and technology, adaptive recreational activities, education, worship, health issues, disability-related media and literature, and much more.

Family Voices, Inc.
2340 Alamo SE, Suite 102
Albuquerque, NM 87106
Phone: 888-835-5669 or 505-872-4774
Fax: 505-872-4780
E-mail: kidshealth@familyvoices.org
Website: http://www.familyvoices.org
Family Voices is a national, grassroots clearinghouse for information and education concerning the health care of children with special health needs.

Federation for Children with Mental Health Needs
1101 King Street, Suite 420
Alexandria, VA 22314
Phone: 703-684-7710
Website: http://www.ffcmh.org
A national family-run organization dedicated exclusively to helping children with mental health needs and their families achieve a better quality of life

Health Care Transitions
Institute for Child Health Policy
University of Florida
P.O. Box 100147
Gainesville, FL 32610-0147
Phone: 352-265-7220
Fax: 352-265-7221
Website: http://hctransitions.ichp.ufl.edu/
The mission of the Health Care Transition Initiative at the University of Florida is to increase awareness of, gain knowledge about, and promote cooperative efforts to improve the process of transitioning from child-centered (pediatric) to adult-oriented health care for all adolescents and young adults. Current efforts focus on those with disabilities and special health care needs. Activities carried out through the Transition Initiative include research, product development, and networking. One pertinent research project is Health Care Transition and the Schools (ICARE).

Individuals with Disabilities Education Act (IDEA)
Website: http://www.ideapractices.org/lawandregs.htm

National Center on Birth Defects and Developmental Disabilities (CDC)
E-mail: bddi@cdc.gov
Website: http://www.cdc.gov/ncbddd/default.htm
The National Center on Birth Defects and Developmental Disabilities promotes the health of babies, children, and adults, and enhances the potential for full, productive living.

National Center on Low-Incidence Disabilities
University of Northern Colorado
McKee Hall Campus Box 146
Greeley, CO 80639
Phone/TTY: 800-395-2693
E-mail: nclid@listserv.unco.edu
Website: http://www.NCLID.unco.edu

National Center on Secondary Education and Transition (NCSET)
Institute on Community Integration
University of Minnesota
6 Pattee Hall, 150 Pillsbury Drive SE
Minneapolis, MN 55455
Phone: 612-624-2097
Fax: 612-624-9344
E-mail: ncset@umn.edu
Website: http://www.ncset.org
NCSET is a partnership of 6 organizations nationally recognized for a wide range of efforts focused on the secondary education and transition of youths with disabilities.

National Dissemination Center for Children with Disabilities/National Information Center for Children and Youth with Disabilities (NICHCY)
P.O. Box 1492
Washington, DC 20013

Phone/TTY: 800-695-0285
Fax: 202-884-8441
E-mail: nichcy@aed.org
Website: http://www.nichcy.org
NICHCY provides disability-specific information and state-by-state listings of resources.

National Down Syndrome Society (NDSS)
666 Broadway
New York, NY 10012
Phone: 800-221-4602 or 212-460-9330
Fax: 212-979-2873
E-mail: info@ndss.org
Website: http://www.ndss.org
NDSS provides education, research, and advocacy for people with Down Syndrome and their families.

National Heart, Lung and Blood Institute (NHLBI) Information Center
P.O. Box 30105
Bethesda, MD 20824-0105
Phone: 301-592-8573
Fax: 240-629-3246
E-mail: NHLBIInfo@rover.nhlbi.nih.gov
Website: http://www.nhlbi.nih.gov
NHLBI conducts educational activities for health professionals and the public, including development and dissemination of materials related to diseases of the heart, blood vessels, lung, and blood, with an emphasis on prevention.
Resource: *Students with Chronic Illnesses: Guidance for Families, Schools and Students* presents positive actions schools and families can take to address issues common to many chronic diseases. It is intended to help schools design a more coordinated approach to meeting the needs of students with chronic illnesses.

National Institute of Neurological Disorders and Stroke
NIH Neurological Institute
P.O. Box 5801
Bethesda, MD 20824
Phone: 800-352-9424 or 301-496-5751
TTY: 301-468-5981
Website: http://www.ninds.nih.gov

National Kidney Foundation (NKF)
30 East 33rd Street
New York, NY 10016
Phone: 800-662-9010 or 212-889-2210
Fax: 212-689-9261
E-mail: info@kidney.org
Website: http://www.kidney.org
Serving kidney patients and families, transplant recipients of all types, and donors and donor families, NKF provides an array of educational and supportive programs.

National Organization for Rare Disorders (NORD)
55 Kenosia Avenue
P.O. Box 1968
Danbury, CT 06813-1968
Phone: 800-999-6673 or 203-744-0100
TDD: 203-797-9590
Fax: 203-798-2291
E-mail: orphan@rarediseases.org
Website: http://www.rarediseases.org

NORD provides detailed medical information, support group listings, and other resources for specific disorders.

National Resource Center on AD/HD
8181 Professional Place, Suite 150
Landover, MD 20785
Phone: 800-233-4050 or 301-306-7070
Fax: 301-306-7090
Website: http://www.help4adhd.org
The National Resource Center (NRC) on AD/HD, A Program of CHADD (Children and Adults with Attention-Deficit/Hyperactivity Disorder), was established in 2002 to be the national clearinghouse for the latest evidence-based information on AD/HD. The NRC provides comprehensive information and support to individuals with AD/HD, their families and friends, and the professionals involved in their lives.

Starlight Starbright Children's Foundation
1850 Sawtelle Boulevard, Suite 450
Los Angeles, CA 90025
Phone: 800-315-2580 or 310-479-1212
Fax: 310-479-1235
E-mail: info@starlight.org
Website: http://www.starlight.org
Starlight Starbright brings together experts from pediatric health care, technology, and entertainment to create programs that educate, entertain, and inspire seriously ill children. Programs are available for kids with asthma, diabetes, sickle cell disease, burn injuries, cancer, kidney disease, and cystic fibrosis.

U.S. Department of Education
Office for Civil Rights (OCR)
Customer Service Team
550 12th Street SW
Washington, DC 20202-1100
Phone: 800-421-3481
Fax: 202-245-6840
TDD: 877-521-2172
E-mail: OCR@ed.gov
Website: http://www.ed.gov/about/offices/list/ocr/index.html
OCR serves student populations facing discrimination and the advocates and institutions promoting systemic solutions to civil rights problems. It provides technical assistance to help institutions achieve voluntary compliance with the civil rights laws that OCR enforces.

Office of Special Education and Rehabilitative Services (OSERS)
U.S. Department of Education
400 Maryland Avenue SW
Washington, DC 20202-7100
Phone: 202-245-7468
Website: http://www.ed.gov/about/offices/list/osers/index.html
OSERS provides a wide array of supports to parents and individuals, school districts, and states in three main areas: special education, vocational rehabilitation, and research. The website offers news and information on the Individuals with Disabilities Education Improvement Act of 2004 (IDEA).

RESOURCES: SPECIFIC HEALTH CONDITIONS

Attention Deficit Disorders (ADD, ADHD)

AD-IN, Inc. (Attention Deficit Information Network)
58 Prince Street
Needham, MA 02492
Phone: 781-455-9895
Fax: 781-449-1332
E-mail: adin@gis.net
Website: http://www.addinfonetwork.org
AD-IN, Inc. is a non profit volunteer organization that offers support and information to families of children with ADD, adults with ADD, and professionals, through a network of AD-In chapters.

Children and Adults with Attention Deficit Disorders (CHADD)
8181 Professional Place, Suite 150
Landover, MD 20785
Phone: 800-233-4050 or 301-306-7070
Fax: 301-306-7090
E-mail: national@chadd.org
Website: http://www.chadd.org
CHADD is the nation's leading non-profit organization serving individuals with AD/HD and their families. CHADD has over 16,000 members in 200 local chapters throughout the U.S. Chapters offer support for individuals, parents, teachers, professionals, and others.

Attention Deficit Disorder Association (ADDA)
P.O. Box 543
Pottstown, PA 19464
Phone: 484-945-2101
Fax: 610-970-7520
E-mail: mail@add.org
Website: http://www.add.org
The mission of ADDA is to provide information, resources and networking to adults with AD/HD and to the professionals who work with them.

Asthma/Allergy

Allergy & Asthma Network Mothers of Asthmatics
2751 Prosperity Avenue, Suite 150
Fairfax, VA 22031
Phone: 800-878-4403
Fax: 703-573-7794
Website: http://www.aanma.org
AANMA is a national nonprofit network of families whose desire is to overcome, not cope with, allergies and asthma.

American Academy of Allergy Asthma & Immunology (AAAAI)
555 East Well Street
Milwaukee, WI 53202
Phone: 800-822-2762 or 414-272-6071
E-mail: info@aaaai.org
Website: http://www.aaaai.org
Materials: *Allergy and Asthma Tool Kit for School Nurses* is available at http://www.aaaai.org/professionals.stm.

American College of Allergy, Asthma & Immunology (ACAAI)
85 West Algonquin, Suite 550
Arlington Heights, IL 60005
Phone: 847-427-1200
Fax: 847-427-1294
E-mail: mail@acaai.org
Website: http://www.acaai.org
ACAAI is dedicated to improving the quality of patient care in allergy and immunology, through research, advocacy, and professional and public education.

American Lung Association of Massachusetts
460 Totten Pond Road, Suite 400
Waltham, MA 02451-1991
Phone: 781-890-4262
Fax: 781-890-4280
E-mail: info@lungma.org
The American Lung Association's *Open Airways For Schools (OAS)* is an asthma management program for schoolchildren aged 8–11 who have been diagnosed with asthma. It is taught as 6 40-minute sessions during the school day by a certified instructor. The program's goals are to improve asthma self-management skills, decrease asthma emergencies, raise asthma awareness among parents/guardians, and promote broader asthma management coordination among physicians, parents, and schools.

Asthma and Allergy Foundation of America (AAFA)
Phone: 800-7-ASTHMA (800-727-8462)
E-mail: info@aafa.org
Website: http://www.aafa.org
AAFA's website offers a variety of educational tools and resources. There are regional chapters, including:

- **New England Chapter**
  220 Boylston Street
  Chestnut Hill, MA 02467
  Phone: 877-2-ASTHMA (877-227-8462) or 617-965-7771
  Fax: 617-965-8886
  E-mail: info@asthmaandallergies.org
  Website: http://www.asthmaandallergies.org

CDC's School Asthma Program
Centers for Disease Control and Prevention
Division of Adolescent and School Health
4770 Buford Highway NE
Mail Stop K-12
Atlanta, GA 30341-3717
Phone: 888-231-6405
E-mail: HealthyYouth@cdc.gov
Website: http://www.cdc.gov/HealthyYouth/Asthma/

Massachusetts Department of Public Health
Center for Environmental Health
Phone: 617-624-5757
Fax: 617-624-5777
TTY: 617-624-5286
Website: http://www.mass.gov/dph/beha
The above website provides results and information about Student Asthma Surveillance Surveys.

National Heart, Lung and Blood Institute Health Information Center
P.O. Box 30105
Bethesda, MD 20824-0105
Phone: 301-592-8573

Fax: 240-629-3246
E-mail: NHLBIInfo@rover.nhlbi.nih.gov
Website: http://www.nhlbi.nih.gov
NHLBI's Health Information Center offers a variety of resources, including:

- *Managing Asthma: A Guide for Schools* (2003 Edition): Updated in 2003 to follow the latest asthma treatment guidelines, this 36-page guide includes easily reproducible information sheets on how peak flow meters and metered-dose inhalers work, a fill-in asthma action plan template to keep on file, an information sheet on the early signs of an asthma attack, sources of additional information about asthma, and more.
- *Asthma and Physical Activity in the School:* This is an easy-to-read booklet for teachers and coaches who want to help students with asthma participate in sports and physical activities. It covers the causes of asthma, symptoms of an asthma attack, how to avoid and control asthma triggers, how to help students who take medications, and how to modify activities to match children's current asthma status, and it also includes a reproducible student asthma action card.

National Jewish Medical and Research Center
1400 Jackson Street
Denver, CO 80206
Phone: 800-222-LUNG (5864)
E-mail: lungline@njc.org
Website: http://asthma.nationaljewish.org/
National Jewish Medical and Research Center's website offers information about asthma symptoms, asthma medications, and asthma management. Call the toll-free Lung Line to ask a specialized nurse questions about asthma, allergies, or other lung disease.

New England Asthma Regional Council (New England ARC)
The Medical Foundation
622 Washington Street, 2nd Floor
Dorchester, MA 02124
Phone: 617-451-0049 x504
Website: http://www.asthmaregionalcouncil.org
New England ARC is a coalition of public agencies, private organizations, and researchers in New England working to address environmental contributors to asthma.

Autism

Autism and PDD Support Network (Autism-PDD.Net)
P.O. Box 1596
Pleasanton, CA 94566
Website: http://www.autism-pdd.net
Autism-PDD.Net offers online information, support, and resources helping with issues pertaining to autism spectrum and pervasive developmental disorders (ASD & PDD).

Autism Society of America
7910 Woodmont Avenue, Suite 300
Bethesda, MD 20814-3067
Phone: 800-328-8476 or 301-657-0881
Website: http://www.autism-society.org
There are chapters around the country, including:

- **Massachusetts Chapter**
  47 Walnut Street
  Wellesley Hills, MA 02481-2108
  Phone: 781-237-0272 x17

The Autism Support Center (ASC)
6 Southside Road
Danvers, MA 01923

Phone: 800-7-AUTISM (800-728-8476) or 978-777-9135
Fax: 978-762-3980
E-mail: asc@nsarc.org
Website: http://www2.primushost.com/~nsarc/
ASC empowers families who have a member with autism or related disorder by providing current, accurate, and unbiased information about autism, services, referrals, resources, and research trends. It also provides educational opportunities for families, professionals, and communities; promotes networking; increases community awareness; and advocates for services and opportunities.

Autism Research Institute (ARI)
4182 Adams Avenue
San Diego, CA 92116
Fax: 619-563-6840
Website: http://www.autismwebsite.com/ari/index.htm
ARI is primarily devoted to conducting research, and to disseminating the results, on the causes of autism and on methods of preventing, diagnosing, and treating autism and other severe behavioral disorders of childhood.

Center for the Study of Autism
P.O. Box 4538
Salem, OR 97302
Website: http://www.autism.org
The Center provides information about autism to parents/guardians and professionals and conducts research on the efficacy of various therapeutic interventions. Much of its research is in collaboration with the Autism Research Institute.

Cerebral Palsy

Cerebral Palsy of Massachusetts
Children's Development Center
43 Old Colony Avenue
Quincy, MA 02170
Phone: 617-479-7443
Fax: 617-749-5352
Website: http://www.masscp.org
Cerebral Palsy of Massachusetts provides a continuum of community based services that support the efforts of children and adults with developmental disabilities to live as independently as possible in the least restrictive environment.

Diabetes

American Association of Diabetes Educators (AADE)
100 W. Monroe Street, Suite 400
Chicago, IL 60603
Phone: 800-338-3633
Fax: 312-424-2427
Website: http://www.aadenet.org
AADE is a professional association dedicated to promoting the expertise of the diabetes educator, ensuring the delivery of quality diabetes self-management training to the patient and contributing to the future direction of the profession.

American Diabetes Association
Attn: National Call Center
1701 North Beauregard Street
Alexandria, VA 22311
Phone: 800-DIABETES (800-342-2383)
E-mail: AskADA@diabetes.org (for diabetes-related questions or to request a diabetes information packet)

Website: http://www.diabetes.org
There are offices around the country, including:

- **American Diabetes Association (Local)**
  330 Congress Street, 5th Floor
  Boston, MA 02110
  Phone: 888-DIABETES (888-342-2383) or 617-482-4580
  Fax: 617-482-1824

Children with Diabetes
5689 Chancery Place
Hamilton, OH 45011
E-mail: info@childrenwithdiabetes.com
Website: http://www.childrenwithdiabetes.com
The mission of Children with Diabetes is to promote understanding of the care and treatment of diabetes, especially in children, to increase awareness of the need for unrestricted diabetes care for children at school and in child care, to support families living with diabetes, and to promote understanding of research into a cure.

Diabetes Association, Inc. (DAI)
170 Pleasant Street, Suite 203
Fall River, MA 02721
Phone: 508-672-5671
Website: http://www.diabetesma.org/
DAI's mission is to improve the health and well-being of the communities that DAI serves by advancing diabetes prevention, early detection, education, and disease management.

GrandmaSandy.com
Website: http://www.grandmasandy.com
GrandmaSandy.com offers free download of games and books about Type 1 diabetes for young children.

Joslin Diabetes Center
One Joslin Place
Boston, MA 02215
Phone: 617-732-2400
Website: http://www.joslin.org/

Juvenile Diabetes Research Foundation International
120 Wall Street
New York, NY 10005-4001
Phone: 800-533-CURE (2873)
Fax: 212-785-9595
E-mail: info@jdrf.org
There are multiple chapters, including:

- **Juvenile Diabetes Research Foundation New England Chapter/Bay State**
  20 Walnut Street, Suite 318
  Wellesley Hills, MA 02481
  Phone: 781-431-0700
  Fax: 781-431-8836
  E-mail: baystate@jdrf.org
  Website: http://www.jdrf.org/baystate

Massachusetts Diabetes Prevention and Control Program
250 Washington Street, 4th Floor
Boston, MA 02108
Phone: 617-624-5070

Fax: 617-624-5990
Website: http://www.mass.gov/dph/fch/diabetes/index.htm

National Diabetes Education Program (NDEP)
National Diabetes Education Program
One Diabetes Way
Bethesda, MD 20814-9692
Phone: 301-496-3583 (Office of Communications and Public Liaison, NIDDK, NIH)
Phone: 800-438-5383 (to order educational materials)
E-mail: ndep@info.nih.gov
Website: http://www.ndep.nih.gov/resources/school.htm
NDEP is a partnership of NIH, CDC, and more than 200 public and private organizations, including the Massachusetts Diabetes Prevention and Control Program. Publications include *Helping the Student with Diabetes Succeed,* a comprehensive guide designed to empower school personnel, parents/guardians, and students to create a safe learning environment and equal access to educational opportunities for all children with diabetes.

National Diabetes Information Clearinghouse (NDIC)
1 Information Way
Bethesda, MD 20892-3560
Phone: 800-860-8747
Website: http://diabetes.niddk.nih.gov/index.htm
NDIC is an information dissemination service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), part of the National Institutes of Health (NIH), one of eight health agencies of the Public Health Service under the U.S. Department of Health and Human Services. NDIC was established in 1978 to increase knowledge and understanding about diabetes among patients, health care professionals, and the general public.

Food Allergies

Food Allergy & Anaphylaxis Network (FAAN)
11781 Lee Jackson Hwy., Suite 160
Fairfax, VA 22033-3309
Phone: 800-929-4040
Fax: 703-691-2713
E-mail: faan@foodallergy.org
Website: http://www.foodallergy.org
FAAN works to raise public awareness, provide advocacy and education, and advance research on behalf of all those affected by food allergies and anaphylaxis. It offers a variety of resources for schools, including free food allergy information programs for elementary, middle, and high schools and guidelines for managing students with food allergies. The organization also operates informational websites for children and teens, which may be accessed via the main site.

HIV/AIDS

AIDS Action Committee
294 Washington Street, 5th Floor
Boston, MA 02108
Phone: 800-235-2331 or 617-437-6200
Fax: 617-437-6445
TTY: 617-437-1394
Website: http://www.aac.org
Founded in 1983, AIDS Action Committee of Massachusetts is a not-for-profit, community-based health organization whose mission is to stop the HIV/AIDS epidemic by preventing new infections and optimizing the health of those already infected. The website contains valuable information about HIV/AIDS and the services the organization provides.

AIDSinfo
http://www.aidsinfo.nih.gov/
AIDSinfo, a website sponsored by the U.S. Department of Health and Human Services, offers fact sheets, brochures, and other resources; provides support services to men, women, and children living with HIV/AIDS; educates the public about HIV; and advocates for fair and effective AIDS policy.

AIDS Project Worcester
85 Green Street
Worcester, MA 01604
Phone: 800-756-4148 or 508-755-3773
Fax: 508-795-1665
TTY: 800-756-4148
E-mail: info@aidsprojectworcester.org
Website: http://www.aidsprojectworcester.org
AIDS Project Worcester provides a variety of services for families or individuals living with HIV or AIDS, including case management, alternative therapies, food bank, mental health services, family services, and counseling.

Boston Pediatric and Family AIDS Project Respite Care
55 Dimock Street
Roxbury, MA 02119
Phone: 617-442-8800
Fax: 617-442-1702
This organization provides money for a friend or relative to care for children of HIV-positive parents on a short-term basis.

HIV InSite
Website: http://hivinsite.ucsf.edu/InSite
This informational site was developed by the Center for HIV Information (CHI) at the University of California San Francisco (UCSF), one of the world's leading health sciences institutions.

The SPARK Center (formerly the Children's AIDS Program)
255 River Street
Mattapan, MA 02126
Phone: 617-534-2050
Fax: 617-534-2057
E-mail: cap@bmc.org
Website: http://www.bmc.org/pediatrics/special/CAP/overview.html
The SPARK Center provides therapeutic, medically-specialized programs for children of all ages with HIV/AIDS.

The Home for Little Wanderers
271 Huntington Avenue
Boston, MA 02115
Phone: 888-466-3321 or 617-267-3700
Fax: 617-267-8142
TTY: 617-927-0699
Website: http://www.thehome.org
The Home for Little Wanderers provides a trained person to provide hourly or overnight care for children who are infected or affected by HIV.

Massachusetts Community AIDS Resource Enhancement (MassCARE)
(See listing under General Resources)

New Bedford Child and Family Services: Family Ties
800 Purchase Street
New Bedford, MA 02740

Phone: 508-990-0894
E-mail: dlanagan@cfservices.org
Website: http://www.cfservices.org

Hemophilia

National Hemophilia Foundation (NHF)
116 West 32nd Street, 11th Floor
New York, NY 10001
Phone: 212-328-3700
Fax: 212-328-3777
Website: http://www.hemophilia.org
NHF has many programs, including:

- **HANDI: The Information Service of NHF**
  Phone: 800-42-HANDI (800-424-2634)
  Fax: 212-328-3799
  E-mail: handi@hemophilia.org

New England Hemophilia Association
347 Washington Street, Suite 402
Dedham, MA 02026-1862
Phone: 781-326-7645
Fax: 781-329-5122
E-mail: neha@theworld.com
Website: http://www.newenglandhemophilia.org
New England Hemophilia Association is dedicated to empowering individuals and families with bleeding disorders through building local and region-wide communities, providing diverse information sources, dynamic programming, individual and legislative advocacy, and financial aid.

Seizure Disorders

Awareness and Access to Care for Children and Youth with Epilepsy (AACYE)
National Initiative for Children's Healthcare Quality (NICHQ)
20 University Road, 7th Floor
Cambridge, MA 02138
Phone: 866-787-0832 or 617-301-4900
Fax: 617-301-4899
E-mail: info@nichq.org
Website: http://www.nichq.org/nichq
NICHQ is an education and research organization dedicated solely to improving the quality of health care provided to children. NICHQ's AACYE initiative aims to improve systems of care for children and youth with epilepsy, especially those residing in medically underserved areas.

Centers for Disease Control and Prevention
Epilepsy
4770 Buford Hwy, NE
MS K-51
Atlanta, GA 30341-3717
Website: http://www.cdc.gov/epilepsy/index.htm
CDC's epilepsy website details current partnerships and health promotion activities being supported by the agency's epilepsy program. A variety of informational resources are available, including *You Are Not Alone,* a toolkit developed specifically for parents of teens who have epilepsy.

Citizens United for Research in Epilepsy (CURE)
730 N. Franklin Suite 404
Chicago, IL 60610

Phone: 312-255-1801
Fax: 312-255-1809
E-mail: info@CUREepilepsy.org
Website: http://www.CUREepilepsy.org

Epilepsy.com
Website: http://www.epilepsy.com
Epilepsy.com is an online resource provided by the Epilepsy Therapy Development Project, which supports innovative treatment research through direct grants and participation in the Partnership for Research in Pediatric Epilepsy. The mission of Epilepsy.com is to inform and empower two groups of patients and their families: those facing newly diagnosed epilepsy, and those struggling with epilepsy that has resisted treatment. Epilepsy.com was created to provide in-depth information about epilepsy and the many treatments that are available for it, in a form accessible to nonprofessionals.

Epilepsy Education Association, Inc.
1025 Creekside Ct., Apt. C
Mishawaka, IN 46544
Phone/Fax: 219-273-4050
Website: http://www.iupui.edu/~epilepsy
The Epilepsy Education Association is dedicated to promoting education about epilepsy.

Epilepsy Foundation of America (EFA)
8301 Professional Place
Landover, MD 20785-2238
Phone: 800-332-1000 or 301-459-3700
Fax: 301-577-4941
TTY: 800-332-2070
Website: http://www.epilepsyfoundation.org/
EFA works to ensure that people with seizures are able to participate in all life experiences and to prevent, control, and cure epilepsy through research, education, advocacy, and services. It conducts several programs at the national level, including:

- **School Nurse Training Program: Managing Students with Seizures**
  Website: http://www.epilepsyfoundation.org/programs/schoolnurse.cfm
  This special section of the Epilepsy Foundation website provides resources and supplementary material to assist the school nurse with better managing and supporting students with seizures and epilepsy. It provides Seizure Action Plan forms, epilepsy fact sheets, and other online resources. Books, pamphlets, and videos are also available for purchase. Videos include *Seizure Disorders and the School I* (Elementary); *Seizure Disorders and the School II* (Secondary); and *Seizure First Aid.*

Epilepsy clients throughout the U.S. are served by affiliated Epilepsy Foundation offices in nearly 100 communities, including:

- **Epilepsy Foundation of Massachusetts and Rhode Island**
  540 Gallivan Boulevard, 2nd Floor
  Boston, MA 02124-5401
  Phone: 888-576-9996 or 617-506-6041
  Website: http://www.epilepsymassri.org

Epilepsy Institute
257 Park Avenue South, Suite 302
New York, NY 10010
Phone: 212-677-8550
Fax: 212-677-5825
E-mail: website@epilepsyinstitute.org
Website: http://www.epilepsyinstitute.org

Epilepsy in Young Children
Website: http://www.kidsepilepsy.com/
This support site is for parents/guardians and other caregivers of children with epilepsy.

Parents Against Childhood Epilepsy (PACE)
7 East 85th Street, Suite A3
New York, NY 10028
Phone: 212-665-PACE (7223)
Fax: 212-327-3075
E-mail: pacenyemail@aol.com
Website: http://www.paceusa.org
PACE was founded by a group of parents in response to their experiences in caring for the medical, physical, social, educational, developmental, and emotional needs of their children who suffer from epilepsy and severe seizure disorders. In addition to funding research, this not-for-profit organization provides support, education, and information-sharing for families and caregivers of children who suffer from epilepsy.

Sickle Cell Anemia

New England Regional Newborn Screening Program
Sickle Cell Division
State Laboratory Institute
305 South Street
Jamaica Plain, MA 02130
Phone: 617-522-3700 x457

Spina Bifida (Myelodysplasia)

Arnold-Chiari Family Network
c/o Kevin and Maureen Walsh
67 Spring Street
Weymouth, MA 02188

Massachusetts Spina Bifida Association
456 Lowell Street
Peabody, MA 01960-2741
Phone: 781-531-6789
E-mail: apbcon@mindspring.com

National Resource Center on Spina Bifida
Spina Bifida Association of America
4590 MacArthur Boulevard NW, Suite 250
Washington, DC 20007-4226
Phone: 800-621-3141 or 202-944-3285
E-mail: sbaa@sbaa.org
Website: http://www.sbaa.org
The National Resource Center on Spina Bifida provides confidential information and referral services, responding to questions about health care, education, employment, benefits, and more. It is the only clearinghouse of information exclusively dedicated to spina bifida. The site contains fact sheets, FAQs, links, and publications.

NERGG, Inc. (New England Regional Genetics Group)
(See listing under Massachusetts Agencies and Organizations (General).)

RESOURCES: READING MATERIAL FOR CHILDREN AND TEENS

4–8 years:

- Anderson, M. E. (2000). *Taking cerebral palsy to school*. Plainview, NY: Jayjo Books.
- Carpenter, P. (2000). *Sparky's excellent misadventures: My A.D.D. journal.* Washington, DC: Magination Press.
- Carter, A. R. & Carter, C. S. (1998). *Seeing things my way.* Morton Grove, IL: Albert Whitman & Company.
- Carter, A. R. & Carter, C. S. (2000). *Stretching ourselves: Kids with cerebral palsy.* Morton Grove, IL: Albert Whitman & Company.
- Carter, A. R. & Carter, C. S. (2001). *I'm tougher than diabetes!* Morton Grove, IL: Albert Whitman & Company.
- Carter, S. M., Carter, A. R. & Young, D. (1999). *I'm tougher than asthma!* Morton Grove, IL: Albert Whitman & Company.
- Galvin, M. & Ferraro, S. (2001). *Otto learns about his medicine: A story about medication for children with ADHD* (3rd ed.). Washington, DC: Magination Press.
- Gosselin, K. (1996). *Zooallergy: A fun story about allergy and asthma triggers.* Plainview, NY: Jayjo Books.
- Gosselin, K. (1998). *Taking asthma to school* (2nd ed.). Plainview, NY: Jayjo Books.
- Gosselin, K. (1998). *Taking diabetes to school* (2nd ed.). Plainview, NY: Jayjo Books.
- Heelan, J. R. & Simmonds, N. (2000). *Rolling along: The story of Taylor and his wheelchair.* Atlanta, GA: Peachtree Publishers.
- Heelan, J. R. & Simmonds, N. (2002). *Can you hear a rainbow?: The story of a deaf boy named Chris.* Atlanta, GA: Peachtree Publishers.
- Henry, C. S., Gosselin, K. & Schader, K. (2001). *Taking cancer to school.* Plainview, NY: Jayjo Books.
- Monroe, R. P. (1998). *When will I feel better?: Understanding chronic illness.* St. Louis, MO: Concordia Publishing House.
- Moss, D. M. & Schwartz, C. (2006). Updated re-release. *Shelley, the hyperactive turtle.* Bethesda, MD: Woodbine House.
- Smith, N. (2002). *Allie the allergic elephant: A children's story of peanut allergies.* Colorado Springs, CO: Jungle Communications.
- Thomas, P. & Harker, L. (2002). *Don't call me special: A first look at disability.* Hauppauge, NY: Barron's Educational Series.

9–12 years:

- Esherick, J. (2004). *The journey toward recovery: Youth with brain injury.* Broomall, PA: Mason Crest Publishers.
- Gosselin, K. (1998). *The ABC's of asthma: An asthma alphabet book for kids of all ages*. Plainview, NY: Jayjo Books.
- Gosselin, K. (1999). *Trick-or-treat for diabetes: A Halloween story for kids living with diabetes.* Plainview, NY: Jayjo Books.
- Gosselin, K. (2002). *Taking seizure disorders to school: A story about epilepsy* (2nd ed.). Plainview, NY: Jayjo Books.
- Huegel, K. & Verdick, E. (1998). *Young people and chronic illness: True stories, help, and hope*. Minneapolis, MN: Free Spirit Publishing.
- Jackson, L. & Attwood, T. (2002). *Freaks, geeks and Asperger Syndrome: A user guide to adolescence.* New York: Routledge.
- Libal, A. (2004). *Chained: Youth with chronic illness.* Broomall, PA: Mason Crest Publishers.
- Libal, J. (2004). *Finding my voice: Youth with speech impairment.* Broomall, PA: Mason Crest Publishers.
- McAuliffe, A. (1998). *Growing up with diabetes: What children want their parents to know.* New York: Juvenile Diabetes Foundation Library.
- Nadeau, K. G., Dixon, E. B. & Beyl, C. (2004). *Learning to slow down & pay attention: A book for kids about ADD* (3rd ed.). Washington, DC: Magination Press.

- Quinn, P. O. & Stern, J. M. (2001). *Putting on the brakes: Young people's guide to understanding Attention Deficit Hyperactivity Disorder.* Washington, DC: Magination Press.
- Weiner, E. (1999). *Taking food allergies to school.* Plainview, NY: Jayjo Books.
- Weiss, J. H. (2003). *Breathe easy: Young people's guide to asthma* (2nd ed.). Washington, DC: Magination Press.

Young Adult:

- Kaufman, M. (1995). *Easy for you to say: Q&As for teens living with chronic illness or disability.* Toronto, ON: Key Porter Books.
- Kent, D. & Quinlan, K. A. (1997). *Extraordinary people with disabilities.* Chicago, IL: Children's Press.
- Lutkenhoff, M. & Oppenheimer, S. G. (1997). *Spinabilities: A young person's guide to spina bifida.* Bethesda, MD: Woodbine House.

REFERENCES

American Academy of Pediatrics, Committee on Pediatric Emergency Medicine. (1999). Emergency preparedness for children with special health care needs. *Pediatrics, 104*(4), e53. PMID: 10506278.

American Association of Diabetes Educators. (2000). Management of children with diabetes in the school setting. *Diabetes Educator, 26*(1), 32–35.

American Association of Diabetes Educators. (1994). AADE position statement: Diabetes control and complications trial. *Diabetes Educator, 20*(2), 106–8.

American Diabetes Association. (2000). Type 2 diabetes in children and adolescents: Consensus statement. *Diabetes Care, 23*, 381–389.

American Diabetes Association. (2004). Diabetes care in the school and day care setting. *Diabetes Care, 27*, S122–S128.

American Lung Association and the National Association of School Nurses. (2003). *Report on the results of the asthma awareness survey*. New York: Author. Retrieved in 2006 from http://www.nasn.org/Portals/0/resources/asthma_survey.pdf.

Anderson, M. E., Freas, M. R., Wallace, A. S., Kempe, A., Gelfand, E. W. & Liu, A. H. (2004). Successful school-based intervention for inner-city children with persistent asthma. *Journal of Asthma, 41*(4), 445–453. PMID: 15281330.

Arnold, M. & Silkworth, C. (Eds.). (1999). *The school nurse's source book of individualized healthcare plans, vol. II*. North Branch, MN: Sunrise River Press.

Aspel, N., Bettis, G., Quinn, P., Test, D. W. & Wood, W. M. (1999). A collaborative process for planning transition services for all students with disabilities. *Career Development for Exceptional Individuals, 22*(1), 21–42.

Barrett, J. C. (2001). Teaching teachers about school health emergencies. *Journal of School Nursing, 17*(6), 316–322.

Barrett, J. C. (2002). A school-based care management service for children with special needs. *Family and Community Health, 23*(2), 36–42.

Barrett, J. C., Goodwin, D. K. & Kendrick, O. (2002). Nursing, food service, and the child with diabetes. *Journal of School Nursing, 18*(3), 150–156.

Bednarz, P. K. (1998). The Omaha system: A model for describing school nurse case management. *Journal of School Nursing, 14*(3), 24–30.

Begali, V. (1997). *Head injury in children and adolescents* (2nd ed.). Indianapolis, IN: Wiley and Sons.

Berg, J., Tichacek, M. J. & Theodorakis, R. (2004). Evaluation of an educational program for adolescents with asthma. *Journal of School Nursing, 20*(1), 29–35. PMID: 14731108.

Bierschbach, J. L., Cooper, L. & Liedl, J. A. (2004). Insulin pumps: What every school nurse needs to know. *Journal of School Nursing, 20*(2), 117–123. Review. PMID: 15040760.

Bloomgarden, Z. T. (2004). Type 2 diabetes in the young: The evolving epidemic. *Diabetes Care, 27*, 998–1010.

Blum, M. (2002). Are school nurses using the recommendations of the Diabetes Control and Complications Trial in the care of students with diabetes? *Journal of School Nursing, 18*(3), 138–143.

Brodtkorb, E., Aamo, T., Henriksen, O. & Lossius, R. (1999). Rectal diazepam: Pitfalls of excessive use in refractory epilepsy. *Epilepsy Research, 35*(2), 123–133.

Brown, P. & Kent, M. (2000). *Guidelines for the care of students with diabetes in the school setting.* Trenton, NJ: New Jersey Department of Education.

Brown, R. T. (Ed.). (1999). *Cognitive aspects of chronic illness in children.* New York: Guilford Publications, Inc.

Bundy, A. C., Lane, S. J., Fisher, A. G. & Murray, E. A. (2002). *Sensory integration: Theory and practice* (2nd ed.). Philadelphia: F. A. Davis Company.

Burdick, J., Chase, H. P., Slover, R. H., Knievel, K., Scrimgeour, L., Maniatis, A. K. & Klingensmith, G. J. (2004). Missed insulin meal boluses and elevated hemoglobin A1c levels in children receiving insulin pump therapy. *Pediatrics, 113*(3 Pt 1), e221–224.

Calabrese, B. J., Nanda, J. P., Huss, K., Winkelstein, M., Quartey, R. I. & Rand, C. S. (1999). Asthma knowledge, roles, functions, and educational needs of school nurses. *Journal of School Health, 69*(6), 233–238. PMID: 10461282.

Centers for Disease Control and Prevention. (2002). *State and Local Area Integrated Telephone Survey (SLAITS) of children with special health care needs*. Retrieved in 2006 from http://www.cdc.gov/nchs/slaits.htm.

Centers for Disease Control and Prevention, Division of Adolescent and School Health. (2005). *Resources for addressing asthma in schools*. Atlanta: National Center for Chronic Disease Prevention and Health Promotion. Retrieved in 2006 from http://www.cdc.gov/healthyyouth/asthma/pdf/pubs-links.pdf.

Centers for Disease Control and Prevention & National Task Force on Fetal Alcohol Syndrome and Fetal Alcohol Effect. (2002). Defining the national agenda for fetal alcohol syndrome and other prenatal alcohol-related effects. *Morbidity and Mortality Weekly Report, 51*(RR14), 9–12.

Chadwick, D. J., II. (2003). Febrile seizures: An overview. *Minnesota Medicine, 86*(3), 41–43.

Ciocci, S. R. (2002). Auditory processing disorders: An overview. *ERIC Digest,* December, ED474303. Arlington, VA: ERIC Clearinghouse on Disabilities and Gifted Education.

Clarke, W. (1999). Advocating for the child with diabetes. *Diabetes Spectrum, 12*, 230–236.

Closs, A. (1999). *The education of children with medical conditions.* Oxfordshire, UK: Taylor & Francis Group.

Cooley, W. C., & McAllister, J. W. (2004). Building medical homes: Improvement strategies in primary care for children with special health care needs. *Pediatrics, 113*(5 Suppl), 1499–1506. PMID: 15121918.

Denehy, J., & Poulton, S. (1999). The use of standardized language in individualized healthcare plans. *Journal of School Nursing, 15*(1), 38–45. PMID: 10347448.

DiMatties, M. E. & Sammons, J. H. (2003). Understanding sensory integration. *ERIC Digest,* May, ED478564. Arlington, VA: ERIC Clearinghouse on Disabilities and Gifted Education.

Dott, M. M., Kelly, M. M. & Boyle, C. A. (2002). Birth defects, developmental disabilities, and health for people with disabilities: CDC activities in Atlanta. *Atlanta Medicine, 76*(3), 21–24.

Esperat, M. C., Moss, P. J., Robert, K. A., Kerr, L. & Green, A. E. (1999). Special needs children in the public schools: Perceptions of school nurses and school teachers. *Issues in Comprehensive Pediatric Nursing, 22*(4), 167–182. PMID: 10827605.

Fisgin, T., Gurer, Y., Tezic, T., Senbil, N., Zorlu, P., Okuyaz, C. & Akgun, D. (2002). Effects of intranasal midazolam and rectal diazepam on acute convulsions in children: Prospective randomized study. *Journal of Child Neurology, 17*(2), 123–126.

Fisher, R. S. & Ho, J. (2002). Potential new methods for antiepileptic drug delivery. *CNS Drugs, 16*(9), 579–593.

Franz, M. (Ed.). (2003). *A core curriculum for diabetes educators* (5th ed.). Chicago: American Association of Diabetes Educators.

Fredrickson, L. & Griff, M. (2000). *Pumper in the school, insulin pump guide for school nurses, school personnel and parents: MiniMed Professional Education, your clinical coach* (1st ed.). Northridge, CA: MiniMed.

Freeman, J. M., Vining, E. P. G. & Pillas, D. J. (2003). *Seizures and epilepsy in childhood: A guide for parents* (3rd ed.). Baltimore, MD: Johns Hopkins University Press.

Furney, K. & Salembier, G. (2000). Rhetoric and reality: A review of the literature on parent and student participation in the IEP and transition planning process. In D. R. Johnson & E. J. Emanuel (Eds.), *Issues influencing the future of transition programs and services in the United States* (pp. 111–126). Minneapolis: University of Minnesota, Institute on Community Integration.

Gelfman, M. (2001). Special education law. In N. Schwab & M. Gelfman (Eds.), *Legal issues in school health services: A resource for school administrators, school attorneys, and school nurses* (pp. 373–397). North Branch, MN: Sunrise River Press.

Harris, L. (2002). Asthma education for middle school students and staff. *Journal of School Nursing, 18*(2), 117–121.

Hawley, C. A., Ward, A. B., Magnay, A. R. & Mychalkiw, W. (2004). Return to school after brain injury. *Archives of Disease in Childhood, 89*(2), 136–142. PMID: 14736628.

Hayes-Bohn, R., Neumark-Sztainer, D., Mellin, A. & Patterson, J. (2004). Adolescent and parent assessments of diabetes mellitus management at school. *Journal of School Health, 74*(5), 166–169.

Hazinski, M. F., Markenson, D., Neish, S., Gerardi, M., Hootman, J., Nichol, G., et al. (2004). Response to cardiac arrest and selected life-threatening medical emergencies: The medical emergency response plan for schools. *Pediatrics, 113*, 155–168.

Heller, K.W. & Tumlin, J. (2004). Using expanded individualized health care plans to assist teachers of students with complex health care needs. *Journal of School Nursing, 20*(3), 150–160. PMID: 15147227.

Henderson, K. (2001). Overview of ADA, IDEA, and Section 504. *ERIC Digest,* March, ED452627. Arlington, VA: ERIC Clearinghouse on Disabilities and Gifted Education.

Jones, S. E. & Wheeler, L. (2004). Asthma inhalers in schools: Rights of students with asthma to a free appropriate education. *American Journal of Public Health, 94*(7), 1102–1108. Retrieved in 2006 from http://www.ajph.org.

Kliebenstein, M. A. & Broome, M. E. (2000). School re-entry for the child with chronic illness: Parent and school personnel perceptions. *Pediatric Nursing, 26*(6), 579–582. PMID: 12026357.

Kollipara, S. & Warren-Boulton, E. (2004). Diabetes and physical activity in school. *School Nurse News, 21*(3), 12–16.

Kriel, R. L., Cloyd, J. C., Pellock, J. M., Mitchell, W. G., Cereghino, J. J. & Rosman, N. P. (1999). Rectal diazepam gel for treatment of acute repetitive seizures. *Pediatric Neurology, 20*(4), 282–288.

Kwasman, A., Tinsley, B. & Thompson, S. (2004). School nurses' knowledge and beliefs about the management of children with ADD. *Journal of School Nursing, 20*(1), 22–28.

Lang, D. M., Butz, A. M., Duggan, A. K. & Serwint, A. R. (2004). Physical activity in urban school-aged children with asthma. *Pediatrics, 113*, e341–346.

Larson, G. (1988). *Managing the school age child with a chronic health condition: A practical guide for schools, families and organizations* (2nd ed.). Minneapolis: DCI Publishing.

Lash, M. H. (2000). *Resource guide: Children, adolescents and young adults with brain injuries.* Wake Forest, NC: Lash and Associates Publishing/Training.

Laver Bierschbach, J., Cooper, L. & Liedl, J. A. (2004). Insulin pumps: What every school nurse needs to know. *Journal of School Nursing, 20*(2), 117–123.

Lollar, D. J. (2002). Framing and using measures of chronic conditions in childhood: A public health perspective. *Ambulatory Pediatrics, 2*, 24–25.

Lundholm-Brown, J. & Dildy, M. E. (2001). Attention-deficit/hyperactivity disorder: An educational cultural model. *Journal of School Nursing, 17*(6), 307–315.

Marschilok, C. (2004). Update on insulin pump therapy. *School Nurse News, 21*(2), 10–11.

Mars-Proietti, L. (Ed.). (2005). *Complete directory for people with disabilities 2006: A comprehensive source book for individuals and professionals* (14th ed.). Millerton, NY: Grey House Publishing.

McCarthy, A. M., Kelly, M. W. & Reed, D. (2000). Medication administration practices of school nurses. *Journal of School Health, 70*(9), 371–376.

McClowry, D. P. (2000). Development and assessment of school-age and adolescent children with human immunodeficiency virus. *Seminars in Speech and Language, 21*(1), 49–60. PMID: 10768794.

McIntyre, C. L., Sheetz, A., Carroll, C. & Young, M. (2005) Administration of epinephrine for life threatening allergic reactions in school settings. *Pediatrics, 116*(5), 1134–1140.

McLean, D. E., Bowen, S., Drezner, K., Rowe, A., Sherman, P., Schroeder, S., et al. (2004). Asthma among homeless children: Undercounting and undertreating the underserved. *Archives of Pediatrics & Adolescent Medicine, 158*, 244–249.

McPherson, M., Weissman, G., Strickland, B. B., van Dyck, P. C., Blumberg, S. J. & Newacheck, P. W. (2004). Implementing community-based systems of services for children and youths with special health care needs: How well are we doing? *Pediatrics, 113*(5 Suppl), 1538–1544. PMID: 15121923.

Meng, A. & McConnell, S. (2003). Asthma education: special applications for the school-age child. *Nursing Clinics of North America, 38*(4), 653–664. PMID: 14763367.

Mentro, A. M. (2003). Health care policy for medically fragile children. *Journal of Pediatric Nursing, 18*(4), 225–232. PMID: 12923733.

Miller, M. M. (2003). Insulin pump therapy. An overview. *Advance for Nurse Practitioners, 11*(11), 61–66.

Morningstar, M., Tramill-Kleinhammer, J. P. & Lattin, D. L. (1999). Using successful models of student-centered transition planning and services for adolescents with disabilities. *Focus on Exceptional Children, 31*(9), 1–19.

Msall, M. E., Avery, R. C., Tremont, M. R., Lima, J. C., Rogers, M. L. & Hogan, D. P. (2003). Functional disability and school activity limitations in 41,300 school-age children: Relationship to medical impairments. *Pediatrics, 111*(3), 548–553. PMID: 12612235. Full text retrieved in 2006 from http://www.pediatrics.org.

Nabors, L., Lehmkuhl, H., Christos, N. & Andreone, T. L. (2003). Children with diabetes: Perceptions of supports for self-management at school. *Journal of School Health, 73*(6), 216–221.

National Association of School Nurses. (2002). *Position statement: Case management of children with special health care needs*. Castle Rock, CO: Author. Retrieved in 2006 from http://www.nasn.org/positions/casemanagement.htm.

National Association of School Nurses & American Nurses Association. (2001). *Scope and standards of professional school nursing practice.* Washington, DC: American Nurses Publishing.

National Asthma Education and Prevention Program: School Subcommittee; National School Boards Association; American School Health Association; American Diabetes Association; American Academy of Pediatrics; Food Allergy and Anaphylaxis Network & Epilepsy Foundation. (2003). Students with chronic illnesses: Guidance for families, schools, and students. *Journal of School Health, 73*(4), 131–132. PMID: 12728609.

National Diabetes Education Program. (2003). *Helping the student with diabetes succeed: A guide for school personnel*. Bethesda, MD: Author. Retrieved in 2006 http://www.ndep.nih.gov.

Neuharth-Pritchett, S. & Getch, Y. Q. (2001). Asthma and the school teacher: The status of teacher preparedness and training. *Journal of School Nursing, 17*(6), 323–328. PMID: 11804409.

Noland, R. M. & Gabriels, R. L. (2004). Screening and identifying children with autism spectrum disorders in the public school system: The development of a model process. *Journal of Autism and Developmental Disorders, 34*(3), 265–277. PMID: 15264495.

Olson, A. L., Seidler, A. B., Goodman, D., Gaelic, S. & Nordgren, R. (2004). School professionals' perceptions about the impact of chronic illness in the classroom. *Archives Pediatric & Adolescent Medicine, 158*(1), 53–58. PMID: 14706959.

Ornelas, D. (1999). *Individualized healthcare plans: The school nurse's source book of individualized healthcare plans* (vol. 2). North Branch, MN: Sunrise River Press.

Palfrey, J. S., Sofis, L. A., Davidson, E. J., Liu, J., Freeman, L. & Ganz, M. L. (2004). Pediatric alliance for coordinated care: Evaluation of a medical home model. *Pediatrics, 113*(5 Suppl), 1507–1516. PMID: 15121919.

Perry, C. S. & Toole, K. A. (2000). Health service applications: Impact of school nurse case management on asthma control in school-aged children. *Journal of School Health, 70*(7), 303–304.

Pianosi, P. T. & Davis, H. S. (2004). Determinants of physical fitness in children with asthma. *Pediatrics, 113*, e225–229.

Porter, S., Freeman, L. & Reeves Griffin, L. (2000). *Transition planning for adolescents with special health care needs and disabilities: A guide for health care providers.* Boston, MA: Institute for Community Inclusion/UAP at Children's Hospital and Massachusetts Department of Public Health.

Porter, S., Haynie, M., Bierle, T., Heintz Caldwell, T. & Palfrey, J. S. (1997). *Children and youth assisted by medical technology in educational settings: Guidelines for care* (2nd ed.). Baltimore, MD: Paul H. Brookes Publishing Co.

Price, V., Murphy, S. O. & Cureton, V. Y. (2004). Increasing self-efficacy and knowledge through a seizure education program for special education teachers. *Journal of School Nursing, 20*(1), 43–49. PMID: 14731106.

Quarry-Horn, J. L., Evans, B. J. & Kerrigan, J. R. (2003). Type 2 diabetes mellitus in youth. *Journal of School Nursing, 19*(4), 195–203.

Reading, R., Jones, T. & Upton, C. (2003). Emergency asthma inhalers in school. *Archives of Disease in Childhood, 88*(5), 384–386. PMID: 12716703. Retrieved in 2006 from http://www.archdischild.com.

Sammons, J. H. (2003). Understanding sensory integration. *ERIC Digest,* May, ED478564. Arlington, VA: ERIC Clearinghouse on Disabilities and Gifted Education.

Santilli, N. (2001). *Students with seizures: A manual for school nurses* (2nd ed.). Landover, MD: Epilepsy Foundation of America.

Schmidt, L. M. (2003). Pediatric end-of-life care: Coming of age? *Caring, 22*(5), 20–22. PMID: 12802854.

Sedgwick, J. (1999). Using individualized healthcare plans with 504 plans and accommodations. In M. K. Haas (Ed.), *The school nurse's source book of individualized healthcare plans* (Vol. 2), 41–53. North Branch, MN: Sunrise River Press.

Sheetz, A. & Mcintyre, L. (2005). Anaphylaxis experienced by school children offers opportunities for ED nurse: School nurse collaboration. *Journal of Emergency Nursing, 31* (1), 102–104.

Sheetz, A. H., Goldman, P. G., Millett, K., Franks, J. C., McIntyre, C. L., Carroll, C. R., et al. (2004). Guidelines for managing life-threatening food allergies in Massachusetts schools. *Journal of School Health, 74*(5), 155–160. PMID: 15283495.

Sirven, J. I. & Waterhouse, E. (2003). Management of status epilepticus. *American Family Physician, 68*(3), 469–476.

Skyler, J. S. (Ed.). (1998). *Medical management of type 1 diabetes* (3rd ed.). Alexandria, VA: American Diabetes Association.

Smith, A. J., Jr., Armijo, E. J. & Stowitschek, J. J. (1997). Current applications of case management in schools to improve children's readiness to learn. *Journal of Case Management, 6*(3), 105–113.

Smith, S. (2001). Involving parents in the IEP process. *ERIC Digest,* June, E611, ED455658. Arlington, VA: ERIC Clearinghouse on Disabilities and Gifted Education.

Storms, J., O'Leary, E. & Williams, J. (2000). *Transition requirements: A guide for states, districts, schools, universities and families.* Minneapolis: University of Minnesota, Institute on Community Integration. University of Minnesota Extension Services.

Strawhacker, M. T. & Wellendorf, J. (2004). Caring for children with cystic fibrosis: A collaborative clinical and school approach. *Journal of School Nursing 20*(1), 5–15. PMID: 14731111.

Strickland, B., McPherson, M., Weissman, G., van Dyck, P., Huang, Z. J. & Newacheck, P. (2004). Access to the medical home: Results of the National Survey of Children with Special Health Care Needs. *Pediatrics, 113*(5 Suppl), 1485–1492. PMID: 15121916.

Szilagyi, P. G. (2003). Care of children with special health care needs. *Future Child, 13*(1), 137–151. PMID: 14503458.

Taras, H., Wright, S., Brennan, J., Campana, J. & Lofgren, R. (2004). Impact of school nurse case management on students with asthma. *Journal of School Health, 74*(6), 213–219. PMID: 15468525.

Tinkelman, D. & Schwartz, A. (2004). School-based asthma disease management. *Journal of Asthma, 41*(4), 455–462. PMID: 15281331.

U.S. Department of Education Office of Special Education and Rehabilitative Services. (2002). *A new era: Revitalizing special education for children and their families*. Washington, DC: Author. Retrieved in 2006 from http://www.ed.gov/inits/commissionsboards/whspecialeducation/.

van Dyck, P. C., McPherson, M., Strickland, B. B., Nesseler, K., Blumberg, S. J., Cynamon, M. L., et al. (2002). The national survey of children with special health care needs. *Ambulatory Pediatrics, 2*(1), 29–37. PMID: 11888436.

Velsor-Friedrich, B., Vlasses, F., Moberley, J. & Coover, L. (2004). Talking with teens about asthma management. *Journal of School Nursing, 20*(3), 140–148.

Weiss, C., Muñoz-Furlong, A., Furlong, T. J. & Arbit, J. (2004) Impact of food allergies on school nursing practice. *Journal of School Nursing, 20*(5), 268–278.

Weiss, K. B. & Sullivan, S. D. (2001). The health economics of asthma and rhinitis: Assessing the economic impact. *Journal of Allergy and Clinical Immunology,* 1073–1078.

Weller, L., Fredrickson, D. D., Burbach, C., Molgaard, C. A. & Ngong, L. (2004). Chronic disease medication administration rates in a public school system. *Journal of School Health, 74*(5), 161–165.

Williams, D. (2004). Children's special services: providing services to families and children with special healthcare needs. *Tennessee Medicine, 97*(1), 43. PMID: 14968689.

Wind, W. M., Schwend, R. M. & Larson, J. (2004). Sports for the physically challenged child. *Journal of the American Academy of Orthopaedic Surgeons, 12*(2), 126–137. PMID: 15089086.

Wolff Heller, K. & Tumlin, J. (2004). Using expanded individualized health care plans to assist teachers of students with complex health care needs. *Journal of School Nursing, 20*(3), 150–160.

Note: A PMID number indicates the article has been indexed by PubMed for MEDLINE.

EXHIBITS

Exhibit 7-1 Comparison of IDEA and Section 504

Exhibit 7-2 IHCP Medical Information Form

Exhibit 7-3 Individualized Health Care Plan Checklist

Exhibit 7-4 Individualized Health Care Plan

Exhibit 7-5 Important Personnel

Exhibit 7-6 Background Information

Exhibit 7-7 Procedure Information Sheet

Exhibit 7-8 Possible Problems

Exhibit 7-9 Individualized Health Care Plan

Exhibit 7-10 Daily Log

Exhibit 7-11 Emergency Plan

Exhibit 7-12 Emergency Telephone Procedure

Exhibit 7-13 Emergency Information

Exhibit 7-14 Parent/Guardian Authorization for Specialized Health Care

Exhibit 7-15 Physician's Order for Specialized Health Care Procedure

Exhibit 7-1 Comparison of IDEA and Section 504

IDEA	Section 504
Costs for IDEA services cannot be a factor in decision making.	At the primary and secondary school level, 504 accommodations must provide a free appropriate public education equal to that provided to nondisabled students. [1]
Special education and related services.	General and special education.
Parental and student involvement is mandated.	Parental and student involvement is **not** mandated.
Students with disabilities.	Students with a physical or mental impairment that substantially limits a major life activity or who have a record of or are regarded as having such an impairment.
Individualized Education Plan (IEP).	504 Plan.
Comprehensive assessment, including formalized evaluations to determine needs as identified in IDEA.	Does not specify process of assessment.
Applies to elementary and secondary educational settings.	Applies to elementary, secondary, and postsecondary education settings and work settings.
Formalized structure and process specified in the legislation.	Structure and process are unspecified and ambiguous in the legislation.
Due process procedure within school setting for complaints. Appeal to BSEA. Complaint to Department of Education.	Due process within school system. Appeal to BSEA. Complaint to Department of Education. Complaint to Office for Civil Rights in U.S. Department of Education.
Complaints monitored by state and federal departments of education.	Complaints monitored by local school district and state department of education.
Accommodations, services, and supports to provide Free Appropriate Public Education (FAPE) to enable student to make effective educational progress within least restrictive educational setting.	Accommodations, services, and supports to provide student with equal access to the educational program and provide FAPE designed to meet the educational needs of students with disabilities as adequately as the needs of nondisabled students.
Transition services must be provided, beginning at age 14.	Does not specify provisions of transition services.
Federal funds provided to states for implementation of IDEA.	No federal funds are provided for implementation of 504 plans.
Statute sets forth requirements; state educational agencies oversee compliance by local school districts.	Section 504 of Rehabilitation Act of 1973 imposes duties on all recipients of federal funding. Similar requirements imposed on public and private entities by Americans with Disabilities Act of 1990.
IEP plan is reevaluated every 3 years.	No time period regarding reevaluation is specified.

Adapted from:
Anderson, W., Chitwood, S., & Hayden, D. (1997). Negotiating the special education maze: A guide for parents and teachers (3rd ed.). Bethesda, MD: Woodbine House; deFur, S. & Patton, J. (1999). Transition and school-based services: Interdisciplinary perspective for enhancing the transition process. Austin, TX: PRO-ED; and Smith, T. & Patton, J. (1998). Section 504 and public schools. Austin, TX: PRO-ED.

[1] Postsecondary schools are not required to provide accommodations that alter the fundamental nature of the program or that impose undue hardship.

Exhibit 7-2 IHCP Medical Information Form

Clinician: _____	**Student name:** _____
Contact person: _____	**School:** _____
Facility: _____	**Date:** _____
Phone: _____	**Previous Update:** _____ ***(shall be updated at least annually)***
Emergency Phone: _____	

The purpose of this form is to provide accurate information to the school about an individual student's medical needs. It is a prerequisite for any accommodations. For ongoing communication to occur, both the parent(s)/guardian(s) and the health care provider must sign the release of medical information authorization on the back of the form, as per the federal regulations concerning sharing of educational and health information.

Conditions: _____ _____ _____ _____ _____ _____ _____ _____ Allergies: _____ _____ _____	**Treatment Plan:** _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
Equipment: _____ _____ _____ _____ Procedures: _____ _____ _____ _____ _____ _____ ❒ No Equipment ❒ No Procedures	**Activity Level:** ❒ **No Restrictions** **Restrictions: (check all that apply)** ❒ **No contact sports** ❒ **No exertion other than walking** ❒ **No exposure to cold air (such as at recess, bus stop, physical education)** ❒ **No stairs** ❒ **Other (specify):** _____ _____
In School Medications: ❒ **YES – Authorization attached *** ❒ **NO – Medications not given in school** **** State regulations require parent/ guardian and physician authorization of nurse administration of school medications***	**Other Medications:** ***(Please list all medications child takes, even if not given during school hours.)*** _____ _____ _____ _____ _____

Medical Transportation:

- ❒ **Door to door (child has no exercise tolerance)** **duration:** _____
- ❒ **Corner to corner (limited exercise tolerance)** **duration:** _____
- ❒ **Special vehicle (wheelchair)**
- ❒ **PFT's if asthmatic: please attach last pulmonary function testing** _____

Medical transportation is provided for medical reasons only. ***Safety issues (i.e., bullies, bus stop location, walking distance, parental/guardian illness) require other solutions. Please discuss this with the school nurse.***

Other Adaptations:

Tutoring Plan: (anticipated total absence of > 2 weeks/yr. for chronic illnesses such as sickle cell, cystic fibrosis, etc.)

_____

_____

Special Diet: _____

_____

_____

Access accommodations: (e.g., bathroom, elevator, etc.) _____

_____

_____

Primary Care Provider Signature: _____

Authorization for Healthcare Provider and School Nurse to Share Information:
I authorize my child's school nurse to assess my child as regards his/her special health care needs and to discuss these needs with my child's primary care provider, as needed through the school year. I understand this is for the purpose of generating a health care plan for my child. I understand I may withdraw this authorization at any time and that this authorization must be renewed annually.

_____	_____	_____
Parent/Guardian Signature	Print Name	Date

School Use Only

❒ **USS team involved** **date presented:** _____ ❒ **Action taken:** _____ _____ _____ _____ _____ _____ _____ ❒ **Transportation provided** ❒ **Other accommodations provided** ❒ **Personnel trained (if applicable)** ❒ **Parent/Guardian authorization** **Feedback to clinician given**	**ATTACHMENTS:** ❒ **Emergency Plan** ❒ **Medication Plan** ❒ **IEP Health Accommodations** ❒ **Field Trip Plan** **Child also has:** ❒ **IEP** ❒ **504 Plan** ❒ **Individual Psychosocial plan**

Reprinted by permission from the Boston Public Schools.

Exhibit 7-3 Individualized Health Care Plan Checklist

Preparation for Entry:

- ❑ Home Visit/Assessment _____ (date)
- ❑ Health History _____ (date)
- ❑ Planning Meetings _____ (date) _____ (date) _____ (date)
- ❑ Staff Training Meetings _____ (date) _____ (date) _____ (date)
- ❑ Educational Team Meetings _____ (date) _____ (date) _____ (date)

Health Care Plan Included in:

- ❑ Student Record _____ (date)
- ❑ Individualized Education Program _____ (date)
- ❑ Individualized Student Accomodation Plan _____ (date)

Health Care Plan

- ❑ Health Assessment _____ (date)
- ❑ Physician's Order for Medications _____ (date)
- ❑ Health Care Procedure _____ (date)
- ❑ Student-Specific Procedural Guidelines _____ (date)
- ❑ Procedural Skills Checklist _____ (date)
- ❑ Problems/Goals/Actions _____ (date)

Emergency Plan

- ❑ School _____ (date)
- ❑ In Transit _____ (date)

- ❑ Health Care Plan Reviewed by Physician _____ (date)
- ❑ Signed by Parent, Education Administrator, School Nurse/Health Care Coordinator _____ (date)

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Exhibit 7-4

_____
(School Nurse/Health Care Coordinator)

_____
(Education Coordinator)

Individualized Health Care Plan

Student Information:

_____ _____
(Name) (Birthdate)

_____ _____
(Parent/Guardian) (Address)

Mother/Guardian_____ _____
(Home telephone) (Work telephone)

Father/Guardian_____ _____
(Home telephone) (Work telephone)

_____ _____
(School) (Grade/Class)

Languages spoken: Student _____ Caregiver(s) _____

Immunizations:_____ _____
(date and type)_____ _____
_____ _____
_____ _____
_____ _____

Primary Physician:_____ Telephone:_____

Specialty Physicians:_____ Telephone:_____
_____ Telephone:_____
_____ Telephone:_____
_____ Telephone:_____
_____ Telephone:_____

In Emergency, Notify:

Name:_____Telephone:_____Relationship:_____
Name:_____Telephone:_____Relationship:_____

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Exhibit 7-5

Name:_____ Date:_____

Important Personnel

School contacts:

_____ _____

_____ _____

_____ _____

_____ _____

Direct caregivers:	Training: Student-specific	Training: General
_____	_____ (date)	_____ (date)
_____	_____ (date)	_____ (date)

Substitute caregivers/back-up staff:

_____	_____ (date)	_____ (date)
_____	_____ (date)	_____ (date)
_____	_____ (date)	_____ (date)
_____	_____ (date)	_____ (date)

Student-specific training done by:

_____ _____ (date)

General staff training done by:

_____ _____ (date)

Peer awareness training done by:

_____ _____ (date)

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Exhibit 7-6

Name:_____ Date: _____

Background Information

Brief health history:_____

Special health care needs of the student:_____

Other considerations:_____

Student participation in care:_____

Baseline status (i.e. skin color, activity/energy level, blood pressure, pulse, temperature, respirations):_____

Medication (dose, route, time):_____

Diet:_____

Allergies:_____

Transportation needs:_____

What is the transportation emergency communication system?_____

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Exhibit 7-7

Name:_____ Date:_____

Procedure Information Sheet

Procedure:_____

Frequency:_____ Times:_____

Position of student during procedure:_____

Ability of the student to assist/perform procedure_____
_____

Suggested setting for procedure:_____

Equipment (include make and model, when applicable):

Daily:_____ Emergency:_____
_____ _____
_____ _____
_____ _____
_____ _____

Checked by:_____ Checked by:_____

Storage:_____ Storage:_____

Maintenance:_____ Maintenance:_____

Home care company_____ Home care company_____

Child-specific techniques and helpful hints:_____
_____
_____
_____
_____

Procedural considerations and precautions:_____
_____
_____
_____
_____
_____

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Exhibit 7-8

Name:_____ Date:_____

Possible Problems

Observation	Reason	Action

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Exhibit 7-9

Name:_____ Date:_____

School Nurse:_____

Individualized Health Care Plan

Date	Health Need/Nursing Diagnosis	Goals	Action/Intervention	Evaluation

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Exhibit 7-10 Daily Log

Name: _____ School: _____

Procedure(s): _____

Parent/Guardian_____ Telephone Number_____

Date/Time	Procedure notes	Observations	Name

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Exhibit 7-11 Emergency Plan

Name:_____ Date:_____

Child-specific emergencies

If you see this	Do this

If an emergency occurs:

1. Stay with child.

2. Call or designate someone to call the nurse.

- **State who you are.**
- **State where you are.**
- **State the problem.**

3. The school nurse will assess the child and decide whether the emergency plan should be implemented.

4. If the school nurse is unavailable, the following staff members are trained to initiate the emergency plan:

_____

_____

_____

_____

_____

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Exhibit 7-12 Emergency Telephone Procedure

Name:_____ Date:_____

1. **Dial 911 and/or designated emergency response team.**
2. **State who you are:** " I am_____, a nurse/teacher/paraprofessional in the _____school."
3. **State where you are:**

   School name:_____

   Address:_____

   City:_____
4. **State what is wrong with student.**
5. **Give specific directions** (e.g. which school entrance should be used, location of student).
6. **Do not hang up.** Ask for the information to be repeated and provide any other necessary information. Hang up only when all information has been received and is correct.
7. **Notify people.**

   a. School principal or school official in charge of the building at that time:_____

   (telephone number)

   b. School back-up personnel:_____

   (Name) (telephone number)
8. **State the following:**

   "Emergency plan for _____is in effect."

   "The student is located_____."
9. **Do the following:**

   a. Meet the emergency response team.

   b. Direct the emergency response team to the emergency area.

   c. Call parents and other necessary individuals (including physician).

An adult should be designated to accompany student in the ambulance.

Hospital that the student should be transported to:_____.

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Exhibit 7-13 Emergency Information

Name:_____ Birthdate:_____

Address:_____ Telephone number_____

Mother/Guardian:_____

Home telephone number:_____ Work telephone number:_____

Emergency numbers:

Emergency medical response team:_____ Work telephone number:_____

Other contact:_____ Telephone number:_____

Health insurance:_____ Telephone number:_____

Fire:_____ Telephone number:_____

Police:_____ Telephone number:_____

Home care company:_____ Telephone number:_____

Ambulance:_____ Telephone number:_____

Gas company:_____ Telephone number:_____

Electric company:_____ Telephone number:_____

Preferred hospital:_____ Telephone number:_____

Local hospital emergency room:_____ Telephone number:_____

Primary physician:_____ Telephone number:_____

Dentist:_____ Telephone number:_____

Specialists:

_____ Telephone number:_____

_____ Telephone number:_____

_____ Telephone number:_____

_____ Telephone number:_____

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Exhibit 7-14

Parent/Guardian Authorization for Specialized Health Care

We (I), the undersigned, who are the parents/guardians of

_____

(Name) (Birthdate)

request the following health care service/service(s)_____

_____

_____

_____

_____

be administered to our child. We understand that a qualified designated person or persons will be performing the above-mentioned health care service. It is our understanding that in performing this service, the designated person or persons will be using a standardized procedure that has been approved by our physician.

_____

(Physician's Name) (Address) (Telephone number)

We will notify the school immediately if the health status of_____ changes, we change physicians, or there is a change or cancellation of the procedure.

We understand that the above procedure should be scheduled before or after school hours whenever possible.

Signature of parents/guardians:_____

_____

Address: _____

Telephone numbers _____

(Home) (Work)

Date:_____

This authorization form is from Pupil Personnel Services (1983). *Recommended Practices and Procedures Manual.* Chicago: Illinois State Board of Education; adapted by permission.

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Exhibit 7-15
Physician's Order for Specialized Health Care Procedure

Student's Name:_____ Birthdate: _____

Physician's Name (Print):_____

Address:_____

Address:_____

Telephone:_____

Signature:_____

Date:_____

- ☐ I have reviewed and approve the Health Care Plan as written.
- ☐ I have reviewed and approve the Health Care Plan with the indicated changes/suggestions.

Procedures:

Name	Frequency	Indications	Date of Order	Expiration Date

Reprinted by permission from *Children and Youth Assisted by Medical Technology in Educational Settings: Guidelines for Care, Second Edition,* edited by S. Porter, M. Haynie, T. Bierle, T.H. Caldwell, & J.S. Palfrey. © 1997 Paul H. Brookes Publishing Co., Baltimore. Users of this manual are granted permission to photocopy this page in the course of their service provision to students and their families. For all other uses, please contact Paul H. Brookes Publishing Co.: 1-800-638-3775 or www.brookespublishing.com.

Chapter 8

INFECTIOUS DISEASE CONTROL

Infectious Diseases

Massachusetts Law and Infectious Diseases

Infection Prevention and Control in the School Setting

Vaccine-Preventable Diseases

Diseases Spread Through the Intestinal Tract

Diseases Spread Through the Respiratory Tract

Diseases Spread Through Direct Contact

Diseases Spread Through Blood Contact

Sexually Transmitted Diseases

Diseases Spread from Animals to People (Zoonotic Diseases)

Sports-Associated Infectious Diseases

Infectious Disease Emergencies and Bioterrorism

Summary

Resources: General

Resources: Specific Diseases

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 8

INFECTIOUS DISEASE CONTROL

INFECTIOUS DISEASES

Infectious diseases are illnesses caused by specific organisms: viruses, bacteria, fungi, or parasites. Infectious diseases that can be spread from one individual to another are called *contagious* or *communicable* diseases. Contagious illnesses are among the major problems that school health programs face, causing absences and physical discomfort for students and staff.

This chapter describes infectious diseases and ways to prevent their spread. Responsibility for care of individual students rests with their families and their health care providers. In all cases, diagnosis, testing, treatment, and follow-up must be performed by properly trained, licensed, registered, or certified medical personnel.

Infectious disease control measures in schools include:

- preventing infection from spreading;
- requiring certain immunizations;
- reporting some illnesses;
- temporarily excluding some children who are ill or may be incubating communicable disease; and
- preparing to respond to outbreaks and emergencies of all types..

The diseases to be discussed in this chapter are divided into 8 categories:

1. Vaccine-Preventable Diseases
    - Chickenpox (Varicella)
    - Diphtheria
    - *Haemophilus influenzae* type b (Hib)
    - Hepatitis A (discussed in section “Diseases Spread Through the Intestinal Tract”)
    - Hepatitis B (discussed in section “Diseases Spread Through Blood Contact”)
    - Measles
    - Mumps
    - Pertussis
    - Pneumococcal disease (invasive)
    - Polio
    - Rubella
    - Tetanus

2. Diseases Spread Through the Intestinal Tract
    - *Salmonella*
    - *Shigella*
    - *Campylobacter*

- *E. coli* O157:H7
- *Giardia*
- Norovirus
- Pinworms
- Hepatitis A
- Hand, foot, and mouth syndrome (coxsackievirus)

3. Diseases Spread Through the Respiratory Tract
    - Respiratory viral illnesses (colds, influenza)
    - Group A streptococcal infections (strep throat, scarlet fever)
    - Fifth disease (erythema infectiosum)
    - Invasive meningococcal disease
    - Severe acute respiratory syndrome (SARS)
    - Meningitis
    - Infectious mononucleosis
    - Cytomegalovirus (CMV) infection
    - Tuberculosis (TB)

4. Diseases Spread Through Direct Contact
    - Impetigo
    - Ringworm (tinea)
    - Conjunctivitis (pinkeye)
    - Scabies
    - Pediculosis (head lice)
    - Herpes simplex infection

5. Diseases Spread Through Blood Contact
    - Hepatitis B
    - Hepatitis C
    - HIV/AIDS

6. Sexually Transmitted Diseases
    - Syphilis
    - Gonococcal infection (GC)
    - Chlamydia
    - Warts
    - Genital herpes

7. Diseases Spread from Animals to People (Zoonotic Diseases)
    - Rabies
    - Tickborne diseases
    - Arbovirus diseases (diseases spread by mosquitoes)

8. Sports-Associated Infectious Diseases

MASSACHUSETTS LAW AND INFECTIOUS DISEASES

Disease Reporting and Control

Some disease control activities are required by law or regulation. Chapter 111 of the Massachusetts General Laws (M.G.L.) includes sections governing the reporting and control of communicable diseases. The Code of Massachusetts Regulations (CMR) at 105 CMR 300.000 establishes specific reporting and surveillance requirements. In addition, the regulations outline the isolation and quarantine requirements for contacts of persons infected with certain communicable diseases in school and health care settings. These requirements include attendance guidelines for non-immune students when cases of vaccine-preventable diseases are reported. A list of the reportable diseases that are subject to control under general reporting and isolation and quarantine regulations are provided on the following web page:
http://www.mass.gov/dph/cdc/surveillance/rprtbldiseases_hcp.pdf.
These regulations carry the full force of the law. In addition, the following situations involve specific reporting requirements:

- Illnesses due to food consumption must be reported immediately to the local board of health or, if the local board of health cannot be reached immediately, to the Massachusetts Department of Public Health (DPH) at 617-983-6800;
- When vaccine-preventable diseases (e.g., measles, mumps, rubella, diphtheria, tetanus, pertussis, varicella, polio, *Haemophilus influenzae* type b (Hib), hepatitis B, or invasive *S. pneumoniae* in children under 18) occur, they must be reported to the local board of health; and
- Any cluster or outbreak of any unusual disease or illness must be reported to the local board of health (or to DPH if the local board of health is not available).

An on-call epidemiologist is available at DPH 24 hours a day, 7 days a week, at 617-983-6800.

Reporting

School nurses play a critical role in the identification and reporting of infectious diseases. School nurses may hear about a student's reportable disease from a variety of sources, including a local board of health, a child's medical provider, a parent/guardian, or an epidemiologist. School nurses are responsible for reporting communicable diseases to the local board of health (or to DPH at 617-983-6800 if the local board of health is not available).

Confidentiality

Confidentiality is required by law and must be maintained by everyone, including the disease investigator (school health provider), clerical staff, administrative staff, teachers, and other school officials who may be aware of personal health information. Only individuals who have a "need to know" should have access to sensitive records. When unsure about whether it is appropriate to release information, ***do not release it!*** Check with the local board of health or contact DPH's Division of Epidemiology and Immunization at 617-983-6800 or Legal Office at 617-624-5220 for advice.

Isolation and Quarantine

Two key processes that public health officials may use to prevent the spread of communicable diseases are isolation and quarantine. *Isolation* refers to separating *people who are ill* from other people to prevent the spread of a communicable disease. *Quarantine* refers to separating and restricting the movement of *people who have been exposed* to a communicable disease and are not yet ill but may become ill and infectious; these people are often referred to as "contacts" of the person who is known or presumed to be infected and infectious. Isolation and quarantine are

usually voluntary. Most people readily understand the need for isolation and quarantine. Individuals who refuse to comply voluntarily with isolation or quarantine may be isolated/quarantined against their will, usually via court order.

DPH offers training on isolation and quarantine. School nurses should work with school administrators to ensure that appropriate school staff are knowledgeable about legal requirements related to isolation and quarantine.

Immunizations
The Code of Massachusetts Regulations specifies minimum immunization requirements for enrollment in school (105 CMR 220.000). These requirements, as well as exclusion requirements, recordkeeping procedures, and requirements and recommendations for immunization of teachers and staff are discussed below in the "Vaccine-Preventable Diseases" section. See also Exhibit 8-2 for Immunization Exemptions and Vaccine-Preventable Disease Exclusion Guidelines in School Settings.

INFECTION PREVENTION AND CONTROL IN THE SCHOOL SETTING

Many factors increase the risk of transmission of communicable diseases at school. These include close contact, sharing of objects that may serve as vehicles of transmission, and inadequate personal hygiene supplies (such as soap and tissues).

Transmission of Communicable Diseases
Knowing *how* communicable diseases are spread is key to implementing proper infection prevention and control. The spread of an infectious disease requires a source of infection, a route of transmission, and a host susceptible to the infection. Infectious diseases are spread through one or more of the following routes of transmission: contact, droplet, airborne, common vehicle (such as food, water, or objects), or vector-borne (mosquitoes, ticks).

Contact transmission of infectious microorganisms by skin, respiratory tract secretions, fecal matter, or blood is the most common way infectious diseases are spread in schools.

Direct-contact transmission involves a direct person-to-person contact (touching), which results in the physical transfer of microorganisms.

Indirect-contact transmission involves the contact of a susceptible person with a contaminated object, such as a toy, school equipment, or wound dressings.

Consistent use of good hand hygiene practices and standard precautions will reduce the risk of diseases spread through contact transmission. (Guidelines for hand hygiene and standard precautions are given in the "Infection Control Measures" section below.)

Droplet transmission occurs when droplets containing microorganisms generated from an infected person are propelled a short distance through the air (less than 3 feet) by coughing, sneezing, or talking. Because these droplets are large particles that do not remain suspended in the air, droplet transmission should not be confused with airborne transmission (see below).

Examples of diseases spread through droplets include:

- bacterial infections: invasive *Haemophilus influenzae* disease*,* invasive meningococcal disease*, Mycoplasma pneumoniae*, pertussis, and group A streptococcus; and,
- viral infections: influenza, mumps, fifth disease, and rubella.

Respiratory hygiene and cough etiquette, including hand hygiene and standard precautions, reduce the risk of droplet transmission in the school setting. (Guidelines for respiratory hygiene and cough etiquette are given in the "Infection Control Measures" section below.)

Airborne transmission occurs when organisms travel as small particles or dried respiratory droplets that are generated when people sneeze, cough, laugh, or exhale. They hang in the air much like invisible smoke, can travel on air currents over considerable distances, and may be inhaled by a susceptible host within the same room or over a longer distance from the source. Tuberculosis and measles are two examples of diseases spread by airborne transmission.

Common vehicle transmission occurs when the infectious agent or its toxins are spread to many people from a single source. The most frequently implicated common vehicles are food and water, but vehicles may also include medications and equipment. Outbreaks of foodborne illnesses such as *Salmonella, Shigella,* and *E. coli* O157:H7 are often connected to a common source of contaminated food.

Vector-borne transmission occurs when infectious agents move from host to host via insect carriers, or vectors, such as mosquitoes, fleas, lice, or ticks. For example, mosquitoes may carry the malaria parasite or West Nile virus, and deer ticks may carry Lyme disease bacteria.

Infection Control Measures

The spread of communicable diseases can be controlled by the use of good infection control practices. In the school setting, age-appropriate immunization is key in preventing the transmission of vaccine-preventable diseases. Proper hand hygiene, standard precautions, appropriate personal protective equipment, cleaning and disinfecting, and respiratory hygiene/cough etiquette are effective methods for preventing the spread of most infectious diseases and should be implemented and practiced consistently in schools.

Some diseases require more specific prevention measures. Please refer to the individual disease sections within this chapter for detailed information.

Hand Hygiene

Proper hand hygiene is the single most effective way to prevent the spread of most infections. Several studies have indicated an association between handwashing or use of alcohol-based hand sanitizers and reduction in school absenteeism due to infectious illnesses.

People should practice hand hygiene:

- after toileting;
- before eating or handling food; and,
- after contact with blood or body fluids, non-intact skin, or nasal and respiratory secretions.

To properly wash and clean hands, the following procedures should be followed:

- Wash hands with soap and water when they are visibly soiled. Wet hands first with water, apply soap, and rub hands together vigorously for at least 20 seconds. Rinse hands with water and dry thoroughly. Use a towel to turn off the faucet.

- If hands are not visibly soiled, an alcohol-based hand rub or gel may be used in place of soap and water. Apply the product to the palm of one hand and rub the hands together, covering all surfaces of the hands and fingers, until hands are dry.

Detailed hand hygiene information is available on the Centers for Disease Control and Prevention (CDC) website at http://www.cdc.gov/handhygiene.

Standard Precautions

Standard precautions are used for all contact with blood and other body fluids, secretions, and excretions; non-intact skin; and mucous membranes. These precautions must be used at all times, regardless of a person's infection status or diagnosis. Standard precautions include:

- Follow hand hygiene guidelines (see above).
- Wear gloves (clean, nonsterile) when touching blood, body fluids, non-intact skin, or contaminated items. Change gloves between patients and tasks, and *always* practice hand hygiene whenever gloves are removed. Gloves are not a substitute for hand hygiene.
- Gowns, masks, and eye protection should be worn during procedures and activities that are likely to generate splashes or a spray of blood or body fluids.
- Disinfect surfaces and equipment contaminated with blood or body fluids using a 1:10 solution of bleach for 30 seconds, or any EPA-approved disinfectant used according to manufacturers' recommendations. Bleach solutions should be mixed on a routine basis and stored in an opaque bottle.
- Dispose of needles, syringes, and all other sharps in a puncture-proof container.
- Dispose of infectious waste (anything contaminated with blood or body fluids) in a leak-proof sealable bag.

Respiratory Hygiene/Cough Etiquette

Respiratory hygiene is a term adopted by CDC and DPH to describe measures that can be taken to decrease the risk of spreading respiratory illnesses by droplet and airborne transmission. A universal "respiratory hygiene/cough etiquette" policy should be implemented and used consistently in schools. Such a policy should include the following:

- Cover the mouth and nose with a tissue when coughing or sneezing;
- Dispose of used tissues in a wastebasket; and
- Practice hand hygiene often.

> During "cold and flu" season, have plenty of tissues and alcohol-based hand rubs available for use. Hang posters and signs to remind people about cough etiquette and hand hygiene. And remind parents/guardians to keep sick children home from school.

VACCINE-PREVENTABLE DISEASES

Vaccine-preventable diseases include, at the time of this publication, chickenpox (varicella), diphtheria, *Haemophilus influenzae* type b (Hib), hepatitis A, hepatitis B, invasive pneumococcal disease, pertussis, polio, measles, mumps, rubella, and tetanus. Prior to the introduction of immunization, these diseases were major causes of widespread illness and often resulted in permanent medical complications or even death.

Some people believe that vaccine-preventable diseases are no longer a problem in the U.S. or that children cannot get them anymore. This is not true. Cases of these diseases still occur, particularly in unimmunized or inadequately immunized children and adults. In recent years, over 1,500 cases of these vaccine-preventable diseases (primarily pertussis and chickenpox) were reported annually in Massachusetts.

Children in schools and school staff are especially at risk. Schools with a large number of staff members born in the late 1950s and early 1960s are at particular risk, because individuals in this age group are too young to have acquired natural immunity from disease during the days before widespread vaccination, and they graduated from high school before vaccination for all of these diseases was required. In addition, protection against pertussis (whooping cough) diminishes over time — within 10–12 years after the last dose of vaccine (which is usually given at school entry). As a result, immunity for those individuals has dissipated, leaving many older students susceptible. Outbreaks of pertussis are common in schools, particularly among students 11–19 years of age. In addition, many adults are susceptible. A booster dose of pertussis vaccine was licensed for use in the U.S. in 2005, which should decrease the incidence of pertussis in adolescents and adults.

Children should be immunized as completely as possible for their age, in accordance with regulations.

Immunizations

The Code of Massachusetts Regulations specifies minimum immunization requirements for enrollment in school (105 CMR 220.000). These requirements apply to all students attending a preschool program (as defined in 105 CMR 220.400), kindergarten through 12th grade in a public or private school, or a postsecondary institution (as defined in section 220.600), provided the educational program is offered either onsite or offsite in Massachusetts. The term *student* includes individuals from other countries attending or visiting classes or educational programs as part of a formal academic visitation or exchange program. These regulations are updated periodically to reflect the most recent recommendations of the Advisory Committee on Immunization Practices (ACIP) and the American Academy of Pediatrics (AAP), and required immunizations may be added or eliminated accordingly. (See Exhibit 8-1 for a more detailed interpretation of school immunization laws and regulations in Massachusetts.)

Requirements

Regulations currently require students to be vaccinated against polio, diphtheria, tetanus, pertussis, measles, mumps, rubella, hepatitis B, and varicella. In addition, meningococcal vaccine is required for some students. See the following web page for a table listing the minimum immunizations required for school attendance as of August 2006: http://www.mass.gov/dph/cdc/epii/imm/guidelines_sched/chiimm.pdf.

Every year, DPH updates and distributes the most current childhood immunization recommendations and school requirements to all schools that have kindergartens and 7th grades and to all postsecondary institutions. The immunization schedule can be accessed on the DPH website. Children in preschool programs are required to be immunized according to the most recent DPH recommended schedules. It is *extremely* important that each school nurse obtain the most current version of the childhood immunization schedule and requirements for school entry via the DPH website (http://www.mass.gov/dph).

Exclusion

The law and regulations provide for exclusion of students from school if immunizations are not up to date, but exemptions are permitted at school entry for medical and religious reasons. The only

exception for exclusion of unimmunized or partially immunized children without medical or religious exemptions is for homeless children: The federal McKinney-Vento Homeless Assistance Act of 2001 stipulates that homeless children cannot be denied entry to school for nonpossession of immunization records. Exhibit 8-2 provides a more detailed explanation of exemptions and vaccine-preventable disease exclusion guidelines in school settings.

Note: When a case of a vaccine-preventable disease emerges, susceptible individuals (including those with medical or religious exemptions) who are not vaccinated will need to be excluded for the appropriate time periods as outlined in *Reportable Diseases, Surveillance and Isolation & Quarantine Requirements* (105 CMR 300.000).

Recordkeeping

Standard immunization record forms are available to facilitate recordkeeping for children in schools and child care facilities. DPH provides all primary care providers with official copies of *Massachusetts Lifetime Health and Immunization Record* (Blue Book), in which a record of a child's immunization schedule and all dosages of vaccines administered may be kept. This record has been approved by the Massachusetts Medical Society and the Massachusetts Department of Education (DOE) for use as an official record of each child's immunization status when entries into the record are signed by a health care provider. In addition, a DPH *Certificate of Immunization* can be given to students or used as part of their record.

Some health care providers give Blue Books to parents or guardians with instructions to bring the record with them to all pediatric visits. Parents are also told that a record documenting the required immunizations should be brought when enrolling students into child care, kindergarten, and college. Some schools provide graduating or transferring students with copies of their immunization records to ensure that immunization information travels with each student.

Teachers and Staff

Although routine immunizations are strongly recommended for teachers and staff, DOE does not specify immunization requirements for all categories of staff. However, certain immunizations are required for some staff. Teachers and staff working in programs for school-age children licensed by the Office of Child Care Services (OCCS) are required to provide proof of immunity to measles, mumps, and rubella, according to the Code of Massachusetts Regulations (102 CMR 7.08 and 8.04). Physician-diagnosed disease is not acceptable proof of immunity for these three diseases. In addition, hepatitis B vaccination is recommended for staff whose responsibilities include first aid. Please refer to the section on hepatitis B for additional recommendations for hepatitis B immunization.

The DPH recommends that *all* adults working in schools (including volunteers and student teachers) have immunity to measles, mumps, rubella, diphtheria, tetanus, and chickenpox. An annual influenza vaccination is also recommended for those who are in contact with children. Federal OSHA regulations also require some employers to offer hepatitis B vaccine to staff with responsibility for first aid and to have an exposure plan in place. OSHA requirements, however, do not cover public employees in Massachusetts, except those working in hospitals.

The DPH encourages school health programs to maintain information on the vaccination status of school staff, because staff members without documentation of immunity may be excluded if a vaccine-preventable disease manifests in the school. See Exhibit 8-3 for a more detailed chart of recommended and required immunizations for teachers and staff. The recommended immunizations and acceptable evidence of immunity in adults can be provided in several ways, which vary by the age of the adult and the specific disease (Exhibit 8-4).

Remember: The most current immunization requirements for students, as well as recommendations and requirements for teachers and staff, can always be found on the DPH website (http://www.mass.gov/dph). The requirements and recommendations are updated annually, and DPH continually posts revisions and updates to related materials, forms, and information on this site. In addition, immunization epidemiologists can be contacted at the DPH Bureau of Communicable Disease Control, Division of Epidemiology and Immunization to provide the most recent immunization recommendations for children who are behind schedule.

Reporting Requirements

The local board of health must be notified if a documented case of any of the diseases listed below occurs in the school (105 CMR 300.000). The board of health will notify the DPH immunization epidemiologist in the Division of Epidemiology and Immunization at 888-658-2850 or 617-983-6800.

Diseases that must be reported:

- chickenpox (varicella);
- diphtheria;
- *Haemophilus influenzae* type b (Hib);
- hepatitis A;
- hepatitis B;
- invasive pneumococcal disease;
- pertussis;
- polio;
- measles;
- mumps;
- rubella; and
- tetanus.

Both the local board of health and DPH's epidemiologist can assist schools in identifying and vaccinating susceptible children and adults. They can also provide instruction on procedures for monitoring the school for additional cases. Exhibit 8-5 outlines the ***initial*** investigative measures for vaccine-preventable diseases developed by DPH's Division of Epidemiology and Immunization.

Notification

The school nurse and school physician should consult with the local board of health and DPH's immunization epidemiologist to determine whether some or all parents/guardians and staff should be notified immediately. Parent/guardian notification should be discussed with the school administrator prior to initiation.

Control Procedures

Control measures for vaccine-preventable diseases are complex and beyond the scope of this chapter. Procedures are updated regularly as new vaccines are licensed or as national guidelines change. Information provided here should be regarded as general guidance. Detailed guidance should be obtained by telephoning a DPH immunization epidemiologist at 888-658-2850 or 617-983-6800. The DPH immunization epidemiologist can provide you with sample letters, advisories, and Public Health Fact Sheets (also available at the DPH website.) If needed, the epidemiologist

can also send you the pertinent chapter from *Guide to Surveillance and Reporting.* Resources can also be accessed online through the DPH website at http://www.mass.gov/dph/cdc/epiimm2.htm.

Standard Measures

The following measures should be taken in the event of the occurrence of any of the vaccine-preventable diseases listed above. Exceptions and specific additional measures will be noted in sections discussing each disease.

- Notify the local board of health and DPH.
- Follow the prevention guidelines at the beginning of this section, as well as those provided in the sections on hand hygiene, respiratory hygiene/cough etiquette, and standard precautions in the "Infection Prevention and Control in the School Setting" section of this chapter.
- Exclude infected individuals during their infectious period.
- Identify who has been exposed, determining the "zones of exposure" for the disease (see below).
- Identify all susceptibles among exposed students and staff.
- Identify high-risk, exposed susceptibles and refer them to their health care providers.
- Immunize all susceptibles for whom there are no contraindications, age-appropriately.
- Recommend antibiotic treatment or prophylaxis, if indicated.
- Exclude all exposed susceptibles who cannot be vaccinated (or take antibiotics if indicated) for medical or religious reasons during the appropriate time period.
- Notify students, staff, parents/guardians, and others.
- Conduct surveillance for two incubation periods.

Identifying Zones of Exposure

Identifying *zones of exposure* is one of the critical first steps in developing control measures. Zones of exposure are disease-specific and depend of the mode of transmission and the immune status of infected individuals, as well as of those exposed. Detailed guidance on this issue and all the other steps for the control of specific vaccine-preventable diseases can be found in the DPH publication *Guide to Surveillance and Reporting,* available on the DPH website at http://www.mass.gov/dph. In addition, the chapters dealing with vaccine-preventable diseases have been excerpted and sent to all schools.

Chickenpox

Chickenpox is characterized by a pruritic (itchy), maculo-papulovesicular rash that evolves into dried crusts over a 5-to-6-day period. All three types of lesions (macules, papules, and vesicles) are present at the same time. Lesions tend to be more abundant on covered parts of the body and can also occur on mucosal surfaces. In adults, and less commonly in children, fever and constitutional symptoms may precede the rash by 1 or 2 days. The disease is usually mild among children but can be more severe in adolescents and adults. Although immunity following varicella infection is considered to be long-lasting, second cases of varicella do occasionally occur among immunologically normal individuals.

Complications of chickenpox include pneumonia (viral and bacterial), secondary bacterial infections, thrombocytopenia, arthritis, hepatitis, encephalitis or meningitis, cerebellar ataxia, glomerulonephritis, and death (1 per 100,000 children aged 5–9 with varicella; 1 per 5,000 adults). While pneumonia is unusual in healthy children, it is the most common serious complication in adolescents and adults. Invasive group A streptococcal disease, which can result in cellulitis, necrotizing fasciitis, septicemia, and toxic shock syndrome, is increasingly reported as a

complication. Immunocompromised individuals, pregnant women, infants, adolescents, and adults are at risk for more severe chickenpox infection and its complications.

Chickenpox occurs worldwide. Since the introduction of varicella vaccine in 1995, there has been a dramatic reduction in chickenpox incidence among all age groups in countries where it is used widely.

Vaccine-modified varicella syndrome (VMVS or "breakthrough chickenpox")
Varicella vaccine was licensed in 1995. Breakthrough chickenpox is a form of wildtype chickenpox that occurs in vaccinated individuals more than 42 days after vaccination. It is less severe, due to the development of "partial immunity," which, although not sufficient to prevent disease, does attenuate symptoms. VMVS usually presents as a generalized rash consisting of fewer than 50 lesions, usually more maculopapular than vesicular, with a few vesicles. Although often afebrile and minimally symptomatic, VMVS patients are still considered infectious.

VMVS can occur in up to 20% to 30% of vaccinated children and adults. If the incidence of breakthrough disease is greater than 30% in any particular setting, DPH should be notified for further investigation of the cases, and a vaccine "cold chain" evaluation should be performed.

Transmission: Chickenpox is transmitted person-to-person by droplet spread when a person coughs or sneezes or by direct contact with nasopharyngeal secretions or lesions of an infected person. While chickenpox can be transmitted by the airborne route, this is rare in school settings.

It usually takes 14–6 days from the time of exposure until a person develops the symptoms of chickenpox (but may take from 10–21 days). The infectious period for chickenpox begins 1–2 days before the rash appears (but may be earlier in immunocompromised individuals). If vesicles are present, individuals are considered infectious until all of the vesicles have formed scabs, usually within 5 days of rash onset. Contagiousness may be prolonged in immunocompromised patients, and these individuals are more likely to transmit infection by the airborne route.

Vaccinated persons with chickenpox may develop lesions that do not crust (macules and papules only). These persons are no longer contagious once the lesions have faded (i.e., the skin lesions are in the process of resolving; lesions do not need to be completely resolved) or no new lesions appear within a 24-hour period.

Diagnosis: Chickenpox is usually diagnosed by the typical appearance of the rash and clinical presentation.

> ***Caution: Aspirin (or products containing salicylate) should never be used in any viral illness, but particularly if influenza or chickenpox is suspected, because of the association of Reye's syndrome (vomiting, liver function abnormalities, and/or coma) with aspirin use in these illnesses.***

School attendance guidelines: If students or staff have had chickenpox disease with vesicles present, they may return to school when all blisters are crusted over and dry. If no vesicles were present, they may return to school when the lesions are faded (i.e., the skin lesions are in the process of resolving; lesions do not need to be completely resolved) or no new lesions appear within a 24-hour period, whichever is later.

To identify those exposed, think in terms of the zones of exposure described in Exhibit 8-5. Also refer to the following website for school immunization requirements: http://www.mass.gov/dph/cdc/epii/imm/guidelines_sched/chiimm.pdf

However, discussion of the details of the control measures for chickenpox, under the variety of circumstances that may be involved, are beyond the scope of this chapter. Detailed guidance on how to identify those exposed and the most up-to-date recommendations for control measures can be found in the chapter on varicella (chickenpox) in the excerpts on vaccine-preventable diseases from the DPH *Guide to Surveillance and Reporting* (sent to all schools), as well as in the full *Guide,* published on the DPH website at http://www.mass.gov/dph

Susceptible students and staff are those who have been exposed to a case of chickenpox and do not have a reliable history of disease (for students, disease must be physician-certified), are not age-appropriately vaccinated, or are without laboratory evidence of immunity. See Exhibit 8-4 for acceptable evidence of immunity for control of select vaccine-preventable diseases.

As a critical first step to developing control guidelines for chickenpox in school settings, follow the previously described parameters for determining zones of exposure. The following are examples of exposure in a school setting:

- sharing the same classroom;
- sitting at the same table in a lunchroom;
- sitting within several seats of the case in an auditorium;
- riding the same bus/carpooling; and
- participating on the same sport team or extracurricular activity.

In most settings, casual, brief contact would not normally constitute exposure, nor would an entire school be considered exposed. However, if the individual with chickenpox is immunocompromised or if any contacts are immunocompromised, wider zones of exposure may be considered after consultation with DPH.

Susceptible students and staff who receive the varicella vaccine within 5 days of exposure to someone with chickenpox rash will not be excluded from school or work.

In some settings that DPH determines to be “high risk” — e.g., large number of high-risk susceptibles, individuals with mental impairment unable to recall past history of disease, large number of foreign-born individuals — DPH may require susceptible students and staff to receive varicella vaccine within 3 days of exposure, and other more stringent control measures may also be recommended.

Susceptible students or staff who are not appropriately immunized or who are without laboratory evidence of immunity or a reliable history of chickenpox shall be excluded as outlined below.

- For a discrete (one-time) exposure, exclude susceptibles on days 10–21 from the exposure to someone while infectious with a varicella rash (not including the prodrome).
- For more than 1 discrete exposure (e.g., attended school on days 2, 3, and 4 after rash onset), exclude susceptibles on days 10–21 from the earliest exposure to someone while infectious with a varicella rash (not including the prodrome).
- For continuous exposure (e.g., exposure to the case beginning on the day of rash onset, as might occur in a household), exclude on days 10–21 from the date of rash onset.

Remember, when case(s) of disease occur, susceptible individuals with medical or religious exemptions who do not get vaccinated must also be excluded for the appropriate time period as outlined in *Reportable Diseases, Surveillance and Isolation & Quarantine Requirements* (105 CMR 300.000).

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see Exhibit 8-5.

Additional prevention guidelines:

- **At-risk individuals** — Pregnant women and immunocompromised individuals who are susceptible to chickenpox should be referred to their physician **immediately** after exposure. Women who get chickenpox when pregnant are more likely to have serious complications. Individuals at high risk can be given VZIG (varicella-zoster immune globulin) or intravenous immunoglobulin (IVIG) to prevent serious problems. Such passive immunization must be given within 4 days of exposure to be effective. (Note: VZIG will not be available in the U.S. after 2006.)
- **GAS infections** — Invasive group A streptococcal (GAS) infections as a complication of chickenpox are becoming more common. DPH has rigorous and detailed control measures for child care centers and schools where varicella is accompanied by GAS, whether invasive or noninvasive. The central strategy involves rapid vaccination of exposed susceptibles (varicella vaccine can prevent or modify disease if given within 3–5 days after exposure) and antibiotic treatment where indicated. **Contact the Division of Epidemiology and Immunization immediately for assistance at 888-658-2850 or 617-983-6800**. Also, refer to the "Group A Streptococcus (Invasive)" section in this manual, as well as the chapter in DPH's *Guide to Surveillance and Reporting* (available at http://www.mass.gov/dph/cdc/gsrman/gsr.htm) for more information about this infection.

Shingles

Varicella zoster virus (VZV) remains in a latent state in human nerve cells after chickenpox and is reactivated in approximately 15% of infected persons, resulting in herpes zoster (shingles). Shingles presents as a red, painful, itchy, and blistery rash, typically in one area on one side of the body in the distribution of a nerve, and usually without fever or other systemic symptoms. Pain and itching may persist after the lesions have resolved (post-herpetic neuralgia). Shingles can be treated with several antiviral agents. This infection can result in generalized skin eruptions and central nervous system, pulmonary, hepatic, and pancreatic involvement in immunocompromised individuals.

Cases of shingles following vaccination have been reported, although the risk of developing shingles subsequent to VMVS is lower than for wildtype infection. The majority of shingles cases in vaccinated individuals have been mild and unassociated with complications.

Shingles is found worldwide and has no seasonal variation. Approximately 15% of the general population will experience shingles during their lifetime. Susceptibility to this disease increases with age among the general population, but it is most common among immunocompromised persons and children with a history of intrauterine varicella or varicella occurring within the first year of life.

Transmission: Exposure to shingles can result in chickenpox infection in susceptible individuals. Transmission is through direct contact with lesions. Those with disseminated shingles and immunocompromised people with either localized or disseminated shingles can also transmit

chickenpox virus via the airborne route. Individuals with shingles are contagious until the lesions crust over. Anyone who is exposed to the varicella-zoster virus and has not had chickenpox before will almost certainly get it.

Diagnosis: Shingles is usually diagnosed by the typical appearance of the rash.

School attendance guidelines: School attendance guidelines for susceptible individuals with an exposure to shingles (as defined above) are the same as for chickenpox exposure. Unless the shingles rash can be completely covered, it is advisable that healthy individuals with shingles stay home until the rash is crusted over and dry. The person with shingles must be very careful about personal hygiene. Those with disseminated shingles and immunocompromised people with either localized or disseminated shingles should stay home.

If the shingles is localized but it is uncertain whether the case can keep the lesions covered (e.g., young children, individuals with developmental delay), the case may be asked to stay home until he or she is no longer infectious. Additionally, those with shingles should avoid contact with high-risk individuals. If this is not possible in some settings, exclusion of the case (or the high-risk contact(s)) may be considered.

> To identify those exposed, think in terms of the zones of exposure described in Exhibit 8-5. Also refer to the following web site for school immunization requirements: http://www.mass.gov/dph/cdc/epii/imm/guidelines_sched/chiimm.pdf. However, discussion of the details of the control measures for chickenpox/shingles under the variety of circumstances that may be involved is beyond the scope of this chapter. Detailed guidance on how to identify those exposed and the most up-to-date recommendations for control measures can be found in the chapter on varicella (chickenpox) in the excerpts on vaccine-preventable diseases from the DPH *Guide to Surveillance and Reporting* (sent to all schools), as well as in the full *Guide,* published on the DPH website at http://www.mass.gov/dph.

Exposure to uncomplicated shingles is defined as contact with lesions, e.g., through touching or hugging. Exposure to disseminated shingles and localized or disseminated shingles in an immunocompromised person is defined as: (1) contact with lesions, e.g., through touching or hugging, or (2) sharing indoor airspace with the infectious person (e.g., occupying the same classroom or bus).

See Exhibit 8-4 for acceptable evidence of immunity for control of select vaccine-preventable diseases.

Diphtheria

Diphtheria is a very serious bacterial infection caused by toxin-producing varieties of *Corynebacterium diphtheriae*. The infection has 2 major forms — *respiratory* and *cutaneous.* In the respiratory form of the disease, a membrane forms that usually is visible on the throat or tonsils but can affect the entire respiratory tract. Respiratory diphtheria begins 2–7 days after infection. Initial symptoms of the disease include a sore throat and low-grade fever. Swelling of the neck ("bull-neck") from inflammation can develop and is a sign of severe disease. The respiratory form of diphtheria usually lasts several days; complications can persist for months.

Death from asphyxiation is possible if the membrane obstructs breathing. Other complications of respiratory diphtheria are caused by remote effects of the diphtheria toxin; these include

myocarditis (inflammation of the heart) and nerve involvement with paralysis. Case fatality rates of 5%–10% for respiratory diphtheria have changed little in 50 years.

The cutaneous form of diphtheria is seen mainly in the tropics and among the homeless and has never been observed in a Massachusetts school environment.

Diphtheria, while rare, continues to occur in the U.S., primarily among unimmunized or inadequately immunized people. Some diphtheria cases are imported from other parts of the world where diphtheria is common, or they occur among populations where it was previously endemic (such as the Northern Plains Indians or the homeless). Studies have shown that up to 60% of U.S. adults are susceptible. Booster doses of diphtheria toxoid (given as a tetanus-diphtheria vaccine) are generally recommended every 10 years, after completion of the childhood primary immunization series, to maintain protection. However, some experts now say booster doses need only be given at age 65 if an individual has completed the full childhood series, including the teenage booster.

Transmission: The bacteria are spread person-to-person by droplets expelled when a person coughs or sneezes, or by direct contact with the nasopharyngeal secretions of infected persons. Contact with articles soiled with discharge from cutaneous lesions of infected people can also spread infection, but this has rarely been documented. Raw milk has also served as a vehicle for transmission.

School attendance guidelines: Close contacts must be identified. Close contacts of diphtheria cases are defined as those who sleep in the same house or who share food, drink, or eating/drinking utensils with the case, as well as health care workers in contact with the case's oral or respiratory secretions. Contacts who were in brief contact with the case but do not meet the definition for close contact are not considered significant contacts.

Nose and throat cultures must be obtained from all close contacts, and all must receive appropriate antibiotic therapy and have their immunization status assessed. All those exposed without documentation of having received a primary series of diphtheria-containing vaccine and a booster dose within the past 5 years will need further immunization.

No identified cases or carriers of *C. diphtheriae* may return to school until two cultures from the nose, throat, or skin sores are negative for the bacteria. Cultures should be taken at least 2 weeks after completion of antimicrobial therapy and at least 24 hours apart.

> To identify those exposed, think in terms of the zones of exposure described in Exhibit 8-5. Also refer to the following website for school immunization requirements: http://www.mass.gov/dph/cdc/epii/imm/guidelines_sched/chiimm.pdf.
> However, discussion of the details of the control measures for diphtheria under the variety of circumstances that may be involved is beyond the scope of this chapter. Detailed guidance on how to identify those exposed and the most up-to-date recommendations for control measures can be found in the chapter on diphtheria in the excerpts on vaccine-preventable diseases from the DPH *Guide to Surveillance and Reporting* (sent to all schools), as well as in the full *Guide,* published on the DPH website at http://www.mass.gov/dph.

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see Exhibit 8-5.

Haemophilus Influenzae Type B Illness (Hib Disease)

Haemophilus influenzae (H.i.) disease is caused by small gram-negative coccobacilli that may be either encapsulated (types a-f) or unencapsulated (nontypeable). Type b (Hib) is the only kind for which there is a vaccine and for which control measures are considered necessary.

Hib causes serious and sometimes fatal illnesses, most often in young children. Invasive Hib may produce various clinical syndromes including meningitis, bacteremia or sepsis, epiglottitis, pneumonia, septic arthritis, osteomyelitis, pericarditis, empyema, and abscesses. Mucosal infections such as bronchitis, sinusitis, or otitis that are caused by H.i. are considered noninvasive.

Invasive Hib disease is most prevalent among children aged 2 months to 3 years and is rare in healthy individuals over the age of 5. In the U.S., the peak incidence is in children 6–12 months of age, and secondary cases may occur in households, child care centers, and other institutional settings. Since the licensing of the conjugate vaccine in 1987, the number of cases has dramatically decreased, and invasive Hib disease primarily now occurs in very young children who are unvaccinated or undervaccinated or in immunosuppressed individuals. Older children and healthy adults rarely develop invasive Hib disease.

Invasive Hib disease has been more frequent in boys, African Americans, Alaskan Eskimos, Apache and Navajo Indians, child care center attendees, children living in overcrowded conditions, and children who were not breastfed. Unimmunized children, particularly those younger than 4, who are in prolonged close contact (such as in a household setting) with a child with invasive Hib are at increased risk. Other factors predisposing to invasive disease include sickle cell disease, asplenia, HIV infection, certain other immunodeficiency syndromes, and malignant neoplasms. Before the widespread use of Hib conjugate vaccines, meningitis occurred in approximately two-thirds of children with invasive Hib disease, resulting in hearing impairment or severe permanent neurologic sequelae such as mental retardation, seizure disorder, cognitive and developmental delay, and paralysis in 15%–30% of survivors. Approximately 5% of all cases were fatal.

Transmission: Hib is transmitted person-to-person by droplet spread when a person coughs or sneezes or by direct contact with nasopharyngeal secretions of an infected person. The most common portal of entry is the nasopharynx. These bacteria can be carried in the nose or throat for a period of time without producing symptoms of illness. An asymptomatic carrier may spread the bacteria to another person, who may then become ill. The risk of spread is most common in households and classrooms with children under 4, with the highest risk in children under 2.

A vaccine to prevent Hib infections is required for children in child care or preschool settings. Clinical efficacy has been estimated at 95%–100%, and invasive Hib disease in a completely vaccinated infant is very rare.

Diagnosis: These illnesses are diagnosed by obtaining a clinical specimen for culture from an infected person's blood, spinal fluid, or other infected fluid. It may take up to 72 hours to grow and identify the bacteria. It is very important to identify the strain and to differentiate between serotype b, which is the only serotype for which there is a vaccine and control measures, and other serotypes, for which there are no control measures. Sometimes a doctor can make a preliminary diagnosis by looking at a gram stain of the infected fluid under a microscope.

Treatment: People sick with these infections generally require hospitalization for treatment. The presence of these bacteria in the nose and throat of healthy children and adults can be reduced and possibly eliminated through prescription of an appropriate antibiotic (currently rifampin) for all close contacts and family of infected individuals. In very rare situations, rifampin treatment might be considered for contacts in the preschool or kindergarten setting. However, preventive treatment is ***not*** generally recommended in classrooms where all individuals are 5 years of age or older.

The school physician, the school nurse, and the local board of health should consult with DPH to decide when children and staff should be required to take antibiotics, as this will vary and is based on the number and age of infected individuals and the ages, health status, and extent of contact for exposed individuals. If antibiotic prophylaxis is recommended, it will need to be taken by all, regardless of immunization status.

School attendance guidelines: Children and staff who are not ill with Hib disease may return as soon as the appropriate antibiotic treatment has begun. Children or staff who are ill should be excluded while they are ill and until 24 hours after initiating antimicrobial treatment. Exclude any children who do not receive antibiotics for 1 week after onset of the last case. Observe children carefully to identify those with febrile illness, and refer such children for medical evaluation.

> To identify those exposed, think in terms of the zones of exposure described in Exhibit 8-5. Also refer to the following website for school immunization requirements: http://www.mass.gov/dph/cdc/epii/imm/guidelines_sched/chiimm.pdf. However, discussion of the details of the control measures for Hib under the variety of circumstances that may be involved is beyond the scope of this chapter. Detailed guidance on how to identify those exposed and the most up-to-date recommendations for control measures can be found in the chapter on Hib in the excerpts on vaccine-preventable diseases from the DPH *Guide to Surveillance and Reporting* (sent to all schools), as well as in the full *Guide,* published on the DPH website at http://www.mass.gov/dph.

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the “Vaccine-Preventable Diseases” heading.

Additional prevention guideline: Do not initiate control measures until laboratory confirmation of *Haemophilus influenzae* type b is obtained.

Hepatitis A

See “Diseases Spread Through the Intestinal Tract” section later in this chapter.

Hepatitis B

See “Diseases Spread Through Blood Contact” section later in this chapter.

Measles

Measles is the most communicable viral illness and one of the most serious vaccine-preventable diseases. It begins with a fever, cough, runny nose, and conjunctivitis. The patient develops a rash, often brownish-red and blotchy, that begins on the face and spreads down the body over 3 days. The illness lasts 1–2 weeks, and complications include diarrhea, otitis media, pneumonia, encephalitis (1 per 1,000 cases), and death (1–3 per 1,000 cases, mostly from pneumonia and

occasionally from encephalitis). It can also cause miscarriages or premature delivery in pregnant women.

Since 2001, all students in Massachusetts have been required to have 2 doses of measles-containing vaccine for school entry. One dose of measles vaccine is reported to have an efficacy of 95%, and most persons will respond to a second dose. Recipients of 2 doses may still develop measles, but they have milder symptoms and a shorter duration of illness than unvaccinated individuals. A history of recent travel outside the U.S. should raise suspicion for diagnosis of measles in an individual with symptoms of measles, regardless of immunization history..

All people are at risk for measles, but those most at risk fall within five groups: (1) children younger than 12 months of age (those who are too young to have been immunized), (2) unimmunized people, (3) adults who may have received an earlier, ineffective measles vaccine prior to 1968 or who are unimmunized because they graduated from school prior to mandatory measles vaccination, (4) children and adults who have had only one dose of measles-containing vaccine, and (5) foreign-born individuals who have neither been vaccinated nor had measles as a child in their country of origin. Adults born in the U.S. prior to 1957 are generally considered immune.

Groups most at risk for complications are infants younger than 12 months of age, pregnant women, and individuals with weakened immune systems. Schools with large numbers of students with medical or religious exemptions from immunizations have a higher likelihood of acquiring measles and spreading it.

Transmission: Measles is among the most infectious diseases known to humans. It is transmitted person-to-person by droplet spread when a person coughs or sneezes, by direct contact with nasopharyngeal secretions of an infected person, and by the airborne route. Measles can be acquired by entering a room where an infectious individual has been, for up to 2 hours *after* that person has left the room. The communicable period is greatest 4 days before through 4 days after rash onset.

Diagnosis: Measles can be presumptively diagnosed by signs and symptoms; however, a blood test to detect antibodies (measles IgM) that are evidence of recent infection is required to confirm a preliminary diagnosis. In addition, clinical specimens (urine, nasopharynx swab, and blood) are needed for viral isolation and typing to determine the source of infection.

School attendance guidelines: A student or staff member with measles should not return until at least 4 days after the appearance of the rash (counting the day of rash onset as day zero).

> To identify those exposed, think in terms of the zones of exposure described in Exhibit 8-5. Also refer to the following website for school immunization requirements: http://www.mass.gov/dph/cdc/epii/imm/guidelines_sched/chiimm.pdf.
> However, discussion of the details of the control measures for measles under the variety of circumstances that may be involved is beyond the scope of this chapter. Detailed guidance on how to identify those exposed and the most up-to-date recommendations for control measures can be found in the chapter on measles in the excerpts on vaccine-preventable diseases from the DPH *Guide to Surveillance and Reporting* (sent to all schools), as well as in the full *Guide,* published on the DPH website at http://www.mass.gov/dph.

If there is one case of measles, susceptible individuals must be excluded from days 5 through 21, after exposure to the case during the infectious period. If exposure was continuous, or there were

multiple exposures, these individuals must be excluded through the 21st day after rash onset in the last case. After exposure, those defined as susceptible are individuals *without* proof of immunity, as defined by:

- Born in the U.S. before January 1, 1957 (with the exception of individuals in the health care setting, where year of birth doesn't apply).
- Two doses of measles-containing vaccine given at least 4 weeks apart, beginning at ≥ 12 months of age, *and* the second dose given prior to or within 72 hours of exposure. (In some situations, individuals receiving their first dose within 72 hours of exposure will be considered immune.)
- Serologic proof of immunity.

See Exhibit 8-4 for acceptable evidence of immunity for select vaccine-preventable diseases.

Remember, when case(s) of disease occur, susceptible individuals, including those with medical or religious exemptions who are not vaccinated, must also be excluded for the appropriate time period as outlined in *Reportable Diseases, Surveillance and Isolation & Quarantine Requirements* (105 CMR 300.000).

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the "Vaccine-Preventable Diseases" heading.

Additional prevention guidelines:

- Measles is one of the few diseases that *can* be prevented through prompt immunization after exposure. Initiate control measures prior to laboratory confirmation of the case. If a case is reported *or* suspected, all susceptible students and staff who are without contraindication to vaccine should be immunized *within 72 hours of exposure*.
- Because measles is airborne, the zone of exposure could be the entire institution. Detailed guidance on this issue and all other steps for the control of vaccine-preventable diseases can be found in the DPH publication *Guide to Surveillance and Reporting,* published on the DPH website at http://www.mass.gov/dph.
- Immune globulin (IG), if given within 6 days of exposure, may decrease the severity of illness and should be offered to all those under 12 months of age, pregnant women, individuals who have weakened immune systems, or those with other contraindications to the vaccine. *Those who receive IG can still become infectious and should be excluded days 5–21 after exposure.*

Mumps

Mumps is a systemic disease, with characteristic swelling of the salivary glands usually lasting several days. However, about one-third of infections do not cause clinically apparent salivary gland swelling. Meningeal signs are common. Encephalitis occurs rarely, and permanent sequelae and death are uncommon. At risk for complications are children under 12 months of age, pregnant women, persons with weakened immune systems, and susceptible adolescent and adult males.

Infection in adulthood is likely to produce more severe disease, including mastitis, which occurs in up to 31% of females aged 15 years or older, and orchitis, which occurs in 20%–30% of post-pubertal males. Other complications that are possible but rare include arthritis, renal involvement, myocarditis, cerebellar ataxia, pancreatitis, and hearing impairment. Mumps infection during the first trimester of pregnancy can increase the risk of spontaneous abortion, although no evidence exists that mumps infection in pregnancy causes congenital malformations.

Most adults born in the U.S. before 1957 have been infected naturally with mumps and are likely to be immune. Mumps may emerge in unimmunized children or in adolescents and adults who graduated from school prior to laws requiring mumps immunizations or who may have received an earlier, less effective vaccine. Due to the two-dose MMR vaccination policy, the number of mumps cases reported in the U.S. has declined steadily.

In immunized children, most cases of parotitis are not caused by mumps. Swelling of the salivary glands can also be caused by parainfluenza virus types 1 and 3, influenza A, coxsackievirus A, echovirus, lymphocytic choriomeningitis virus, HIV, and noninfectious causes such as drugs, tumors, immunologic diseases, and obstruction of the salivary duct.

Transmission: Mumps is transmitted person-to-person by droplet spread of the virus in the air through sneezes or coughs. It is also spread by direct contact with nasopharyngeal secretions of an infected person. Mumps cases are generally considered communicable from 2 days before onset of parotid swelling through 9 days after onset of parotid swelling. Mumps is similar to influenza or rubella in infectiousness and is not as contagious as measles or chickenpox. While mumps may be spread by the airborne route, such transmission would be very rare in school settings and should not determine exposure.

Diagnosis: Mumps can be presumptively diagnosed by signs and symptoms, but it *must* be confirmed by a blood test to look for mumps antibodies (IgM or by a fourfold or greater titer change of acute and convalescent mumps IgG) that are evidence of recent infection. In certain circumstances, specimens for viral isolation may be requested.

School attendance guidelines: Exclude a student or staff member until 9 days after the onset of swelling (counting the initial day of gland swelling as day zero).

> To identify those exposed, think in terms of the zones of exposure described in Exhibit 8-5. Also refer to the following website for school immunization requirements: http://www.mass.gov/dph/cdc/epii/imm/guidelines_sched/chiimm.pdf.
> However, discussion of the details of the control measures for mumps under the variety of circumstances that may be involved is beyond the scope of this chapter. Detailed guidance on how to identify those exposed and the most up-to-date recommendations for control measures can be found in the chapter on mumps in the excerpts on vaccine-preventable diseases from the DPH *Guide to Surveillance and Reporting* (sent to all schools), as well as in the full *Guide,* published on the DPH website at http://www.mass.gov/dph.

All individuals who are susceptible (those born in or after 1957 without written documentation of immunization or serologic evidence of immunity) should be immunized. Those just vaccinated may return to school immediately afterward. All susceptibles will be excluded from work or classes from the 12th through the 26th day after their last exposure (counting the day of initial parotid swelling as day zero). If multiple cases occur, susceptibles need to be excluded through 26 days after the onset of parotitis in the last case.

See Exhibit 8-4 for acceptable evidence of immunity for control of select vaccine-preventable diseases.

Remember, when case(s) of disease occur, susceptible individuals, including those with medical or religious exemptions, who are not vaccinated also must be excluded for the appropriate time

period as outlined in *Reportable Diseases, Surveillance and Isolation & Quarantine Requirements* (105 CMR 300.000).

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the "Vaccine-Preventable Diseases" heading.

Additional prevention guideline: Initiate control measures prior to laboratory confirmation of the case.

Pertussis (Whooping Cough)

Pertussis begins with mild upper respiratory tract symptoms (catarrhal stage, lasting about 2 weeks) and can progress to severe paroxysms of cough (paroxysmal stage, lasting about 2 weeks), often with a characteristic respiratory whoop, followed by vomiting. Fever is absent or minimal. Symptoms wane gradually (convalescent stage). The duration of classic pertussis is 6–10 weeks, but the duration of illness can vary. While some cases cough for less than 6 weeks, others report coughing for 100 days or longer.

The clinical presentation of pertussis is variable and its diagnosis challenging. Disease in infants younger than 6 months of age may be atypical; apnea may be a common manifestation, and whoop may be absent. Older children and adults also can have atypical manifestations, with persistent cough and no whoop, or they may present with more classic symptoms. Physicians should include pertussis in their differential diagnosis for patients in all age groups who present with a prolonged cough illness.

Pertussis is most severe when it occurs during the first year of life (particularly for preterm infants). Complications include seizures, pneumonia, encephalopathy, and death. The differential diagnosis for pertussis includes infection due to parapertussis, mycoplasma, chlamydia, respiratory syncytial virus (RSV), and adenovirus.

Antibiotic treatment will reduce the infectiousness of an ill person but may not improve symptoms once a person has developed a severe cough. However, antibiotics are crucial in making people noninfectious and therefore preventing the spread of illness to contacts.

Pertussis disease is endemic, with peaks occurring every 2–5 years. Nationwide, the incidence of pertussis in adults and adolescents is increasing. In Massachusetts in the past decade, the number of cases has ranged between 400 and 2,000 per year, with over 90% of cases occurring in individuals 11 years and older. Outbreaks in middle schools and junior and senior high schools are common, and disease in this age group is thought to be due to waning immunity from vaccination. The currently licensed pertussis vaccine is approved only for children younger than 7 years of age, and protection from the vaccine usually wears off by the time children reach adolescence. Adults and teens are thought to be the source of infection for infants with pertussis. In 2005, a booster dose of pertussis was licensed for those 10 years of age and older. It is currently being manufactured and is being distributed as it becomes available. It is anticipated that this vaccine formulation, a combination booster dose of tetanus, diphtheria, and acellular pertussis (DTaP) vaccine, will have a significant impact on the number of cases of pertussis occurring in adolescents and adults.

Transmission: Pertussis is transmitted person-to-person by direct or droplet contact with nasopharyngeal secretions of an infected person. The period of communicability is from 2 weeks before to 3 weeks after cough onset, if the person is not on antibiotics. If on appropriate antibiotics, the period of communicability is from 2 weeks before cough onset through the 5th day of treatment.

Diagnosis: Pertussis can be *presumptively* diagnosed by signs and symptoms. It should be *confirmed* by the appropriate diagnostic test, based on the age of the patient and cough duration. Tests include a nasopharyngeal culture, a PCR test, or a serologic test performed at the Massachusetts State Laboratory Institute.

School attendance guidelines: Exclude a student or staff member with confirmed pertussis until 3 weeks after the onset of cough or after they have completed 5 days of appropriate antibiotic therapy. If contacts of the laboratory-confirmed case are symptomatic, use the same restrictions as for cases.

> To identify those exposed, think in terms of the zones of exposure described in Exhibit 8-5. See the following web page for a table listing the minimum immunizations required for school attendance as of August 2006: http://www.mass.gov/dph/cdc/epii/imm/guidelines_sched/chiimm.pdf. However, discussion of the details of the control measures for pertussis under the variety of circumstances that may be involved is beyond the scope of this chapter. Detailed guidance on how to identify those exposed and the most up-to-date recommendations for control measures can be found in the chapter on pertussis in the excerpts on vaccine-preventable diseases from the DPH *Guide to Surveillance and Reporting* (sent to all schools), as well as in the full *Guide,* published on the DPH website at http://www.mass.gov/dph.

If contacts are asymptomatic and exposed within the past 21 days, it is recommended they receive antibiotic prophylaxis, but no exclusion is required. However, DPH may recommend it in certain high-risk settings or circumstances.

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the “Vaccine-Preventable Diseases” heading.

Additional prevention guidelines:

- Children under 7 years of age who are unimmunized or have fewer than 5 doses of DTaP should be immunized appropriately.
- Exclude all exposed, *symptomatic* susceptibles during the appropriate time period.

Pneumococcal Disease (Invasive)

Pneumococcal disease is caused by the bacterium *Streptococcus pneumoniae,* which can cause pneumonia and acute otitis media as well as bacteremia and meningitis. Invasive disease is most likely to strike in the winter and spring, but cases arise year round. The most common symptoms are chills, fever, chest pain, shortness of breath, and a severe cough. Some people vomit or have seizures.

Invasive pneumococcal disease is one of the most common causes of vaccine-preventable deaths in this country, and the pneumococcus is the leading cause of bacterial meningitis in children under 5. A conjugate vaccine was licensed in 2000 for routine use in healthy children less than 24 months of age and for children 24–59 months of age in high-risk groups, which include children of Alaskan Native, American Indian or African American descent; children who attend group child care; or those with high-risk medical conditions, including cochlear implants. In addition, pneumococcal polysaccharide vaccine 23 valent (PPV23) is recommended for use in children 24

months of age or older and adults with high-risk conditions. Outbreaks are very rare and generally only occur in crowded environments with high-risk populations.

Transmission: Pneumococci are ubiquitous, with many people having colonization in their upper respiratory tracts. The bacteria are spread by direct person-to-person contact, by droplet spread when a person coughs or sneezes, or by direct contact with nasopharyngeal secretions, and most disease is caused by autoinoculation in persons carrying the bacteria in their upper respiratory tract. The organisms that cause disease can live in the nose and throat of healthy children and adults without causing disease.

Diagnosis: Pneumococcal disease is diagnosed by culturing the organism from blood, spinal fluid, or other usually sterile body fluid. It may take up to 72 hours to grow and identify the bacteria. A preliminary diagnosis may be made by looking at a gram stain of an infected fluid.

Treatment: Antimicrobial therapy is recommended for cases of invasive *S. pneumoniae,* but it is not routinely recommended for contacts. However, a case does provide an opportunity to remind contacts with medical conditions placing them at increased risk for invasive pneumococcal disease that they should be up to date on the appropriate pneumococcal vaccination.

School attendance guidelines: There are no restrictions for cases or contacts of cases.

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the “Vaccine-Preventable Diseases” heading.

Polio

Polio is caused by a virus. The overwhelming majority of infections (95%) due to poliovirus are not clinically apparent. Some 4%-8% of infected individuals will experience nonspecific viral symptoms such as low-grade fever, headache, sore throat, nausea, abdominal pain, constipation, diarrhea, and/or vomiting (abortive disease). Some 1%-5% of infections will result in aseptic meningitis a few days after the minor illness has resolved. Only 0.1%-1% of infections will progress to acute flaccid paralysis (AFP) with loss of strength and reflexes in the involved limbs (paralytic poliomyelitis). In these cases, a fever is usually present. Currently the most common cause of AFP in the U.S. is Guillain-Barré Syndrome.

Thanks to the Global Polio Eradication Program, polio no longer occurs in many parts of the world. However, polio could still occur in the U.S. today among unimmunized persons, especially if they travel in countries where polio is still common. Oral polio vaccine is no longer available in the U.S., and the rare cases of vaccine virus that were seen with this live virus vaccine should no longer occur.

Transmission: The principal mode of transmission is person-to-person by the fecal-oral route (most predominant) or the oral-oral route. Transmission via oral secretions such as saliva is possible and may account for some cases. In rare instances, the virus may be transmitted by contaminated sewage or water. The period of communicability is not precisely defined. It appears greatest 7–10 days before and after onset of clinical symptoms, when poliovirus is present in the throat and excreted in the highest quantities in feces. Poliovirus can continue to be shed in feces for 4–6 weeks.

Diagnosis: Because there are many causes of AFP, polio must be laboratory confirmed. Clinical specimens (stool, throat, CSF) need to be collected for viral isolation and typing. Blood tests to detect antibodies must also be done.

School attendance guidelines: Individuals with polio should be excluded for 6 weeks after onset or until the virus can no longer be recovered from feces (the number of negative specimens needed will be determined by DPH on a case-by-case basis). Those with weakened immune systems may excrete the virus for a longer period. Due to the seriousness of this disease, it is unlikely immunosuppressed individuals will return before then.

> To identify those exposed, think in terms of the zones of exposure described in Exhibit 8-5. See the following web page for a table listing the minimum immunizations required for school attendance as of August 2006: http://www.mass.gov/dph/cdc/epii/imm/guidelines_sched/chiimm.pdf.
> However, discussion of the details of the control measures for polio under the variety of circumstances that may be involved is beyond the scope of this chapter. Detailed guidance on how to identify those exposed and the most up-to-date recommendations for control measures can be found in the chapter on polio in the excerpts on vaccine-preventable diseases from the DPH *Guide to Surveillance and Reporting* (sent to all schools), as well as in the full *Guide,* published on the DPH website at http://www.mass.gov/dph.

Remember that when case(s) of polio occur, susceptible individuals, including those with medical or religious exemptions, who are not vaccinated must also be excluded for the appropriate time period.

Current guidelines state that individuals exposed to polio who have completed a primary series consisting of 3 or more doses of polio vaccine and have received at least 1 booster dose do not need to receive another. Those who have received fewer doses should complete the series immediately with inactivated polio vaccine (IPV) but do not need to be excluded. (Oral polio vaccine is currently not available in the United States.) If a case of polio is confirmed, additional immunization recommendations may be made by DPH in consultation with the CDC.

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the “Vaccine-Preventable Diseases” heading.

Additional prevention guidelines:

- Initiate control measures prior to laboratory confirmation of the case.
- Additional recommendations about monitored, enforced handwashing may be made as described in the “Diseases Spread Through the Intestinal Tract” section.

Rubella

Rubella (also called German measles) is a viral illness that is usually very mild, causing a slight fever and a flat, red rash that often begins on the face. Over the course of 24 hours, the rash rapidly generalizes to the rest of the body. The glands of the neck exhibit swelling, particularly those on the back of the neck. The illness lasts about 3 days. Adolescent and adult women may have swelling and aching of the joints for about a week. Rarely, encephalitis (1 in 6,000 cases) or a temporary thrombocytopenia (1 in 3,000 cases) can occur, more commonly in adults. As many as half of all infections occur without rash.

The most serious danger from rubella is that a susceptible, pregnant woman may become infected. Up to 90% of infants born to mothers infected with rubella in the first trimester of pregnancy will develop the physical abnormalities referred to as congenital rubella syndrome (CRS). CRS is

characterized by any of a number of complications and findings, including blindness, heart defects, deafness, behavior disorders, mental retardation, growth retardation, bone disease, enlarged liver and spleen, thrombocytopenia, and purple skin lesions. Some effects may not be apparent at birth.

Most adults born in the U.S. before 1957 have been infected naturally with rubella and are likely to be immune. However, approximately 10% of U.S.-born young adults remain susceptible to rubella due to lack of proper immunization. Rubella is most often seen today in unimmunized individuals, particularly in susceptible adults who graduated from school prior to enactment of rubella vaccination laws and regulations and in those who are foreign-born and were never vaccinated or exposed to rubella in their countries of origin. In recent years in the U.S. and in Massachusetts, outbreaks have occurred among immigrant populations in workplaces and in the community. Schools have also been affected. Those at risk for complications include individuals with weakened immune systems and susceptible women of childbearing age, due to risk of CRS.

Transmission: The virus is transmitted person-to-person by droplet spread through the air by a sneeze, cough, or direct contact with infected nasal secretions or saliva. The infectious period for rubella is usually from 7 days before until 7 days after rash onset. Rubella is similar to influenza and mumps in infectiousness and is not as contagious as measles or chickenpox. While rubella may be spread by the airborne route, such transmission would be very rare in the school setting and should not be considered in determining exposure.

Diagnosis: Rubella can be presumptively diagnosed by signs and symptoms, but it *must* be confirmed by a blood test to detect antibodies (rubella IgM or a fourfold or greater increase in acute and convalescent IgG) that are evidence of recent infection. Specimens (throat swabs and urine) should be obtained for viral isolation. In cases of CRS, nasopharyngeal and urine specimens will be collected.

School attendance guidelines: A student or staff member with rubella may return 7 days after the onset of the rash (counting the day of rash onset as day zero).

> To identify those exposed, think in terms of the zones of exposure described in Exhibit 8-5. See the following web page for a table listing the minimum immunizations required for school attendance as of August 2006:
> http://www.mass.gov/dph/cdc/epii/imm/guidelines_sched/chiimm.pdf.
> However, discussion of the details of the control measures for rubella under the variety of circumstances that may be involved is beyond the scope of this chapter. Detailed guidance on how to identify those exposed and the most up-to-date recommendations for control measures can be found in the chapter on rubella in the excerpts on vaccine-preventable diseases from the DPH *Guide to Surveillance and Reporting* (sent to all schools), as well as in the full *Guide,* published on the DPH website at http://www.mass.gov/dph.

All individuals who are susceptible (those born in or after 1957 without written documentation of immunization or serologic evidence of immunity) should be immunized. However, unlike with measles, prompt immunization after exposure to rubella will *not* prevent disease in those exposed, but it will protect them from disease from future exposures. If only one case of rubella occurs, susceptibles, including those just immunized, must be excluded from days 7 through 21 after their last exposure to the case (counting the day of rash onset as day zero). If multiple cases arise, susceptibles must be excluded for 21 days after the onset of rash in the last reported case. Unimmunized persons must also be excluded until 21 days after the date of rash onset in the last case.

See Exhibit 8-4 for acceptable evidence of immunity for the control of select vaccine-preventable diseases.

Remember that when case(s) of disease occur, susceptible individuals, including those with medical or religious exemptions, who are not vaccinated also must be excluded for the appropriate time period as outlined in *Reportable Diseases, Surveillance and Isolation & Quarantine Requirements* (105 CMR 300.000).

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the “Vaccine-Preventable Diseases” heading.

Additional prevention guidelines: Initiate control measures prior to laboratory confirmation of the case.

Tetanus

Tetanus is caused by a potent exotoxin produced by *Clostridium tetani,* a spore-forming, anaerobic, gram-positive bacillus. *Clostridium tetani* is a normal inhabitant of soil and of animal and human intestines, and it is ubiquitous in the environment.

Generalized tetanus is an acute and often fatal neurologic disease characterized by painful skeletal muscular contractions. Onset is gradual, occurring over 1–7 days. Muscle stiffness usually first involves the jaw (lockjaw) and neck and progresses to severe generalized muscle spasms, which frequently are aggravated by any external stimulus. Severe spasms persist for a week or more and then subside, over a period of weeks, in those who recover.

Complications of the disease include laryngospasm (spasm of the vocal cords) and/or spasm of the muscles of respiration, leading to interference with breathing; fractures of the spine or long bones, which may result from sustained contractions and convulsions; and hyperactivity of the autonomic nervous system, which may lead to hypertension and/or abnormal heart rhythm. The case-fatality rate ranges from 10%–90%; it is highest in infants and the elderly.

Almost all reported cases of tetanus have occurred in individuals who had never been vaccinated or who completed a primary series, but had not had a booster dose in the preceding 10 years. Ninety percent of cases that were seen acutely did *not* receive the appropriate treatment.

After the childhood primary immunization, a booster dose of tetanus diphtheria toxoid (Td) is recommended for children at entry into seventh grade (age 11 and 12 years), if 5 or more years have elapsed since the last dose. In adults, Td boosters are currently recommended every 10 years.

To prevent tetanus, it is important to make sure all cuts, scrapes, and puncture wounds are cleaned well with soap and water; individuals who have sustained deep or severe wounds should be referred for medical attention. Older individuals whose immunizations may not be up to date should consult a physician about treatment.

Tetanus disease does not confer immunity. Patients who survive the disease should be given a complete series of vaccine.

Transmission: Tetanus is *not* transmitted person-to-person. Wounds, recognized or unrecognized, are the sites at which the organism enters, multiplies, and produces toxin. Cases of tetanus have followed injuries considered too trivial for medical consultation.

School attendance guidelines: Students and staff should stay home until they feel well.

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the "Vaccine-Preventable Diseases" heading.

DISEASES SPREAD THROUGH THE INTESTINAL TRACT

Diseases in this category are caused by organisms (viruses, bacteria, or parasites) that multiply in the intestines and are passed out of the body in the stool and, in some cases, in vomit (norovirus). These diseases can occur in anyone, and they generally can occur repeatedly (except for hepatitis A). If stool or vomit containing these organisms contacts hands or objects, disease-causing organisms can inadvertently be ingested. Because swallowing even a very few hepatitis A virus, *Shigella, Cryptosporidium, Giardia,* or norovirus organisms can cause illness, these diseases are easily spread from person-to-person. *Salmonella* and *Campylobacter* organisms must be ingested in larger quantities to cause illness.

Students or staff who have hand-to-stool contact may facilitate transmission. Students or staff with disease-causing organisms in their stool may not act or feel sick or have diarrhea. Laboratory tests are the only means of confirming the presence of these organisms, and these tests may be performed even in asymptomatic individuals as part of an effort to control an outbreak of disease.

Reporting Requirements

In addition to the reporting requirements of the individual disease, any clusters of vomiting or diarrhea must be reported to the local board of health. People have diarrhea when they have stools of increased volume or frequency and the stools are loose, watery, or unformed.

Because students and staff who have intestinal tract diseases do not always feel sick or have diarrhea, the best method for preventing spread of these diseases is an ongoing prevention program. In the school setting, the best prevention program is to promote handwashing after using the bathroom and before preparing or eating food. In addition, it is important to ensure that bathrooms have an adequate supply of soap (preferably liquid), running water, paper towels, and toilet paper.

Infectious diarrhea is caused by viruses, parasites, or bacteria and can be spread quickly from person-to-person. Noninfectious diarrhea can be caused by chronic disease (e.g., Crohn's disease), changes in diet, or antibiotics (e.g., ampicillin), among other causes, and does not spread person-to-person.

This section gives detailed information on infectious diarrhea caused by *Giardia, Shigella, E. coli* O157:H7*,* noroviruses, *Salmonella,* hepatitis A, and *Campylobacter.* Other infectious diarrheal agents, including parasites (e.g., *Cryptosporidium, Amoeba),* bacteria (e.g., *Yersinia)* and viruses (e.g., *Rotavirus*) are not discussed in detail, but the general prevention guidelines in this section apply to all of these organisms.

School Attendance and Return Guidelines for Infectious Diarrhea:

- When students or staff have uncontrolled, severe, or bloody diarrhea and fever or vomiting, or if diarrhea cannot be contained by diapers (in those students using them), exclude them until fever and diarrhea are gone and the individuals have been treated, if necessary.
- When students or staff have mild diarrhea, take special precautions or exclude.
- When students or staff who do not prepare food or feed students are found to have infectious diarrheal organisms in their stool (positive stool tests) but have no diarrhea or illness symptoms, take special precautions but do not exclude them. However, during outbreaks, a negative stool test may be required to permit attendance.
- When staff who prepare food or feed children have positive stool tests, exclude them from these duties until the isolation and quarantine (105 CMR 300.000) back-to-work requirements are met regarding that particular organism. Some organisms such as *Campylobacter* require one negative stool (taken 48 hours after medication is completed, if antibiotics are used). Outbreak situations and other organisms such as *Shigella* or *E. coli* O157:H7 may have more stringent criteria.

Prevention Guidelines for Infectious Diarrhea:

- Strictly enforce all handwashing, bathroom, diapering, and cleanliness procedures.
- Carefully monitor field trips to farms, cider mills, and petting zoos. Students should not be allowed to drink raw or unpasteurized milk or apple cider, and they should wash their hands after contact with any animals. If handwashing facilities will not be available, provide students with waterless, alcohol-based hand sanitizers.
- Be careful about choosing pets for the classroom. Reptiles such as snakes, iguanas, and turtles can shed salmonella and are poor choices as classroom pets.
- When hosting live animal shows, discourage contact with animals, or enforce strict handwashing measures if contact occurs.
- Enforce environmental cleaning and sanitation.
- Instruct students and staff not to share food, drink, or eating/drinking utensils. Sharing of water bottles by sports teams should be particularly discouraged.
- Keep track of the number of cases of diarrhea.
- If the number of cases increases relative to what is expected in the school, call the local board of health and take the following additional precautions.

Additional Precautionary Measures for Infectious Diarrhea:

- Monitor enforced handwashing for students, staff, and volunteers. Everyone should wash his or her hands upon arrival at school, after using the bathroom themselves or toileting a child, before eating or preparing food, or after contact with other body fluids such as nasal secretions and saliva.
- *A handwashing checklist is available from DPH for use during outbreaks.*
- Monitor bathrooms daily to ensure an adequate supply of soap (preferably liquid), running water, paper towels, and toilet paper. Bathrooms should be thoroughly cleaned and sanitized daily, or more often if indicated. *A bathroom checklist and handwashing poster are available from DPH for use during outbreaks*. *Handwashing posters should be prominently displayed by all sinks.*
- Increase attention to environmental cleaning and sanitation in all settings.

Depending on the circumstances, such as the number of ill students and staff, their symptoms, and the organism causing the illnesses, some students and staff may be required by state or local public health officials to submit one or more negative stool test results before returning to school. Requirements for staff who handle food or feed students may be more stringent.

Salmonella

The bacterial genus *Salmonella* includes a family of bacteria that cause diarrhea, accompanied by stomach cramps, pain, and fever. One species of *Salmonella,* the typhoid bacillus *S. typhi,* is a particular human pathogen that typically causes disease unlike that discussed here, i.e., salmonellosis (see below). Symptoms usually occur from 6–48 hours after bacteria are ingested and often disappear, without treatment, in a matter of days. However, bacteria may be present in the stool for several weeks after the diarrhea is gone. In rare cases, *Salmonella* may cause a bloodstream infection or infect a part of the body such as a joint. *Salmonella* can cause severe infections in those with underlying diseases such as sickle cell anemia or cancer. People who do not have diarrhea but are passing *Salmonella* bacteria in their stools are considered carriers of the infection.

Transmission: The most common way *Salmonella* is transmitted is ingestion of contaminated food or water. This includes raw or undercooked poultry, eggs, and egg products; undercooked meats; and raw milk or milk products. Outbreaks have also been traced to the consumption of raw fruits and vegetables contaminated during slicing. In addition, reptiles such as iguanas, turtles, and lizards are chronic carriers of these bacteria.

Even though a very large number of *Salmonella* bacteria must be ingested to cause illness, *Salmonella* can still be transmitted from person to person when fecal matter on hands, objects, or food is spread to others' hands or mouths. *Salmonella* can be shed in the stool for many weeks. Individuals with this illness are infectious until the bacteria are no longer present in their stool.

Diagnosis: A stool culture must be performed. Up to 72 hours may be required to grow bacteria from a stool sample.

Treatment: As in all diarrheal illness, maintenance of hydration is critical. Salmonella infections usually resolve in 5-7 days and often do not require treatment unless the patient becomes severely dehydrated or the infection spreads from the intestines. Antibiotics are usually not prescribed for *Salmonella* because they do not shorten the illness and may actually lengthen the time the bacteria are found in the stool.

School attendance guidelines: See school attendance and return guidelines for infectious diarrhea in the introduction to this section.

Reporting requirements: A case of *Salmonella* infection must be reported to the local board of health.

Notification guidelines: When *Salmonella* occurs within the school population, the school nurse and school physician should determine, based on judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. (See Exhibit 8-6 for a sample letter to parents/guardians about diarrheal diseases.) Fact sheets from DPH should accompany the notification letter.

Family and household members in contact with a person with *Salmonella* diarrhea should be made aware of their possible exposure to the bacteria, especially if the individuals are involved in food handling or preparation. If they develop diarrhea, they should immediately see their health care provider and get a stool culture.

Prevention guidelines: Careful attention to good hygiene, handwashing, and environmental cleaning and sanitation is very important in reducing spread of *Salmonella*. Schools should avoid choosing reptiles as classroom pets. Reptiles are chronic carriers of *Salmonella,* and strict handwashing policies must be followed if reptiles are kept in the classroom or if classrooms are visited by reptile shows. Carefully monitor field trips to farms, cider mills, and petting zoos. Students should not be allowed to drink raw or unpasteurized milk or apple cider, and they should wash their hands after contact with any animals. If handwashing facilities will not be available, provide students with alcohol-based hand sanitizers. For additional guidelines, refer to the introduction to this section.

Note: *Salmonella typhi* causes a more serious infection called typhoid. This illness takes longer to develop (3–60 days). People with typhoid fever typically do not experience diarrhea and vomiting but do have fever, lethargy, anorexia, malaise, and headache. Not many cases of typhoid fever occur in the United States. In those that do occur, among 70% of affected individuals have traveled internationally. Because typhoid fever can be very serious, more stringent control measures are recommended. Food workers who have typhoid fever or who are contacts of people with typhoid fever must be excluded from work until they prove that they do not have these bacteria in their stool.

Shigella

The genus *Shigella* includes a family of bacteria that can cause diarrhea (sometimes bloody), fever, nausea, vomiting, stomach cramps, and dehydration, although some infected people exhibit no symptoms at all. Illness typically begins 2–4 days after ingesting the bacteria. Although symptoms can disappear after just a few days even without treatment, bacteria may still be passed in the stool for several more weeks.

Transmission: Because ingesting as few as 10 *Shigella* bacteria can cause infection, it can be a significant problem in groups of people that share close contact, e.g., household and school settings, or in settings where individuals are not continent of stool. *Shigella* is most common in children younger than 5. It is transmitted when stool on hands or objects is spread to others' hands or mouths. It can also be spread through stool-contaminated food, drink, or water. People with this illness are infectious until the bacteria are no longer present in their stool.

Diagnosis: A stool culture must be performed. Up to 72 hours may be required to grow the bacteria from a stool sample.

Treatment: Most infections with *Shigella* are self-limited (48–72 hours) and may not require antibiotics. However, children and adults who have *Shigella* in their stool are often given antibiotic medication because it can shorten both the duration of the illness and the length of time that bacteria are passed in the stool. As in all diarrheal illness, maintenance of hydration is critical.

School attendance guidelines: See school attendance and return guidelines for infectious diarrhea in the introduction to this section.

Reporting requirements: A case of *Shigella* must be reported to the local board of health.

Notification guidelines: When *Shigella* occurs in the school population, the school nurse and school physician should determine, based on their medical judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. (See Exhibit 8-6 for a sample letter to parents/guardians about diarrheal diseases.) Fact sheets from DPH should accompany this notification.

Family and household members in contact with a person with *Shigella* diarrhea should be informed of possible exposure to the bacteria, especially if they are involved in food handling or preparation. If they develop diarrhea, they should immediately see a health care provider and get a stool culture.

Prevention guidelines: Careful attention to good hygiene, handwashing, environmental cleaning, and sanitation is very important in reducing the spread of *Shigella*.

Additional necessary measures during outbreaks: Since *Shigella* is very easily transmitted from person-to-person, staff and students should be reminded not to share food, drink, or eating utensils during an outbreak. It is essential to strictly follow the *Additional Precautionary Measures* outlined in the introduction to this section. Handwashing should be monitored and enforced and handwashing facilities properly supplied.

Campylobacter

Campylobacter jejuni and some other less common members of this bacterial genus cause diarrhea with fever, abdominal pain, fatigue, nausea, and vomiting. Diarrhea may be severe and bloody. *Campylobacter* infections occur 1–7 days after bacteria are ingested. Most people recover in less than a week, but around 20% suffer relapse or more severe infection. Even without treatment, however, most people will only have these bacteria in their stool for 2–3 weeks.

Transmission: *Campylobacter* is most commonly transmitted through the ingestion of contaminated food or water. This includes raw or undercooked food products from poultry or other animals. Outbreaks have occurred among schoolchildren who drank unpasteurized milk on field trips to dairy farms. Other sources of *Campylobacter* can include farm animals and pets, including dogs, cats, hamsters, and birds. These bacteria can also be spread person-to-person when stool on hands or objects is spread to others' hands or mouths. Infected individuals are contagious until the bacteria are no longer in their stool, but they are most contagious when they have acute symptoms.

Diagnosis: A stool culture must be performed. Up to 72 hours may be required to grow the bacteria from a stool sample.

Treatment: People with *Campylobacter* in their stool are usually given antibiotics to shorten the duration of illness and prevent relapse. Antibiotics are usually effective within 2 or 3 days. As in all diarrheal illness, maintenance of hydration is critical.

School attendance guidelines: See school attendance and return guidelines for infectious diarrhea in the introduction to this section.

Reporting requirements: A case of *Campylobacter* infection must be reported to the local board of health.

Notification guidelines: When *Campylobacter* infection(s) occurs within the school population, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. (See Exhibit 8-6 for a sample letter to parents/guardians about diarrheal diseases.) Fact sheets from DPH should accompany this notification.

Family and household members in contact with a person with *Campylobacter* diarrhea should be made aware of their possible exposure to the bacteria, especially if the individuals are involved in food handling or preparation. If they develop diarrhea, they should immediately see a health care provider and get a stool culture.

Prevention guidelines: Careful attention to good hygiene, handwashing, environmental cleaning, and sanitation is very important in reducing spread of *Campylobacter*. Carefully monitor students on field trips to farms, cider mills, and petting zoos. Students should not be allowed to drink raw or unpasteurized milk or apple cider, and they should wash their hands after contact with any animals. If handwashing facilities will not be available, provide students with alcohol-based hand sanitizers.

E. coli O157:H7

E. coli O157:H7 is one of hundreds of strains of the bacterium *Escherichia coli*. Although most strains are harmless and live in the intestines of healthy humans and animals, this particular strain produces a powerful toxin, called a Shiga toxin, which can cause severe illness. *E. coli* O157:H7 was first recognized as a cause of illness in 1982 during an outbreak of severe bloody diarrhea; the outbreak was traced to contaminated hamburgers. Since then, most infections have come from eating undercooked ground beef. Although other strains of *E. coli* produce Shiga toxins as well, *E. coli* O157:H7 has been the most commonly identified. In the future, other Shiga toxin-producing strains of *E. coli* may become more important as causes of disease.

Infection with *E. coli* O157:H7 may present with a wide spectrum of clinical manifestations. An individual may be asymptomatic, have mild, nonbloody diarrhea, or have severe, bloody diarrhea. Usually little or no fever is present. The incubation period for *E. coli* O157:H7 typically is 3–4 days, but ranges from 1–8 days.

In some persons, particularly children under 5 and the elderly, the infection can also cause a life-threatening complication called hemolytic uremic syndrome, in which small blood vessels become obstructed, red blood cells are destroyed, and kidneys fail. About 5%–10% of infections lead to this complication, which usually requires intensive care. Blood transfusions and kidney dialysis are often required. With intensive care, the death rate for hemolytic uremic syndrome is 3%–5%. In the U.S., hemolytic uremic syndrome is the principal cause of acute kidney failure in children, and most cases of hemolytic uremic syndrome are associated with *E. coli* O157:H7 infection.

Transmission: *E. coli* O157:H7 can be transmitted fecal-orally through food (particularly undercooked ground beef, salami, and raw vegetables), unpasteurized milk, apple juice or cider, drinking water, or recreational water contaminated with human or animal feces containing the bacteria. Outbreaks have occurred among schoolchildren in conjunction with field trips to dairy farms and cider mills. It takes very few of these bacteria to cause illness, and the bacteria can easily be spread person-to-person, when stool gets on hands or objects and is spread to others' hands or mouths. Young children typically shed the organism in their feces for a week or two after their illness resolves. Older children rarely carry the organism without symptoms.

Diagnosis: A stool culture must be performed. Up to 72 hours may be required for valid test results. All persons who suddenly have diarrhea with blood should have their stool tested for *E. coli* O157:H7.

Treatment: Most persons recover in 5–10 days, without antibiotics or other specific treatment. There is no evidence that antibiotics improve the course of disease, and it is thought that treatment with some antibiotics may actually lead to complications, including hemolytic uremic syndrome. As in all diarrheal illness, maintenance of hydration is critical.

School attendance guidelines: See school attendance and return guidelines for infectious diarrhea in the introduction to this section.

Reporting requirements: A case of *E. coli* O157:H7 infection must be reported to the local board of health.

Notification guidelines: When *E. coli* O157:H7 infection occurs in the school population, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. (See Exhibit 8-6 for a sample letter to parents/guardians about diarrheal diseases.) Fact sheets from DPH should accompany this notification.

Family and household members in contact with a person with *E. coli* O157:H7 diarrhea should be made aware of their possible exposure to the bacteria, especially if the individuals are involved in food handling or preparation. Those who develop diarrhea should immediately see a health care provider and get tested.

Prevention guidelines: Careful attention to good hygiene, handwashing, environmental cleaning, and sanitation is very important in reducing spread. Carefully monitor field trips to farms, cider mills, and petting zoos. Students should not be allowed to drink raw or unpasteurized milk or apple cider, and they should wash their hands after contact with any animals. If handwashing facilities will not be available, provide students with alcohol-based hand sanitizers.

Giardia

Giardia lamblia is a protozoan parasite that can cause acute and chronic diarrhea, stomach cramping, bloating, pale and foul-smelling stools, weight loss, and fatigue. Symptoms usually appear 7–10 days after ingestion of the organism, but the interval can sometimes be as long as 4 weeks. The infectious form of *Giardia* is a cyst that is resistant to drying and inactivation in the environment. Cysts are shed in the stool. Some people with *Giardia* have no symptoms but still pass *Giardia* cysts in their stools.

Transmission: The principal mode of transmission of *Giardia* is person-to-person, when stool on hands or objects is spread to others' hands or mouths. *Giardia* can spread quickly in environments or settings where individuals are not continent of stool or where surfaces have been contaminated by stool. Localized outbreaks may occur from fecally contaminated water, such as stream/lake waters and swimming pools that are open to contamination by human and animal feces. Cysts can be shed in stool for many weeks, and people are infectious as long as they are excreting cysts. Giardiasis can be a prolonged and relapsing illness. Some individuals develop lactose intolerance after giardiasis and may have persistent bouts of diarrhea, despite elimination of infection.

Diagnosis: The most common way to determine whether a person has *Giardia* is to examine stool under a microscope to look for the cysts. Because *Giardia* cysts are present in stools only sporadically, several examinations over time are required. Other tests can be done on stool to look for antibodies.

Treatment: Individuals with *Giardia* who are ill and/or have diarrhea are usually given medication. Treatment of infected individuals who do not have symptoms is generally not recommended. As in all diarrheal illness, maintenance of hydration is critical.

School attendance guidelines: See school attendance and return guidelines in the introduction to this section.

Reporting requirements: A case of *Giardia* infection must be reported to the local board of health.

Notification guidelines: When *Giardia* infection occurs in the school population, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. (See Exhibit 8-6 for a sample letter to parents/guardians about diarrheal diseases.) Fact sheets from DPH should accompany this notification.

Inform family and household members in contact with a person with *Giardia* diarrhea of their possible exposure to this parasite, especially if they are involved in food handling or preparation. Those who develop diarrhea should immediately see a health care provider and get a stool test.

Prevention guidelines: Careful attention to good hygiene, handwashing, environmental cleaning, and sanitation is very important in reducing spread of *Giardia*.

Norovirus

Noroviruses are a group of viruses that cause diarrhea and vomiting, sometimes accompanied by fever, headache, and abdominal cramps. Illness typically begins 12–72 hours after the virus is ingested. Symptoms usually last 1 or 2 days, but some infected people may feel sick for as long as 2 weeks. Shedding of the virus in stool and vomit can last as long as 13 days.

Transmission: Most norovirus infections have been detected in children under 4, but outbreaks have occurred in all age groups, with a high rate of transmission in situations such as child care centers and cruise ships. Norovirus is transmitted when stool or vomit on hands or objects is spread to others' hands or mouths. It can also be spread through food, drink, or water contaminated with stool or vomit. This virus spreads easily because people can still shed this virus after they feel well, and it takes very few viral particles to cause illness.

Diagnosis: Norovirus can be diagnosed by testing stool or vomit from an infected person, but only a few laboratories are able to perform this test. Therefore, diagnosis is usually based on clinical symptoms. DPH will perform this test in outbreak situations, and sometimes when food handlers are ill.

Treatment: No specific treatment is available for norovirus infection. As in all diarrheal illness, maintenance of hydration is critical. Norovirus cannot be treated with antibiotics. Although some people with this infection may require supportive care, most get better without medical attention in a day or two.

School attendance guidelines: See school attendance and return guidelines for infectious diarrhea in the introduction to this section.

Reporting requirements: A case of norovirus infection or any clusters of vomiting or diarrhea must be reported to the local board of health. On the following web page, which lists reportable diseases, norovirus is covered under the category of calicivirus infection: http://www.mass.gov/dph/cdc/surveillance/rprtbldiseases_hcp.pdf.

Notification guidelines: When norovirus infection occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and

staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. (See Exhibit 8-6 for a sample letter to parents/guardians about diarrheal diseases.) Fact sheets from DPH should accompany this notification.

Inform family and household members in contact with a person with norovirus infection of their possible exposure to the virus, especially if they are involved in food handling or preparation. Those who develop vomiting or diarrhea should immediately see a health care provider.

Prevention guidelines: Careful attention to good hygiene, handwashing, environmental cleaning, and sanitation is very important in reducing spread of norovirus.

Additional necessary measures during outbreaks: Since norovirus is very easily transmitted person-to-person, staff and students should be reminded not to share food, drink, or eating utensils during an outbreak. It is essential to strictly follow the precautionary measures outlined in the introduction to this section. Monitor and enforce handwashing and ensure that handwashing facilities are properly supplied. When norovirus outbreaks are identified, thorough environmental cleaning is essential, especially where vomiting has occurred.

Pinworms

Pinworms are tiny worms that infect humans and live in the lower intestine. Female worms (resembling short, white threads less than 2 inches long) emerge from the anus at night and lay their microscopic eggs around the opening, often causing intense itching. The time from ingestion of an egg until the adult migrates to the perianal region is 1–2 months or longer.

Transmission: In the past, it was estimated that 5%–15% of the U.S. population had pinworms, but prevalence seems to have decreased. Rates may be higher, however, in certain groups such as preschool- and school-age children, institutionalized individuals, and primary caregivers of infected children. Members of an infected person's household can be infected and can reinfect a treated individual. When children or adults scratch the affected area, microscopic pinworm eggs may be transferred to someone else's mouth or food via the fingers, and individuals may also be reinfected by ingesting eggs on their own hands. Pinworms can be indirectly spread through contact with clothing or bedding that has been contaminated with eggs. The period of infectivity lasts as long as eggs are being discharged around the anus. Eggs remain infective in an indoor environment for 2–3 weeks. Humans are the only known hosts.

Diagnosis: Since the worms crawl out through the anus at night to lay their eggs while the child sleeps, the easiest way to find them is to inspect a 1-inch circular area around the child's anus about 2-3 hours after the child has gone to sleep. By spreading the buttocks and looking with a flashlight, it is possible to see the worms crawling toward the opening of the anus. A health care provider can make the diagnosis by having the adult caring for the child apply the sticky side of transparent tape around the anal area, so eggs will stick to it. The best time is upon awakening in the morning, before bathing. The tape is then placed sticky side down on a slide and examined under a microscope.

Treatment: Several medications are available for treatment of this infection. Often the health care provider will treat the whole family, especially if re-infections have occurred. Treatment is usually repeated 2 weeks later.

School attendance guidelines: Because pinworms are not considered an emergency, students or staff identified with pinworms do not need to be sent home from school. Ask parents/guardians to

take infected children to a health care provider for diagnosis and treatment. Infected individuals may return after treatment has begun.

Reporting requirements: Pinworm infection is not reportable to local or state health authorities.

Notification guidelines: When pinworm infection occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified, so they can watch for symptoms in themselves and their children. Parent/guardian notification should also be discussed with the school administrator. (See Exhibit 8-7 for a sample letter to parents/guardians about pinworms.)

Prevention guidelines: Follow handwashing and cleanliness procedures. Careful attention to good hygiene, handwashing, environmental cleaning, and sanitation is very important in reducing spread.

Hepatitis A

Hepatitis A is an infection of the liver caused by the hepatitis A virus. It is spread through the intestines and stool. The illness usually occurs 15–50 days after the virus is ingested. Adults who have hepatitis A often suffer from fatigue, loss of appetite, nausea, abdominal pain, fever, and jaundice (yellowing of the skin and whites of the eyes, as well as dark-brown urine and light-colored stools). These symptoms usually last from 1–2 weeks, although some adults may be sick for several months. Most young children infected with the virus have only a mild flu-like illness, without jaundice, or have no symptoms at all. Hepatitis A is rarely fatal and has no chronic carrier state. It is clinically indistinguishable from other types of hepatitis. Infection with hepatitis A confers lifelong immunity.

Transmission: The principal mode of transmission of hepatitis A is direct or indirect person-to-person spread, via the fecal-oral route. Persons become infected by ingesting the virus through stool-contaminated food or drink, or through contact with contaminated environmental surfaces, or with someone who has hepatitis A. Since it takes very few viral particles to make someone ill, this infection spreads quickly in groups of children who do not yet use the toilet and cannot wash their own hands well. Because most young children with hepatitis A do not become ill, the first sign of the infection is often a jaundiced parent or staff member. A person is most contagious during the 2 weeks before the illness begins, when stool contains the highest concentration of virus particles. The risk of transmission then diminishes and is minimal by 1 week after the illness starts. Hepatitis A virus is found in the blood for a very short time.

Diagnosis: A blood test is available to determine if a person has ever had hepatitis A, and another test can determine if a person has been infected more recently. The results of the blood test, in conjunction with symptoms or abnormal liver function tests, are the basis for diagnosis.

Treatment: Treatment for hepatitis A infection is supportive. However, immune globulin (IG), when given within 2 weeks of exposure, is more than 85% effective in preventing symptomatic illness. A vaccine is available to prevent hepatitis A, but it is recommended only for those groups of individuals at high-risk of contracting the infection.

School attendance guidelines: Children and adults with acute hepatitis A should be excluded from school for 1 week after the onset of the illness or until their fever has resolved, whichever is later.

Reporting requirements: A case of hepatitis A must be immediately reported to the local board of health (or DPH, if the local board of health is not available).

Notification guidelines: When hepatitis A occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. See Exhibit 8-8 and Exhibit 8-9 for sample letters to parents/guardians about hepatitis A. Fact sheets are available from DPH and should accompany this notification.

Prevention guidelines: Classroom exposure to hepatitis A generally does not pose a significant risk of infection, and IG is not usually indicated for classroom contacts of a single case of hepatitis A. However, IG may be given to those who have close personal contact (e.g., sharing food or eating or drinking utensils, sexual contact) with infected individuals. This may include members of sports teams who regularly share water bottles, or close friends of the case who regularly share food, drinks, or cigarettes. The use of IG may also be more widely recommended in the school setting, if ongoing transmission is identified.

If a case of hepatitis A occurs in a kindergarten, first-grade, or preschool class where hygiene may not be optimal, or in a group of students who may not be continent of stool, more stringent control measures, including the use of IG, may be indicated. The local board of health can provide recommendations.

Other prevention guidelines:

- Strictly enforce handwashing and cleanliness rules and ensure that all bathrooms are properly supplied with soap, running water, paper towels, and toilet paper.
- Request that all parents/guardians and staff notify the school if any person in their household is diagnosed with hepatitis A.
- If a household member becomes ill with hepatitis A, all other members should contact their health care provider. An injection of IG is usually recommended for household contacts.
- While the Advisory Committee on Immunization Practices (ACIP) now recommends hepatitis A vaccine for certain groups of individuals, such as international travelers, the current incidence of hepatitis A in Massachusetts does not warrant routine childhood vaccination. If a major outbreak occurs in a community or larger area, DPH may determine, based on local epidemiologic data and ACIP guidelines, that mass vaccination of certain groups is warranted.

Hand, Foot, and Mouth Disease (Coxsackievirus)

Hand, foot, and mouth disease is a common illness of infants and children. It is caused by a group of viruses called enteroviruses, most commonly coxsackievirus. It usually begins with mild fever, poor appetite, malaise, and sore throat. One or two days after the fever begins, sores develop in the mouth, usually on the tongue, gums, and inside of the cheeks. A skin rash, usually located on the palms of the hands and soles of the feet, with flat or raised red spots and sometimes blisters, develops over 1–2 days. The rash does not itch. Most people get sick 3–7 days after being exposed to the virus.

Hand, foot, and mouth disease is usually mild, and nearly all patients recover without medical treatment in 7–10 days. Rarely, the patient with coxsackievirus infection may also develop viral meningitis and be hospitalized. Symptoms to watch for are fever, headache, stiff neck, or back pain.

Transmission: Both adults and children can become ill with hand, foot, and mouth disease, but it is most common among children under 10. Infection is spread person-to-person by direct or

indirect contact with stool, nose and throat discharges, saliva, or fluid from the blisters. The virus can be transmitted from hands or objects to other people's hands and mouths. A person is most contagious during the first week of the illness, but people can shed the virus for many weeks, especially in the stool.

Diagnosis: Diagnosis is usually based on signs and symptoms. A throat swab or stool specimen may be sent to a laboratory to determine which enterovirus caused the illness, but since testing often takes 2–4 weeks, these tests are usually not ordered.

Treatment: No specific treatment is available for hand, foot, and mouth disease, although health care providers may provide treatment to relieve symptoms.

School attendance guidelines: There is no need to exclude anyone who is well enough to attend school.

Reporting requirements: Hand, foot, and mouth disease is not reportable to local or state health authorities.

Notification guidelines: When hand, foot, and mouth disease occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH or the local board of health. Parent/guardian notification should also be discussed with the school administrator. See Exhibit 8-10 for a sample letter to parents/guardians about hand, foot, and mouth disease.

Prevention guidelines: Follow strict handwashing and personal hygiene procedures. Always wash hands after using the bathroom, after diapering or assisting a student in the bathroom, and before eating or handling food. Careful attention to environmental cleaning and sanitation is also very important in reducing spread. For additional prevention guidelines, see the "Infection Prevention and Control in the School Setting" section in this chapter.

DISEASES SPREAD THROUGH THE RESPIRATORY TRACT

Respiratory tract diseases are spread primarily through microscopic infectious droplets (droplet transmission) generated in or settling on the mucous membranes of the nose, mouth, throat, or eye. These droplets are generated by a person primarily during coughing, sneezing, talking, or noseblowing. Group A streptococcus and *Neisseria meningitidis* are examples of bacteria that are droplet-borne. Airborne transmission of infectious particles is less frequent and occurs when very small (≤ 5μm) particles remain suspended in the air for long periods of time, or when dust particles contain the infectious agent. Measles and tuberculosis are examples of diseases spread through airborne transmission.

Whether or not objects can be a source of spread depends on the infectious organism. For some organisms, fomites — inanimate objects that, when contaminated with a viable pathogen, can transfer the pathogen to a host — do not play an important role in disease transmission. Tuberculosis and invasive meningococcal disease are two such examples. Other organisms, such as those that cause strep throat and the common cold, can be easily spread this way, when droplets containing organisms get on objects such as books, pencils, toys, pens, or food and are touched, mouthed, or eaten by others. Students often fail to wash their hands after touching their noses or eyes and are in constant physical or oral contact with objects around them, which can then transmit germs to other students and adults.

Respiratory tract diseases may be mild (viral colds and strep throat) or life-threatening (bacterial meningitis). Some of these diseases are more common in children; others, like the viral cold, affect all ages fairly equally.

Prevention Guidelines:

- Handwashing and cleanliness are essential to stop the spread of all respiratory tract diseases. Hands should be washed with soap and warm running water or an alcohol-based hand sanitizer.
- Encourage staff and students to wash their hands after wiping or blowing noses; after contact with any nose, throat, or eye secretions; and before preparing or eating food.
- Keep a supply of disposable towels, alcohol-based hand gel, and tissues in each classroom, and encourage their use.
- Dispose of towels or tissues contaminated with nose, throat, or eye fluids in a step-can with a plastic liner. Keep them away from food and classroom materials.
- Teach children and staff to cough or sneeze toward the floor or to one side, away from people. If they sneeze or cough into a hand or tissue, they must properly dispose of the tissue and wash their hands.
- Discourage the sharing of food and/or beverages, including water bottles.

Colds and Influenza

Colds are mild infections of the nose and throat caused by many different viruses. The most common of these are rhinoviruses. Cold symptoms often come on gradually and may include rhinorrhea, pharyngitis, coughing, sneezing, watery eyes, otitis media, low-grade fever, malaise, and headache. *Influenza* is also caused by viruses (influenza A or B) and is characterized by the sudden onset of high fever, chills or rigors, headache, malaise, diffuse myalgia, and nonproductive cough. Most people with influenza feel too ill to go to school or work.

Transmission: Respiratory viruses, including influenza viruses, are spread person-to-person by droplets or direct contact with articles recently contaminated with respiratory secretions. The virus concentration in respiratory secretions is often highest at onset and up to 1–2 days before a person develops symptoms of illness. As a result, infected persons may have already spread viruses before they begin to feel ill. Viruses may continue to be present in respiratory secretions for 2–5 days after symptoms begin (this is variable and depends upon the virus causing the illness), and even longer in children and people who are immunocompromised. In fact, persons may have mild colds that may go unrecognized but still allow them to spread illness to others.

Diagnosis: These viral illnesses are usually diagnosed by their symptoms. Laboratory culture of the respiratory viruses that cause the common cold is possible, but the testing is time-consuming, expensive, and usually unnecessary. Influenza testing is available and may be ordered by a health care provider if appropriate.

Treatment: Rest and consuming fluids is the generally recommended treatment. If started within 2 days of illness onset, antiviral medication can reduce the duration of uncomplicated influenza by approximately 1 day. Sometimes a viral infection can be complicated by secondary *bacterial* infection (e.g., ear or sinus infections, pneumonia). An individual with high fever, persistent cough, or earache should be evaluated by a health care provider to determine whether there is a bacterial co-infection that requires antibiotic treatment.

> ***Caution: Aspirin (or products containing salicylates) should never be used in any viral illness, but particularly if influenza or chickenpox is suspected, because of the***

association of Reye's Syndrome (vomiting, liver problems, and/or coma) with aspirin use in these illnesses.

School attendance guidelines: Sick students and staff should stay home from school until they have been without fever for 24 hours, to help prevent spreading illness to others.

Reporting requirements: Clusters of influenza-like illness are reportable to the local board of health (or DPH if the local board of health is not available).

Prevention guidelines: Follow the prevention guidelines at the beginning of this section and on hand hygiene, respiratory hygiene/cough etiquette, and standard precautions in the "Infection Prevention and Control in the School Setting" section of this chapter.

In addition:

- Observe children for respiratory illness. Notify parents if a child develops a fever (100° F or higher under the arm, 101° F by mouth, or 102° F rectally) and chills, cough, sore throat, headache, or muscle aches. Send the child home, if possible, and advise the parent to contact the child's doctor.
- Identify children who are at high risk for influenza and encourage them to get vaccinated.

Influenza vaccine: An influenza vaccine is available to prevent illness. Because transmission of influenza can occur in school settings, annual influenza vaccination is recommended for school employees and volunteers who will be in contact with students.

Annual influenza vaccination is especially recommended for:

1. Persons at increased risk for influenza-related complications:
    - all children 6–23 months of age;
    - all persons 50 years of age or older;
    - persons 2–49 years of age who
        - live in long-term care facilities that house persons of any age with chronic medical conditions;
        - have chronic cardiac or pulmonary conditions, including asthma; or
        - have required regular medical follow-up or hospitalization during the preceding year, due to chronic metabolic diseases (including diabetes), renal dysfunction, hemoglobinopathies, or immunosuppression (including immunosuppression caused by medications or HIV);
    - persons 6 months through 18 years of age who are receiving long-term aspirin therapy; and
    - women who will be pregnant during influenza season.

2. Persons who can transmit influenza to persons at high risk:
    - personnel in both hospital and outpatient settings, including emergency response workers;
    - employees of long-term care facilities who have contact with patients or residents;
    - employees at assisted-living and other residences for persons in high-risk groups;
    - persons who provide home care to persons in high-risk groups;
    - household members (including children) of persons in high-risk groups; and
    - household contacts and out-of-home caretakers of children 0–23 months of age.

Influenza vaccine should be considered for the following groups, depending upon vaccine availability:

- persons who provide essential community services;
- students and other persons in institutional settings (e.g., dormitories);
- certain travelers; and
- anyone who wishes to reduce the likelihood of becoming ill with influenza.

The CDC fact sheet *Preventing the Spread of Influenza (the Flu) in Schools: Interim Guidance for School Administrators, Teachers and Staff* is available at http://www.cdc.gov/flu/school/schoolguidance.htm.

Group A Streptococcal Infections

Group A streptococcal disease is caused by the bacterium *Streptococcus pyogenes*. It most commonly results in pharyngitis (strep throat) and skin infections (impetigo). Other diseases caused by *S. pyogenes* include scarlet fever, bacteremia, otitis media, and, rarely, rheumatic fever and necrotizing fasciitis. (See the "Diseases Spread Through Direct Contact" section of this chapter for a discussion of impetigo.)

Strep throat is characterized by the sudden onset of a very red, painful throat often accompanied by fever, tender and swollen lymph nodes, headache, abdominal pain, nausea, and/or vomiting. Sometimes a strep throat will be accompanied by coughing or, less often, runny nose. The vast majority of sore throats in children and adults are caused by cold viruses, *not* strep bacteria. Children presenting with runny nose, conjunctivitis, hoarseness, cough, discrete ulcerative lesions or mouth inflammation, or diarrhea are more likely to have a viral illness.

Scarlet fever is a type of streptococcal infection characterized by an associated skin rash. The rash usually consists of fine, red bumps that feel sandpapery and usually appear on the neck, chest, groin, and/or inner surface of the knees, thighs, and elbows. It may last only a few hours. Other than the rash, clinical symptoms are the same as strep throat.

Rheumatic fever (abnormalities of the heart valves and inflammation of the joints) is a complication that can develop 5–6 weeks after the occurrence of any type of untreated strep infection. In rare instances, kidney disease can also follow an untreated strep infection. Therefore, it is very important that all suspected cases of strep infections be referred to health care providers for evaluation, testing, and treatment.

Transmission: Strep throat can affect persons of any age, but it is most common among school-aged children, especially during the colder months and in crowded situations. Group A streptococci are transmitted person-to-person through respiratory secretions and are easily passed in households. The incubation period is 2–5 days. People with strep throat are generally most infectious during their acute illness. They continue to be infectious until they have received antibiotic treatment for a day or so.

Diagnosis: A laboratory test such as a throat culture or a rapid latex agglutination test is needed to confirm a strep infection. Although the specificity of rapid tests is generally high, sensitivity may vary, and a negative rapid test should be followed up with a culture.

Treatment: Strep infections are usually treated with an oral antibiotic, starting either at the onset of symptoms or after throat culture results are received. A single, long-lasting injection of penicillin may also be used to treat strep infection.

School attendance guidelines: People with streptococcal pharyngitis should not return to school until at least 24 hours after beginning appropriate antibiotic treatment and resolution of their fever. Mildly ill students and staff can continue to attend school while awaiting the results of a strep culture. Antibiotics should be taken for the full course of prescribed treatment, primarily to prevent rheumatic fever or other complications.

Reporting requirements: Invasive Group A strep, such as bacteremia, necrotizing fasciitis, and toxic shock syndrome, must be immediately reported to the local board of health (or DPH if the local board of health is not available). There is no requirement to report strep throat or scarlet fever.

Notification guidelines: When strep infections occur in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. (See Exhibit 8-11 for a sample letter to parents/guardians about strep throat.)

Note: Regarding Group A strep infections and chickenpox, the incidence of severe invasive group A strep infections appears to have increased nationally over the last few years. The most commonly identified risk factor for severe invasive group A strep infection is chickenpox (varicella). Therefore, if multiple cases of noninvasive group A strep, or a single case of invasive group A strep, is identified in a school, surveillance for varicella should be undertaken. If concurrent varicella and group A strep infection are identified in the school, DPH should be contacted immediately for advice on further follow-up.

Prevention guidelines:

- Follow the prevention guidelines at the beginning of this section and the guidelines on hand hygiene, respiratory hygiene/cough etiquette, and standard precautions in the “Infection Prevention and Control in the School Setting” section of this chapter.
- If a case of strep infection arises in the school, refer students or staff with sore throats to health care providers for throat cultures.
- Be alert for concurrent cases of group A strep infection and varicella within the school.
- Be alert to an outbreak. If any cases are associated with rheumatic fever, kidney disease, or toxic shock syndrome, consult with the school physician about having all students and staff cultured.

Fifth Disease (Erythema Infectiosum)

Fifth disease, also known as erythema infectiosum, is a mild rash illness that occurs most commonly in children. Fifth disease is caused by parvovirus B19, which infects the nose and throat and can be spread person-to-person. The incubation period is typically between 4 and 14 days but can be as long as 21 days. Clusters or outbreaks of illness among children in school and early-childhood programs are not unusual, typically beginning in late winter or early spring and continuing into June. Persons infected with the virus develop lifelong immunity. In most communities, approximately 50% of young adults and often more than 90% of elderly people are immune.

The illness is characterized by mild systemic symptoms. These include malaise, myalgias and fever (15%–30% of patients), and commonly, a “slapped-cheek” rash on the face and a lacy red rash on the trunk and limbs. The systemic symptoms generally occur a few days before the rash breaks out. Occasionally the rash may itch, and it may appear on and off for several weeks in response to changes in temperature (e.g., during bathing), sunlight, and emotional stress.

In adults, the rash is either atypical or absent, but adults may experience joint pain, particularly in the hands and feet. In both children and adults, the disease is usually mild, and patients recover without problems. In rare situations, more severe symptoms such as bone marrow disorders and failure may develop. This is most likely to occur among people with blood disorders, such as sickle cell anemia and other hemoglobinopathies, and weakened immune systems.

Transmission: Parvovirus B19 can be spread by the respiratory route to close contacts in settings such as households, schools, child care centers, and preschools. When an infected person coughs, sneezes, or speaks, the virus is sprayed into the air. Contaminated droplets can then be inhaled or touched by another person. Women who develop fifth disease during pregnancy may pass the infection to their fetuses and cause anemia in the fetus; the infection may also result in a miscarriage. Complications occur in less than 5% of all pregnant women who are infected with parvovirus B19 and occur more commonly when infection occurs during the first half of pregnancy. There is no evidence that parvovirus B19 infection causes birth defects or mental retardation in offspring. In most cases, individuals with fifth disease are most infectious before the onset of rash and are unlikely to be infectious after onset of rash. However, people with blood disorders and those with weakened immune systems who are ill with fifth disease may be infectious for a longer period of time.

Diagnosis: The diagnosis of fifth disease in children is based on clinical symptoms, primarily the facial rash. For those at higher risk, a laboratory test can detect newly formed antibodies to the parvovirus B19 or B19 viral DNA, documenting current or recent disease.

Treatment: For most cases, treatment is supportive. Health care providers may suggest additional treatment to relieve some symptoms.

School attendance guidelines: Students or staff with fifth disease should continue to attend school. By the time they are diagnosed with the rash, they are usually no longer contagious.

Reporting requirements: Fifth disease is not reportable to local or state health authorities.

Notification guidelines: When fifth disease occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. Notification of parents/guardians should also be discussed with the school administrator. See Exhibit 8-12 for a sample letter to parents/guardians about fifth disease. Fact sheets are available from DPH and should accompany the notification.

Prevention guidelines: Careful handwashing (especially after handling discharge from the nose and throat and before eating or handling food) is the best way to prevent spread of fifth disease. Follow the prevention guidelines at the beginning of this section and on hand hygiene, respiratory hygiene/cough etiquette, and standard precautions in the “Infection Prevention and Control in the School Setting” section of this chapter.

Special note for pregnant women and women of childbearing age: In view of the high prevalence of parvovirus B19 infections, the low incidence of ill effects on the fetus, and the fact that avoidance of child care or classroom teaching can decrease but not eliminate the risk of exposure, routine exclusion of pregnant women or women of childbearing age from a school where this disease is occurring is not recommended. Pregnant students and staff in schools where fifth disease is circulating should be referred to their health care providers for counseling and possible serologic testing. Women of childbearing age who are concerned can also undergo serologic testing prior to or at the time of exposure to determine if they are immune to the disease.

Invasive Meningococcal Disease

Various strains of the bacterium *Neisseria meningitidis* can cause invasive meningococcal disease that is serious and sometimes fatal. The most common illness is meningitis, an inflammation of the coverings of the brain and spinal cord. Infection of the bloodstream with *N. meningitidis* without meningitis is called meningococcemia. People with invasive meningococcal disease are usually very ill and are hospitalized. Invasive meningococcal disease typically starts suddenly with fever, chills, lethargy, and a rash of fine red freckles or purple splotches. Older children and adults may experience severe headache, neck pain, and neck stiffness.

Transmission: Although children younger than 6 months are most often affected, older children and adolescents are the next most commonly affected age group. Adults can become ill as well. The bacteria are passed between people who are in close contact, through coughing, sneezing, nasal discharge, saliva, or touching of infected secretions, and they can also be spread by sharing eating utensils, drinking cups, or water bottles, or by kissing. These bacteria, however, cannot live on environmental surfaces. While household contacts are at the highest risk of contracting this illness, others sharing close exposure are at risk as well.

Many people can be carriers of *N. meningitidis* and have these bacteria in their nose or throat without symptoms of illness. Less than 1% of these carriers will progress to invasive disease. The mechanism whereby a carrier progresses to invasive disease is not well understood. Both sick people and carriers can pass the bacteria to others through close contact, but illness is more likely in contacts of cases of disease. Usually illness occurs 1–4 days after a person has been exposed, although the incubation period may be up to 10 days.

Diagnosis: Individuals showing signs and symptoms of this disease are usually diagnosed by growth of organisms from blood or spinal fluid, which may take 72 hours or more. Under certain circumstances, laboratory confirmation is not possible, and a physician will make a clinical diagnosis of invasive meningococcal disease based on signs and symptoms and on microscopic analysis of spinal fluid or blood.

Treatment: Individuals with invasive meningococcal disease usually require hospitalization for special care and intravenous antibiotics. Individuals with invasive meningococcal disease, *and* anyone who had contact with the oral secretions of the infected individual (e.g., household members and friends sharing eating and drinking utensils, such as water bottles, or kissing) in the 2 weeks prior to the onset of symptoms, should also take an oral antibiotic to eliminate bacteria and reduce the risk of disease. Preventive treatment of all close contacts should be implemented *as soon as possible within the first 24 hours* after the case's symptom onset. However, antibiotics given to close contacts more than 2 weeks after the date of exposure are probably of limited value. Sick individuals are considered infectious for approximately 24 hours after beginning antibiotic treatment.

If only one case occurs in a classroom, prescribing antibiotic treatment for the entire classroom is not currently recommended, unless the members meet the definition of a "close contact." If a case occurs in a classroom of young children (e.g., kindergarten or first grade), recommendations for antibiotic treatment of classroom members may be expanded, based upon the interactions of students in the class. The Epidemiology Program at DPH should be consulted for assistance in determining recommendations. Also, if more than one case occurs in a school or classroom, the recommendation on who should receive preventive treatment with antibiotics, e.g., rifampin, may be expanded.

Note: Exposed pregnant women and individuals with liver disease should consult a health care provider to determine the safest antibiotic treatment.

Meningococcal vaccine is now recommended for children 11–12 years of age, for adolescents at high school entry (15 years of age), and college freshmen and other newly enrolled students living in dormitories. Other high-risk groups include anyone with a damaged or removed spleen, those traveling to countries where meningococcal disease is very common, and people who may have been exposed to meningococcal disease during an outbreak. Children and adults with terminal complement component deficiency (an inherited immune disorder) should also receive the vaccine. Parents of children in these groups should discuss vaccination with their child's health care provider.

Currently 2 vaccines are available in the U.S. that protect against 4 of the most common of the 13 serogroups (subgroups) of *N. meningitidis* that cause serious disease. Protection with the meningococcal polysaccharide vaccine lasts from 3–5 years. The meningococcal conjugate vaccine is expected to help decrease disease transmission and provide more long-term protection.

In Massachusetts, beginning in August 2005, colleges and schools with grades 9–12 that provide or license residential housing were required to obtain documentation from all new students (even those who do not reside in campus-related housing) of having received meningococcal vaccine, or a signed waiver from the student (or guardian) declining vaccination. More information about this requirement may be found in the DPH document "Information about Meningococcal Disease and Vaccination and Waiver for Students at Colleges and Secondary Schools."

In addition, effective August 2005, public and private secondary schools, colleges, universities, child care centers, and youth camps were required to provide parents/guardians with DPH-approved information regarding the risk of meningococcal disease and the availability, effectiveness, and risks of meningococcal vaccine. Such information is required to be provided at the time of initial enrollment.

Note: At the time of publication, revisions to the meningococcal vaccine requirements were under consideration. The most up-to-date information is available on the DPH website.

School attendance guidelines: Individuals with invasive meningococcal disease are generally too ill to attend school. They may return to school when they are well (after hospital treatment).

Reporting requirements: A case of invasive meningococcal disease must be reported immediately to the local board of health (or DPH if the local board of health is not available).

Notification guidelines: The school nurse and school physician, collaborating with the local board of health and school officials, should develop a system for immediate notification of appropriate parties, including parents/guardians, staff, the local board of health, and DPH, if a student or staff member becomes ill with invasive meningococcal illness.

Understandably, because invasive meningococcal disease is so serious, parents and community members often exhibit a great deal of concern about this illness. Providing information about the number of cases, symptoms, and recommended precautions often helps allay community concern. A fact sheet on invasive meningococcal disease is available from DPH for distribution to families. See Exhibit 8-13 for a sample letter to parents/guardians of a close contact of a case and Exhibit 8-14 for a sample letter with general disease information.

Prevention guidelines:

- The best way to prevent spread of invasive meningococcal disease is to identify all close contacts of a case so that appropriate preventive treatment can begin.

- Instruct significantly exposed staff and the parents/guardians of significantly exposed students to contact their health care providers immediately.
- Anyone having had *close contact* with the ill person (e.g., household members and friends sharing eating and drinking utensils, sharing water bottles, or kissing) *in the 2 weeks prior to the onset of symptoms* of the case should take antibiotics, e.g., rifampin, to prevent disease. This treatment of all close contacts should be done *as soon as possible, within the first 24 hours*. The school nurse, school physician, local board of health, and/or DPH can assist in establishing who is a close contact.
- Inform parents/guardians and staff that prophylactic antibiotics *do not* provide absolute protection against disease. *Therefore, any student or adult who develops symptoms such as fever or headache* requires prompt evaluation by a health care provider. A fact sheet on invasive meningococcal disease is available from DPH for distribution to families of students to provide general information about the disease and its signs and symptoms.
- Monitor the situation closely for 2–3 weeks. Make sure all ill students and staff are seen by doctors and that school and public health authorities are notified if another person develops invasive meningococcal disease.

Severe Acute Respiratory Syndrome

Severe acute respiratory syndrome (SARS) is a viral respiratory infection characterized by a prodrome of high fever (>100.4^{o} F [38° C]) and other systemic signs and symptoms including headache, general discomfort, and body aches. Some cases experience mild respiratory symptoms at the onset of illness. Diarrhea is seen in 10% to 20% of cases. After 2–7 days, SARS patients generally develop a nonproductive cough followed by shortness of breath that may progress to hypoxia. Most cases develop pneumonia. The incubation period for SARS is generally 2–7 days but may be as long as 10 days. It is thought that a person with SARS is not contagious prior to onset of symptoms.

Transmission: SARS is caused by a novel coronavirus (SARS-CoV) and spread through respiratory secretions (droplets), primarily through close person-to-person contact. Droplet spread can happen when droplets from the cough or sneeze of an infected person are propelled a short distance (generally up to 3 feet) through the air and deposited on the mucous membranes of the mouth, nose, or eyes of persons who are nearby. The virus may also be spread through contaminated objects. Other forms of transmission (airborne or fecal-oral) may be possible, but data are not yet conclusive at the time of publication of this manual. Because respiratory droplets are the primary method of transmission, the first line of defense for prevention and control of SARS is proper respiratory and hand hygiene.

Diagnosis: A case of SARS is defined by a combination of clinical, epidemiologic, and laboratory criteria. A patient's health care provider will work with DPH to determine if a patient meets the SARS case definition. Currently, two tests are available for detection of SARS-CoV infection in humans. Laboratory confirmation is required to confirm a case of SARS. Tests include an enzyme immunoassay (EIA) and immunofluorescence assay (IFA) for the detection of antibodies in serum, and polymerase chain reaction (PCR) for the detection of virus RNA in specimens from the respiratory tract and other samples.

The most current SARS information may be found at the following websites:

- Centers for Disease Control and Prevention: http://www.cdc.gov
- World Health Organization: http://www.who.int
- Massachusetts Department of Public Health: http://www.mass.gov/dph

Treatment: Patients with SARS should be evaluated for treatment in the same way as a patient with any serious community-acquired atypical pneumonia. Research into the use of various antiviral drugs against SARS-CoV is ongoing.

School attendance guidelines: If a student or staff member has SARS, is suspected of having SARS, or has been exposed to a person with SARS, the local board of health and DPH in collaboration with school officials will recommend and enforce appropriate public health actions. These may include isolation, quarantine and information dissemination and will be determined by circumstances and available information.

Reporting requirements: A case or suspected case of SARS must be immediately reported to the local board of health (or DPH if the local board of health is not available).

Notification guidelines: If SARS occurs within a school population, the school nurse and school physician, in consultation with DPH, should determine whether some or all parents/guardians and staff should be notified. Parent/guardian notification should also be discussed with the school administrator. DPH will assist in developing an appropriate letter for distribution.

Prevention guidelines: Follow the prevention guidelines at the beginning of this section and the guidelines on hand hygiene, respiratory hygiene/cough etiquette, and standard precautions in the "Infection Prevention and Control in the School Setting" section in this chapter.

Meningitis

Meningitis is an inflammation of the meninges, the tissue surrounding the brain and spinal cord. Many different bacteria and viruses may cause meningitis. Meningitis caused by *Neisseria meningitidis* is of particular public health concern, because close contacts of a case are at increased risk of disease. Meningitis caused by *N. meningitidis* (invasive meningococcal disease) is discussed previously in this section.

Two other bacteria that commonly cause meningitis are *Haemophilus influenzae* type b (Hib) and *Streptococcus pneumoniae* (pneumococcal meningitis). Both of these are covered in depth in the "Vaccine-Preventable Diseases" section in this chapter.

Viral meningitis (aseptic meningitis) is much more common than bacterial meningitis. Enteroviruses, the most common cause of viral meningitis, are found in the throat and feces of infected persons.

Transmission: Viral meningitis is mainly transmitted through the fecal-oral route but may also be spread through respiratory secretions.

Diagnosis: Bacterial meningitis is diagnosed by bacterial culture of cerebrospinal fluid. Viral meningitis is most commonly diagnosed based on clinical signs and symptoms. Examination of cerebrospinal fluid and clinical diagnosis is rarely followed up with laboratory confirmation.

Treatment: While meningitis caused by bacteria is treated with antibiotics, no specific therapies are available for viral meningitis.

School attendance guidelines: Since fecal shedding of virus can continue for several weeks after onset of infection and can also occur without signs of clinical illness, there is no reason to keep people out of school if they feel well enough to attend. For school attendance guidelines for Hib or pneumococcal or meningococcal meningitis, refer to the appropriate section.

Reporting requirements: A case of meningitis must be immediately reported to the local board of health (or DPH if the local board of health is not available).

Notification guidelines: The school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians or staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. A diagnosis of meningitis tends to cause a great deal of concern among parents and the community. Providing information about meningitis, symptoms, and recommended precautions can help to allay community concern. (See Exhibits 8-15 and 8-16 for samples letters to parents/guardians about meningitis of unknown etiology and viral meningitis.)

Prevention guidelines:

- Follow the prevention guidelines for respiratory tract diseases.
- Since viruses that cause meningitis can also be shed in the feces, also follow the prevention guidelines for infectious diarrheal diseases. See the section entitled "Diseases Spread Through the Intestinal Tract."
- Reinforce handwashing and respiratory hygiene in the classroom, and ensure that students and staff have appropriate materials available for both hand and respiratory hygiene.

Infectious Mononucleosis

Infectious mononucleosis is an acute illness usually caused by the Epstein-Barr virus. Its symptoms include sore throat, fever, and enlarged lymph nodes. It occurs most frequently in adolescents or young adults. While infants and young children can be infected by the virus, they frequently have no symptoms. Individuals with this disease can experience symptoms ranging from no illness or mild illness to severe illness. A rash can occasionally accompany infection, especially in patients treated with ampicillin or amoxicillin. In most cases, symptoms of infectious mononucleosis resolve in 1–2 months, although it is not known how long people are contagious. The incubation period of infectious mononucleosis is estimated to be 30–50 days.

***Transmission*:** The virus is spread from person-to-person through saliva, but because it is frequently found in the saliva of healthy people as well as of those who are sick, it is very difficult to prevent its spread. Young children may be infected by saliva on the hands of caregivers. Spread between children can also occur when shared objects or toys are mouthed. Kissing may increase spread among young adults. Infectious mononucleosis is common in group settings of adolescents, such as schools. The disease is not seasonal, and shedding of virus can occur for many months after infection. Most individuals exposed to people with infectious mononucleosis have previously been infected with the virus and are not at risk for infection. (In the U.S., as many as 95% of adults between 35 and 40 years of age have already been infected.)

Diagnosis: The diagnosis of this illness is based on symptoms and laboratory tests.

Treatment: There is no specific treatment for infectious mononucleosis.

School attendance guidelines: Since both sick and healthy people can carry and spread this virus intermittently for life, there is no need to exclude students or adults with this disease, as long as they are feeling well. Contact sports or heavy lifting should be avoided until the patient is fully recovered.

Reporting requirements: Infectious mononucleosis is not reportable to local or state health authorities.

Prevention guidelines: Since this illness is passed through saliva, the prevention guidelines for respiratory illnesses will help prevent the transmission of this virus. As with almost all infectious diseases, handwashing is the single most important thing people can do to prevent disease transmission. Encourage staff and students to wash their hands after wiping or blowing noses; after contact with any nose, throat, or eye secretions; and before preparing or eating food. Discourage the sharing of food and/or beverages, including water bottles.

Cytomegalovirus (CMV) Infection

CMV is a member of the herpes virus group, which includes herpes simplex virus types 1 and 2, varicella-zoster virus (which causes chickenpox), Epstein-Barr (which causes infectious mononucleosis), human herpesvirus 6 (which causes exanthem subitum or roseola infantium), and human herpesvirus 8 (Kaposi's sarcoma-associated herpes virus). It is a very common infection, typically affecting young children. In most cases, CMV causes no symptoms. Occasionally, children or adults with CMV will experience mononucleosis-like symptoms such as fever, swollen glands, and fatigue. Individuals infected with CMV may have the virus in their bodies for years without symptoms. Infection is lifelong. Infected individuals may continue to shed the virus in such body fluids as saliva, urine, genital fluids, and tears. Once infected with CMV, individuals develop immune responses that prevent re-infection.

Most healthy people working with infants and children face no special risk from CMV infection. However, for women of childbearing age who have not previously been infected with CMV, there is a potential risk to a developing fetus, and these individuals should be referred to health care providers for counseling regarding risk of infection in that setting. Counseling may include testing for immunity against CMV infection, since antibody in infected individuals blocks transmission of the virus to the fetus. CMV can also be a serious infection for immunocompromised children and adults, but, in many cases, the infection comes from a reactivation of a virus carried by the individual rather than from an external source.

Transmission: In school settings, the virus is transmitted by direct person-to-person contact. When virus-containing secretions such as saliva, tears, or urine come in contact with hands, the virus can be spread to the nose or mouth of a susceptible person. Viral excretion rates in infected young children can be very high, and at any given time 20%–80% or more of children may be excreting CMV but show no signs of illness. Children can spread CMV by sharing mouthed objects.

Diagnosis: Most individuals with CMV are not diagnosed, because they show no symptoms. Diagnosis of the CMV disease can be made from culture of infected fluids or by blood tests for antibodies against CMV.

Treatment: Currently, no treatment is recommended for CMV infection in the healthy individual. Immunocompromised individuals are sometimes treated with ganciclovir and other antiviral agents.

School attendance guidelines: CMV infection without symptoms is common in infants and young children; therefore, it is unnecessary to exclude a child known to be infected. Testing of students to detect CMV excretion is not recommended. Children known to have CMV infection should not be singled out for exclusion, isolation, or special handling.

Reporting requirements: CMV infection is not reportable to local or state health authorities.

Prevention guidelines: Since this illness is passed through saliva, the prevention guidelines for respiratory illnesses will help prevent transmission. As for almost all infectious diseases, handwashing is the single most important thing people can do to prevent disease transmission. Encourage staff and students to wash their hands after wiping or blowing noses; after contact with

any nose, throat, or eye secretions; and before preparing or eating food. Discourage the sharing of food and/or beverages, including water bottles.

Tuberculosis

Tuberculosis (TB) is a disease that usually affects the lungs, causing cough, fever, fatigue, weight loss, and night sweats. TB disease starts with a TB infection, in which a small number of TB germs (bacteria) are inhaled, reproduce, and live in the body without causing illness. The medical term for this infection is *latent TB infection*, or *LTBI*. Most individuals with LTBI never become ill with active infection, TB *disease.*

As long as the immune system remains healthy, TB germs are walled off in capsules and cannot cause illness or be spread to others. However, TB bacteria remain alive in these capsules and may overcome the body's immune system to cause disease. Therefore, individuals with LTBI remain at risk of developing TB disease throughout their lifetimes. Untreated, the risk of active disease in someone with LTBI is 5%-10% over a lifetime.

Transmission: A person gets LTBI when live TB germs are inhaled deeply into the lungs. LTBI is *not* easy to get, because the airway traps germs, preventing them from entering the lungs. Tiny airborne particles containing TB germs may be produced by the cough or sneeze of persons with TB disease in the lung. These droplet nuclei can cause true airborne contagion. A person with TB disease in the lung who is able to spread TB bacteria is referred to as "contagious" or "infectious." Individuals most at risk of getting LTBI are those who live, work, or are otherwise in contact with a contagious person, sharing indoor air for a prolonged time. TB germs *cannot* be spread by handling food or by sharing eating utensils or objects (pencils, books, clothing).

Diagnosis of latent TB infection: A positive TB skin test indicates LTBI, but not necessarily the disease. The skin test is determined to be positive when there is a significant amount of swelling at the skin test site 48–72 hours after the test is placed. Persons with a positive skin test need to have a chest Xray and be medically evaluated in order to rule out TB disease.

Diagnosis of TB disease: TB disease is diagnosed by symptoms and additional clinical tests. Typical symptoms are fever, night sweats, weight loss, fatigue, and cough. Individuals with these symptoms should seek attention from a health professional, who will check for an abnormal chest X ray and/or perform other clinical tests.

***Treatment for LTBI*:** Individuals with LTBI may be treated with oral TB antibiotics to prevent the infection from progressing to disease. The usual treatment for LTBI is a 9-month course of an anti-TB drug isoniazid. Such treatment is highly effective in preventing the progression of LTBI to disease.

Treatment for TB disease: To cure TB disease, several different TB antibiotics are prescribed. Persons with uncomplicated TB disease take these antibiotics for 6–9 months. Antibiotics must be taken according to instructions, or TB bacteria may become drug resistant, making treatment difficult or even impossible. Recent media attention has focused on this problem, often referred to as "multi-drug-resistant TB" (MDR TB). MDR TB is no more likely to cause infection or disease than ordinary TB, but MDR LTBI and MDR TB disease are more difficult to treat.

School attendance guidelines: Students or staff diagnosed with suspected or confirmed TB disease should not attend school or work in schools until they have begun taking prescribed TB antibiotics and their health care provider states in writing that they are not contagious. Students or staff who have a positive TB skin test and no symptoms of active TB should *not* be restricted from school. However, they should have a clinical evaluation and a chest X ray within 45 days of the

positive TB skin test notification. They may be advised to take a TB antibiotic to prevent developing TB disease later.

Specific reporting requirements for LTBI: As of February 2003, LTBI is reportable to DPH, Division of TB Prevention and Control (TB Division). The reporting form is available from the TB Division (617-983-6970). Reports of LTBI are shared with the local board of health, and, depending upon local resources, persons at high risk for developing TB disease are followed up to determine whether treatment is going well and whether the infection has progressed or not.

Specific reporting requirements for TB disease: A case of confirmed or clinically suspected tuberculosis must be reported directly to the Division of TB Prevention and Control within 24 hours (617-983-6970). Case reporting forms are available from the TB Division. For immediate notification, prior to completing the case reporting form, a verbal report may be given through the 24-hour reporting line, 888-MASSMTB (627-7682). A completed case reporting form should be faxed to the TB Division (617-983-6990). The TB Division notifies the local board of health in the community where the case resides, within 24 hours of receiving the report.

For cases or suspected cases among schoolchildren or staff, the TB Division, in conjunction with the local board of health, will help determine if screening of children and staff is required. Those with a positive skin test reaction (including persons with a history of Bacillus Calmette-Guerin (BCG) vaccination) require medical evaluation, generally consisting of a physical examination and chest X ray. The BCG vaccine is given by injection to protect against tuberculosis. Medical evaluation and treatment for TB infection or disease is available to the public at DPH-sponsored TB clinics throughout the state.

Specific notification guidelines: When TB disease occurs within the school population, the school nurse, school physician, and school administration, in consultation with the local board of health and the TB Division, will determine whether some or all parents/guardians and staff should be notified. (See Exhibits 8-17 and 8-18 for sample letters to parents/guardians about TB.)

What School Administrators, Staff, and Parents/Guardians Should Know About TB:

- Infants and young children under age 10 with TB lung disease are usually *not* contagious.
- The TB Division recommends a TB risk assessment, performed by the child's health care provider prior to the child's entry into school. The TB skin test is then done only for children determined to be at risk for LTBI and TB disease. Repeat TB risk assessments are performed during regularly scheduled physical examinations.
- Students or staff who have a positive TB skin test and no symptoms of TB should *not* be restricted from school. However, they should have a clinical evaluation and a chest X ray within 45 days of the positive TB skin test notification, and they may be advised to take a TB antibiotic to prevent the possibility of later developing TB disease.
- TB skin testing for school employees and volunteers is no longer required.

DISEASES SPREAD THROUGH DIRECT CONTACT

Diseases spread through direct contact include impetigo, ringworm, conjunctivitis, scabies, pediculosis, and herpes simplex infection and are caused by superficial bacterial or viral infections or parasitic infestations. They are common and are generally not serious. They are spread by direct contact with infectious secretions, infected skin areas, or contaminated objects. Because

students are constantly touching their surroundings and the people around them, these infections are easily spread among students and staff. For example:

- A student's arm has sores with a discharge. During interaction, this discharge gets on another individual's arm and into a cut or scratch.
- A hat belonging to a student with head lice is used by another student. A louse from the hat crawls onto the head of the second student.
- A student with runny eyes rubs them with his or her hands before picking up a book, pen, or pencil, contaminating them with eye discharge. Other students become infected by picking up those objects and then rubbing their own eyes with contaminated hands.

Prevention Guidelines

- Follow hand hygiene guidelines in the "Infection Prevention and Control in the School Setting" section in this chapter.
- Encourage staff and students to wash their hands after contact with any possibly infectious secretions.
- Keep a supply of disposable towels, alcohol-based hand gel, and tissues in each classroom, and encourage their use.
- Dispose of towels or tissues contaminated with secretions in a step-can with a plastic liner. Keep them away from food and classroom materials.
- Discourage the sharing of food and/or beverages, including water bottles.
- Wash frequently used surfaces such as tables and counters daily.
- Do not permit students to share personal items such as combs, brushes, hats, or clothing.
- Provide adequate individual storage areas for students' clothing items such as coats, hats, scarves, and mittens.
- Wash and cover sores, cuts, and scrapes promptly, and keep infected eyes wiped dry.
- Report rashes, sores, runny eyes, and severe itching to a student's parents/guardians so they may contact their health care provider for diagnosis and appropriate treatment.

Impetigo

Impetigo is a common skin infection that involves bacterial infection of the top layers of the skin with streptococcus (strep), staphylococcus (staph), or both. Bacteria on the skin can enter the body through breaks in the skin and grow there, causing infection and inflammation. Impetigo may also occur on skin where there is no visible break. Impetigo begins as an itchy, red sore that blisters and oozes and finally becomes covered with a flat, honey-colored crust. The lesion tends to grow and spread. The bacteria are carried in the fluid that oozes from the blisters.

Transmission: Ordinarily, the skin protects the body from bacteria. When the skin is broken (cut, scraped, bitten, scratched), bacteria may get under the surface, multiply, and cause an infection. Children often have multiple cuts and scrapes on their bodies, which makes them more vulnerable to impetigo than adults. Most individuals contract impetigo at least a few times during childhood. Impetigo bacteria are found all over infected skin, on the crust, and in the discharge. As long as lesions exist, bacteria can be spread to another person who has direct contact with the skin or a surface contaminated by discharge or crusts.

Diagnosis: Impetigo is typically diagnosed by appearance. Bacterial cultures are not usually needed. Impetigo due to staph or strep may look the same, although staph is more likely to cause blisters.

Treatment: Typically some combination of a special soap and an antibiotic ointment is used. Occasionally an oral antibiotic is prescribed. Without a bacterial culture it is often difficult to

determine which bacteria are causing the infection; therefore, children should be treated with an antibiotic active against both staph and strep.

Reporting requirements: Impetigo is not reportable to local or state health authorities.

School attendance guidelines: Impetigo is not considered an emergency, so students or staff identified with a suspected impetigo rash during the day do not need to be sent home from school. Wash the rash area with soap and water, and cover it lightly. *Those who touch the rash should wash their hands immediately.* Affected students and staff may return to school after 24 hours of local therapy. Sores should be kept lightly covered until they have dried up completely.

Notification guidelines: When impetigo occurs within a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. See Exhibit 8-19 for a sample letter to parents/guardians about impetigo.

Prevention guidelines:

- When students suffer an injury that causes a break in the skin, wash the area *thoroughly* with soap and water and dry it carefully.
- When there is an indication of impetigo, wash the rash with soap and water and cover it loosely with gauze, a bandage, or clothing.
- Be sure those who touch the rash wash their hands well.
- Dispose of any soiled tissues or bandages carefully, and keep any possibly contaminated clothing in a plastic bag.
- Instruct parents/guardians to have the student examined by their health care provider.
- Be alert to an outbreak. If any cases are associated with rheumatic fever, kidney disease, or toxic shock syndrome, consult the school physician or DPH about further control measures.

A note about antimicrobial resistance and resistant staph: Some kinds of staph are resistant to certain antibiotics that may be used to treat an infection. Methicillin-resistant *Staphylococcus aureus* (MRSA) is resistant to a family of antibiotics related to penicillin, including methicillin and oxacillin. Like other staph, MRSA may be carried on the nose or skin without causing an infection, or may cause mild skin infections (like impetigo) that do not require antibiotic treatment. MRSA does not usually cause more serious problems than any other staph, but when MRSA does cause an infection that needs antibiotic treatment, the correct antibiotics must be used in order to be effective.

Infections with MRSA are relatively rare in community settings (that is, outside of hospitals and nursing homes), but they are increasing. For more information concerning antibiotic resistance and MRSA, including information for school nurses, please go to the following page on the Massachusetts Department of Public Health website:
http://www.mass.gov/dph/cdc/antibiotic/antibiotic_home.htm.

Ringworm (Tinea)

Ringworm, or tinea, is a mild infection of the skin or nails caused by several different types of fungi. Ringworm infections are not serious and are easily treated. Ringworm on the scalp usually makes a bald patch of scaly skin. On the skin, ringworm appears as a flat, growing, ring-shaped rash that is usually reddish and can be dry and scaly or wet and crusty. As the lesions grow, the middle area often clears, leaving apparently normal skin. Another type of fungus causes skin color to become

lighter in flat patches, especially on the trunk and face. On the scalp, infection typically begins as a small bump and spreads outward, leaving scaly patches of temporary hair loss. Scales, cracks, and blisters may be seen on the skin between the toes (commonly called athlete's foot). A chronic infection of the nails may cause thickening, discoloration, and brittleness.

Transmission: Fungus infections of the skin are spread by direct or indirect contact with skin and scalp lesions of infected people or when infected, broken nails or skin flakes fall on the floor or get into hair scissors or clothes and are touched by other people. People can also get ringworm from lesions of an infected animal. A person with ringworm is infectious as long as the fungus is present in the infected area.

Diagnosis: Ringworm infections are frequently diagnosed by their typical appearance. Sometimes a special ultraviolet lamp is used to examine the body for ringworm. Occasionally scrapings of suspicious skin may be examined under a microscope or cultured to see if ringworm fungus is present.

Treatment: An antifungal ointment or cream is typically applied to the skin for several weeks. Occasionally oral antifungal medicine is prescribed, particularly for ringworm of the scalp.

Reporting requirements: Ringworm is not reportable to local or state health authorities.

School attendance guidelines: There is no need to exclude students or staff with these common, mild infections once treatment has been started. Refer individuals with a suspicious rash to their health care provider for appropriate diagnosis and treatment, and permit them to return to school as soon as treatment has begun.

Notification guidelines: If more than one person in a class develops ringworm, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent notification should also be discussed with the school administrator. See Exhibit 8-20 for a sample letter to parents/guardians about ringworm.

Prevention guidelines:

- Keep the environment as clean, dry, and cool as possible, since ringworm fungi grow easily on moist, warm surfaces.
- Follow hand hygiene guidelines.
- Keep affected areas of the body loosely covered with gauze, bandage, or clothing to prevent shedding of infected scales.

Conjunctivitis (Pinkeye)

Conjunctivitis, or pinkeye, is an inflammation of the eyes most often caused by a virus, bacteria, or allergies. With this inflammation, the white part of the eye becomes pink, and the eyes produce lots of tears and discharge. In the morning, upon waking, discharge may make the eyelids stick together. At times the cornea is also affected, bringing irritation, grittiness, and pain.

Transmission: Conjunctivitis is most common among children. Individuals may pass the infection by rubbing their eyes with their hands and then touching someone else. Conjunctivitis may also be spread when washing, drying, or wiping an individual's face and then using the same washcloth, towel, paper towel, or tissue on another's face.

Diagnosis: Conjunctivitis is diagnosed by the typical appearance of the eye(s). However, it is often difficult to tell if the cause is bacterial or viral. Occasionally a doctor will examine the discharge

under a microscope or culture it. A bacterial conjunctivitis typically has a more purulent (pus-filled) discharge, and a viral conjunctivitis has a more watery or mucoid discharge.

Treatment: If the health care provider feels that bacteria may be the cause of the inflammation, an antibiotic eye medication will be prescribed to shorten the length and severity of symptoms and decrease infectiousness. Conjunctivitis caused by certain viruses is self-limited and requires no specific antiviral treatment. It is recommended that individuals with conjunctivitis be treated by rinsing the eye and using prescribed medication.

Reporting requirements: Conjunctivitis is not reportable to local or state health authorities.

School attendance guidelines: Conjunctivitis is not an emergency, so students or staff who are identified as having conjunctivitis at school do not need to be sent home from school that day. Inform parents/guardians that the symptoms were noticed, and permit infected students and staff to return the day after any indicated treatment has begun for bacterial conjunctivitis. Parents/guardians should notify the school if the health care provider decides not to prescribe medication. Individuals with viral conjunctivitis should still be presumed contagious until symptoms have resolved, but transmission can be controlled with adequate hand hygiene.

Notification guidelines: When conjunctivitis occurs within the school population, the school nurse and school physician should determine, based on their medical judgment, whether some or all parents/guardians and staff should be notified. When necessary they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. See Exhibit 8-21 for a sample letter to parents/guardians about conjunctivitis.

Prevention guidelines:

- Have affected individuals wipe their eyes frequently with a clean tissue to keep them free of discharge.
- Follow hand hygiene guidelines.
- Teach everyone to wash their hands after wiping their eyes.
- Be sure articles that touch children's eyes (e.g., prisms, binoculars, pieces of microscope, cameras) are washed well with soap and water at least once daily. Ocular pieces of microscopes should be sanitized after use by individual students. Consideration should be given to avoiding use of such instruments during an outbreak of conjunctivitis.

Scabies

Scabies, a common skin infestation, is caused by a microscopic parasite, a mite, that infects only humans. The female mite burrows under the skin to lay her eggs, which hatch and start the infestation cycle.

Symptoms of scabies generally appear 4–6 weeks after initial exposure. Upon reexposure, symptoms may appear within 1–4 days. Scabies can present with pimplelike irritations, burrows, or rash of the skin, especially in the webbing between the fingers or the skin folds on the wrist, elbow, or knee. Intense itching can occur, especially at night, over most of the body.

Transmission: People may become infested with scabies through skin-to-skin contact or through skin contact with clothes or bedding of an infected person. Mites typically do not survive more than 48–72 hours off the body and cannot jump or fly. Direct contact with skin is usually required for spread. Scabies can be transmitted until all mites and eggs are destroyed by treatment.

Diagnosis: Scabies is usually diagnosed by the typical appearance of the rash and accompanying symptoms and by examining skin scrapings under a microscope to detect the mite or its eggs.

Treatment: Scabies is usually treated with one of several prescription mite-killing creams or lotions. Infected children and adults should apply the prescribed lotion or cream over the entire body below the head. Because scabies can affect the head, scalp, and neck in infants and young children, treatment of the entire head, neck, and body of this age group is sometimes recommended. Medication to relieve itching is often necessary as well. Even after effective therapy, itching may persist for several weeks. It is also recommended that all household members be treated at the same time, particularly those who may have skin-to-skin contact.

Reporting requirements: Scabies is not reportable to local or state health authorities.

School attendance guidelines: Scabies is not considered an emergency, so students or staff identified as having a rash that appears to be scabies at school do not need to be sent home that day. Ask parents/guardians to take infected children to their health care provider for diagnosis and treatment. Infected individuals may return after treatment is completed.

Notification guidelines: When scabies occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. Fact sheets about scabies are available from DPH. Parent/guardian notification should also be discussed with the school administrator. See Exhibit 8-22 for a sample letter to parents/guardians about scabies.

Prevention guidelines:

- Washable items that have come into contact with an infected individual's skin during the 4 days prior to treatment should be laundered in a washer with hot water and dried using the hot cycle.
- Store difficult-to-wash items such as stuffed toys and pillows in tightly closed plastic bags for 1–2 weeks before using again.
- Additional environmental disinfection is unnecessary and unwarranted. This includes the use of pesticide sprays, which may be harmful to people and animals.
- Talk with the school physician if there seems to be a major problem with scabies, because it may be prudent and necessary to treat all students and adults in the group at once.

Pediculosis (Head Lice)

Head lice are tiny insects that live only on people's scalp and hair. Head lice hatch from small eggs, called nits, that are firmly attached to individual hairs near the scalp and cannot be easily moved up or down the hair (as could specks of dandruff). Nits may be found throughout the hair but are most often located behind the ears and at the nape of the neck. Eggs hatch in 6–10 days, with new lice reaching adulthood 2–3 weeks later. The female louse, about the size of a sesame seed, typically lives for 20–30 days and lays about six eggs a day. Lice live by biting and sucking blood from the scalp. Lice can survive 1–2 days away from the scalp.

The major symptom of head lice is itching, caused by the bite of the louse. Persistent scratching of the head and back of the neck should be cause for concern. Red bite marks and scratch marks may be observed on the scalp and neck, and a secondary bacterial infection can occur, causing oozing or crusting. Swollen neck glands may also develop.

Transmission: Lice are spread *only* when they crawl from person to person directly or crawl onto shared personal items such as combs, brushes, head coverings, clothing, bedding, or towels. An

infested individual can transmit head lice to others continuously until undergoing treatment to kill the insects and eggs. Head lice should not be considered a sign of unclean individuals or homes. They may affect individuals of any age, sex, ethnicity, and economic level. Anyone who has close contact with an infested individual or shares personal items can become infested.

Diagnosis: Diagnosis is usually made by detecting nits, which are tiny, pearl-gray, oval-shaped specks attached to hairs near the scalp. Use a magnifying glass and natural light when searching for them on the hair at the back of the neck, behind the ears, and at the top of the head.

Treatment: Treatment consists of killing lice on infested individuals, their surroundings, and their personal items. All household members and individuals with close physical contact should be examined for lice and, if infested, treated with one of the recommended shampoos, lotions, or hair rinses. Many of these recommended products are now available over the counter.

For individuals suspected of having head lice:

- Refer them to a health care provider for proper diagnosis and treatment. (*Note:* Products used for treating head lice should be used only as directed and with extreme care. A physician *must* be consulted before treating children younger than 2 years of age, pregnant or nursing women, or people with extensive cuts or scratches on the head or neck.)
- Treatment includes shampooing or rinsing the hair with medicine.
- After appropriate treatment, removal of nits is not necessary to prevent spread, but it is sometimes desired for aesthetic reasons. Removal is a difficult and time-consuming process because nits are usually firmly attached to the hair shaft. Most over-the-counter treatments recommend a reapplication of the treatment 7–10 days later to kill immature lice that may have hatched from eggs that were not inactivated.

To treat personal items and surroundings in the school environment:

- Machine-wash all possibly infested washable items in hot water, and dry them in a hot dryer.
- Put nonwashable items (furry toys, pillows) in a hot dryer for 20 minutes, or dry-clean them.
- Place items that cannot be washed or dried in a tightly sealed plastic bag for 10 days.
- Wash combs and brushes with a shampoo approved to kill lice, or soak in hot water (>128.3^{o} F) for at least 5 minutes.
- Thoroughly vacuum rugs, upholstered furniture, and mattresses.
- Do not use insecticide sprays in an attempt to stop spread, because they can be harmful to people and animals.

Reporting requirements: Head lice infestation is not reportable to local or state health authorities.

School attendance guidelines: Children need not be excluded or sent home early from school because of head lice. Parents/guardians of affected children should be notified and informed that their children must be properly treated and may return to school on the day after treatment. Other close contacts should be checked to determine if there are other cases. If a school is having a recurrent problem with head lice, morning head checks should be conducted as students arrive at school.

Removal of nits is difficult, and the majority of nits will be killed by the appropriate treatment. “No nit” policies have not been demonstrated to be effective in controlling head lice transmission. However, the school, in consultation with the school nurse and/or physician, should decide on the

best policy for the school and for parents/guardians. Regardless of the policy, children who have been treated should be checked for new nits every day for 10–14 days after treatment.

Notification guidelines: When pediculosis occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. Parent/guardian notification should also be discussed with the school administrator. Fact sheets are available from DPH. See Exhibit 8-23 for a sample letter to parents/guardians about head lice.

Prevention guidelines:

- Learn to recognize nits, and regularly check students' heads and hair when a case of head lice is diagnosed in the classroom. Teach parents/guardians to recognize nits and to check their family's hair periodically. Because outbreaks of head lice occur occasionally in almost all schools and because parental concern may exceed the threat of head lice to health, this is a prime area for preventive education and information. A well-organized and prompt response to the first few cases can prevent a widespread problem and avoid the spread of misinformation.
- If a case is identified, follow recommended treatment procedures closely. If a parent or guardian finds nits, it should be reported to the school nurse, who can check close contacts.

Herpes Simplex Infection

Herpes simplex virus (HSV) infections are characterized by skin blisters or sores that can be very pruritic and painful. Once a person is infected, these viruses remain in nerve cells, and HSV eruptions tend to recur at the same places on the body again and again. There are two types of herpes simplex virus: HSV type 1 (usually found in the mouth) and HSV type 2 (usually found on the genitals).

HSV type 1 is extremely common. The first infection typically occurs in childhood, is mild, and often goes unnoticed. However, it may present in the form of *gingivostomatitis,* characterized by fever and widespread painful ulcerations in the mouth. HSV usually recurs as single or multiple blisters around the lip ("cold sores"). The virus may be spread by direct contact and cause infection on a finger (*herpetic whitlow* — painful, recurrent blisters of a finger), in the eye (*herpetic keratitis* — recurrent ulcerations of the cornea), or other places on the skin. HSV-1 dermatitis/conjunctivitis (*herpes gladiatorum*) has been diagnosed in wrestlers and other contact-sport participants. (See section on sports-related infectious diseases later in this chapter.)

HSV type 2 is the cause of most cases of genital herpes. It occurs primarily in adults and is typically sexually transmitted. Primary infection, often characterized by painful genital blisters and ulcers accompanied by fever, can last 2 weeks. Recurrence is common, usually as localized, less-painful ulcers that go away in 7–10 days and are not accompanied by fever. Recurrence may also be asymptomatic.

Herpes in newborns is most often caused by HSV type 2, occurring when an infant passes through an infected birth canal. Resulting illnesses range in severity from skin blisters to total body disease, which can result in severe brain damage or death. An infant who survives may have recurrent skin blisters due to HSV.

Herpes infection in children is generally caused by HSV type 1, which, although uncomfortable, is rarely serious. People who have severe eczema or immune system problems may experience more severe herpes infection. Children should be cautious about HSV spread to hands and eyes.

Touching lesions should be discouraged as much as possible. Young children with HSV lesions also need to be monitored to avoid spread to newborn infants.

Transmission: HSV type 1 is most common in young children; HSV type 2 (due to its sexual transmission) is more common in adults. HSV is shed in the secretions of the blisters and ulcers. Spread of both HSV type 1 and HSV type 2 requires direct contact of virus-containing secretions with a mucous membrane inside the mouth, lining of the eyes, rectum, or genitals, or with broken skin such as cuts. Transmission may also occur in sports with skin-to-skin contact. Because herpes viruses can survive as long as 4 hours on any surface, mouthed objects contaminated by virus-containing saliva may transmit infections of the mouth.

Diagnosis: Diagnosis is usually made based on the distinctive appearance of the blisters or sores and a culture test for the virus.

Treatment: Antiviral therapy for HSV infections is the treatment of choice. Most people with initial genital herpes should receive antiviral therapy. Suppressive antiviral therapy is offered to people who have frequent recurrences of genital herpes (more than 6 per year).

School attendance guidelines: Oral HSV infections are common among schoolchildren. Most of these infections are asymptomatic, with shedding of virus in saliva occurring in the absence of clinical disease. Exclusion from school should only be considered for children with HSV gingivostomatitis (i.e., primary infection) who do not have control of oral secretions. Exclusion of children with cold sores (i.e., recurrent infection) from school is not indicated.

Children with uncovered lesions on exposed surfaces pose a small potential risk to contacts. If children are certified by a physician to have recurrent HSV infections, covering the active lesions with clothing, a bandage, or an appropriate dressing when they attend school is sufficient.

Reporting requirements: There is no requirement to report HSV infections (either type 1 or type 2), unless they occur in newborns.

Prevention guidelines:

- Anyone who may come in contact with blisters on students, for example, in the changing of a dressing or diaper, should wear latex gloves.
- Follow hand hygiene guidelines.
- To control spread of *herpes gladiatorum*, educate athletes and trainers about the risk, conduct routine examinations before wrestling contacts, exclude wrestlers with suspicious lesions, and refer them for diagnosis and treatment. Sanitizing of mats with a dilute bleach solution (1 tablespoon bleach to 1 quart of water) and airing of mats is also recommended as a standard precaution.

DISEASES SPREAD THROUGH BLOOD CONTACT

Bloodborne infections such as hepatitis B (HBV), hepatitis C (HCV), and human immunodeficiency virus (HIV) are serious illnesses that are spread through direct contact with blood and body fluids. The primary routes of transmission are: percutaneous (through the skin), from needles or sharp instruments contaminated with infected blood; sexual contact; and perinatal transmission, from mother to child during pregnancy, during childbirth, or through breastfeeding. HBV, HCV, and HIV are *not* spread through casual contact such as touching, hugging, and kissing. Because intimate contact is required for these diseases to spread, the risk of transmission in the school setting is

negligible. However, during adolescence, the likelihood of becoming infected with HIV and HCV increases proportionally with sexual activity, injection drug use, tattooing, and piercing. Fortunately, as a result of vaccination programs, the risk of transmission of HBV among all students is very low.

All school staff should be educated on the use of standard precautions and specific ways to prevent contact with blood and body fluids. For further information, see the following page on the Centers for Disease Control website: http://www.cdc.gov/ncidod/dhqp/gl_isolation_standard.html.

If a question of occupational exposure to hepatitis and HIV arises, consult the PEPline (Post-Exposure Prophylaxis Hotline) at http://www.ucsf.edu/hivcntr.

Available evidence indicates that the risk of transmission of all these diseases is also low during contact sports at the high-school level. Recommendations issued by the American Academy of Pediatrics (AAP) in 1999 for the prevention of HIV and other bloodborne pathogens in the athletic setting include the following:

- Athletes infected with HIV, HBV, or HCV should be allowed to participate in all sports and do not need to disclose their infection status.
- Testing for bloodborne pathogens should *not* be mandatory for athletes.
- Coaches and athletes should be educated on the use of standard precautions and specific ways to prevent direct contact with blood and body fluids.
- Athletes must cover existing cuts, wounds, or other areas of broken skin with a dressing before and during participation.
- Disposable gloves should be worn to avoid contact with blood or other body fluids, as well as any equipment contaminated with these fluids. If gloves are not available, the wound should be wrapped with a towel until a location is reached where gloves can be donned for definitive treatment.
- Hands should be washed with soap and water or an alcohol-based hand cleanser *immediately* after removing gloves.
- Athletes with active bleeding should be removed from competition until the bleeding has stopped and the wound has been covered with an occlusive dressing.
- Equipment and inanimate surfaces contaminated with blood or body fluids should be disinfected with a 1:10 dilution of bleach for 30 seconds, or with any EPA-approved disinfectant.
- Mouthpieces or resuscitator bags should be available for use whenever resuscitation is carried out.

The complete list of AAP recommendations can be found at http://www.aap.org.

Schools offer a window of opportunity to educate about how bloodborne diseases are spread. Education should be an ongoing process, with age-appropriate information. Early discussion of infecting agents, disease transmission, and handwashing can set the stage for later education about the prevention of bloodborne and sexually transmitted diseases. Adolescents should be advised that certain practices such as tattooing and piercing of ears, noses, and other body parts can carry a high risk of infection; measures to prevent infection should be taught, and self-piercing or piercing by friends should be avoided. To prevent the transmission of HIV or other bloodborne diseases, all piercing and tattooing should be done by a licensed practitioner using sterile, single-use needles and/or inks. Students as well as staff need information on standard precautions for blood and body fluids. Please refer to the section “Infection Prevention and Control in the School Setting” and the sections on hepatitis B, hepatitis C, and HIV for specific prevention guidelines.

Hepatitis B

Hepatitis B is a viral infection of the liver caused by the hepatitis B virus (HBV). Infection with HBV may result in either acute or chronic disease, both of which may be asymptomatic. Symptoms of hepatitis B infection include weakness, feeling ill, loss of appetite, fever, headaches, yellow skin and eyes (jaundice), dark urine, and pain in muscles, joints, and abdomen. Long-term or chronic infection can lead to liver damage, liver cancer, and death.

The risk of chronic disease following HBV infection decreases with age. More than 90% of infants infected at birth (perinatally) develop chronic HBV infection, compared to between 25% and 50% of children infected between 1 and 5 years of age and 6%-10% of persons acquiring the infection as older children and adults. Approximately 25% of persons infected during early childhood will die at an early age from complications of cirrhosis and/or liver cancer.

Transmission: HBV is transmitted through direct exposure to blood or body fluids, including wound exudates, semen, cervical secretions, and saliva. The highest concentrations of the virus are found in blood and serous fluids; the lowest concentrations are found in saliva.

Examples of exposure risks include:

- sharing needles or syringes to inject drugs;
- occupational exposure through needle sticks or sharps injuries;
- transfusion of blood and blood products (now rare in the U.S.);
- hemodialysis;
- tattooing and body piercing (using nonsterile equipment);
- sexual contact with an HBV-infected person; and
- perinatal transmission from an HBV-infected mother to her infant at birth.

Spread of HBV in a household setting may occur if there is continuous sharing of personal items such as washcloths, towels, razors, or toothbrushes.

The risk of transmission of HBV in the school and child care setting has always been low. It has now become negligible, as a result of universal childhood and adolescent vaccination recommendations and immunization requirements for entry into child care, kindergarten, 7th grade, and college. If hepatitis B were to spread in a school or child care setting, it would most likely occur through direct blood contact, such as a bite that breaks the skin and allows the virus to enter the bloodstream of a nonimmune person.

The incubation period of HBV infection is an average of 90 days, with a range of 45–160 days. HBV can survive in the dried state in the environment for one week or longer.

Diagnosis: Serological tests are available to test for acute infection with HBV, chronic infection with HBV, and immunity to HBV.

Treatment: While there is no treatment for acute hepatitis B, there are two approved treatments for chronic hepatitis B: interferon alfa-2b and lamivudine.

Reporting requirements: Infection with HBV (acute or chronic) is reportable to the local board of health, which will notify DPH.

School attendance guidelines: Staff and students who are *ill* with acute HBV infection should stay home until they feel well and until fever and jaundice are gone. Students who are chronically infected with HBV and who have *no* behavioral or medical risk factors, such as unusually

aggressive behavior (e.g., biting), generalized dermatitis, or a bleeding problem, should be admitted to school and child care without restrictions.

Students and staff infected with HBV do not need to be identified to school personnel or parents/guardians of other children attending school or child care. Because HBV-infected children and adolescents will not be identified, policies and procedures to manage potential exposures to blood or blood-containing materials should be established, implemented, and applied universally. Although students' privacy should be maintained, parents/guardians and students should be educated about the types of exposure that present a risk for school contacts. Decisions about activities at school should be made by parents/guardians, together with a physician, keeping the health needs of both the infected student and the student's classmates in mind. See the sections in this chapter titled "Diseases Spread Through Blood Contact" and "Sports-Related Infectious Diseases" for further information.

Prevention guidelines:

- Ensure compliance with all hepatitis B immunization requirements for school entry and child care. Vaccination is also recommended for unvaccinated classmates and staff in contact with hepatitis B carriers who behave aggressively (e.g., biting, frequent scratching) or who have medical conditions such as open skin lesions (e.g., generalized dermatitis or bleeding problems) that increase the risk of exposing others to infectious blood or serous secretions.
- Hepatitis B vaccination is recommended for staff whose responsibilities include first aid. Federal OSHA regulations also *require* employers to offer hepatitis B vaccine to staff with responsibility for first aid *and* to have an exposure plan in place. OSHA requirements, however, do not cover public employees in Massachusetts, except those working in hospitals.
- Persons exposed to potentially infectious blood or other body fluids should follow school exposure protocols and be treated according to the guidelines in the table "Recommended Postexposure Prophylaxis for Percutaneous or Permucosal Exposure to Hepatitis B Virus" (see below).
- Children who bite pose a concern. Existing data in humans suggest a small risk of HBV transmission from the bite of a child with chronic HBV infection. For susceptible victims of bites by children with chronic HBV infection, prophylaxis with HBIG and hepatitis B immunization is recommended. The risk of HBV acquisition when a susceptible child bites a child who has chronic HBV infection is unknown. A theoretical risk exists if HBsAg-positive blood enters the oral cavity of the biter, but transmission by this route has not been reported. Most experts would initiate the hepatitis B vaccine series, but not give HBIG, to a susceptible biting child who does not have oral mucosal disease, if the amount of blood transferred was small. If, as is commonly the case, the HBsAg status of both the biting child and the victim is unknown, the risk of HBV transmission is extremely low due to the expected low seroprevalence of HBsAg in most groups of preschool-aged children, the low efficiency of disease transmission from bites, and routine hepatitis B immunization of preschool children. Serologic testing generally is not warranted for the biting child or the recipient of the bite, but each situation should be evaluated individually.
- Ensure that school and child care staff receive regular training on the prevention of bloodborne diseases.
- Use standard precautions for all contact with blood; all body fluids, secretions, and excretions; nonintact skin; and mucous membranes. These precautions must be used at all times regardless of a person's infection status or diagnosis. See the "Infection Prevention and Control in the School Setting" section in this chapter for a detailed explanation of standard precautions.

- Do not permit sharing of personal items that may become contaminated with blood or body fluids, such as toothbrushes, eating utensils, or water bottles.
- Cover open skin lesions.
- Store contaminated clothing or washable items separately in sealed plastic bags, and send them home with the owner for laundering with detergent and hot water.
- Supervise children and students closely to discourage and prevent aggressive behavior.
- Provide age-appropriate education to adolescents and young adults about prevention of sexually transmitted diseases, including hepatitis B.

Recommended Postexposure Prophylaxis for Percutaneous or Permucosal Exposure to Hepatitis B Virus

Vaccination status of exposed person		Treatment when source is found to be:		
		HBsAg-positive	**HBsAg-negative**	**Unknown or not tested**
Unimmunized		Administer 1 dose of HBIG[1] and initiate hepatitis B vaccine series	Initiate hepatitis B vaccine series	Initiate hepatitis B vaccine series
Previously Immunized	Known responder	No treatment	No treatment	No treatment
	Known nonresponder	1 dose of HBIG[1] **and** initiate revaccination[2] or 2 doses of HBIG[1] (given one month apart)	No treatment	If known high-risk source, treat as if source were HBsAg-positive
	Response unknown	Test exposed person for anti-HBs[3] • If adequate, no treatment • If inadequate, 1 dose of HBIG[1] **and** a vaccine booster dose[4]	No treatment	Test exposed person for anti-HBs[3] • If adequate, no treatment • If inadequate, vaccine booster dose[4]

HBsAg indicates hepatitis B surface antigen; HBIG, hepatitis B immune globulin; anti-HBS, antibody to HBsAg.

[1] Dose of HBIG, 0.06 mL/kg, intramuscularly.

[2] The option of giving 1 dose of HBIG (0.06 mL/kg) and reinitiating the vaccine series is preferred for nonresponders who have not completed a second 3-dose vaccine series. For people who previously completed a second vaccine series but failed to respond, 2 doses of HBIG (0.06 mL/kg) are preferred, 1 dose as soon as possible after exposure and the second 1 month later.

[3] Adequate anti-HBs is $\geq$ 10 mIU/mL.

[4] The person should be evaluated for antibody response after the vaccine booster dose. For persons who received HBIG, anti-HBs testing should be done when passively acquired antibody from HBIG is no longer detectable (e.g., 4–6 mo); if they did not receive HBIG, anti-HBs testing should be done 1–2 months after the vaccine booster dose. If anti-HBs is found to be inadequate (< 10 mIU/mL) after the vaccine booster dose, 2 additional doses should be administered to complete a 3-dose revaccination series.

Table adapted from American Academy of Pediatrics, *2003 Red Book: Report of the Committee on Infectious Diseases, 26th Edition.*

Hepatitis C

Hepatitis C (formerly hepatitis non-A, non-B) is a viral infection of the liver caused by the hepatitis C virus (HCV). Most people who are infected with HCV go on to have persistent infection (they remain intermittently viremic for life) and develop chronic hepatitis C. Hepatitis C is a slow, progressive disease in which those who develop liver disease generally remain asymptomatic for many years and perhaps decades. It is the most common bloodborne disease in the U.S.; it is estimated that over 3 million Americans are living with chronic HCV infection.

The signs and symptoms of hepatitis C are similar to those of hepatitis A and hepatitis B. Persistent infection occurs in 50%–60% of HCV-infected children, even in the absence of biochemical evidence of liver disease.

Transmission: HCV is predominantly spread by exposure to the blood of HCV-infected people. The highest prevalence of HCV infection (60%–90%) is in people with large or repeated exposures to blood or blood products, such as injection drug users or people with hemophilia who were treated with clotting factor products produced before 1987. People who had blood transfusions prior to 1992, when screening tests became available, are also at risk. Sexual transmission of HCV does occur, but unlike HBV, HCV is not efficiently transmitted by this route. Other potential risk factors include hemodialysis, sharing straws for intranasal drug use, perinatal transmission from infected mother to fetus, occupational exposure in health care settings, and tattooing and body piercing with nonsterile equipment. HCV is not spread by casual contact, kissing, sneezing, shared drinking utensils, or breast milk.

Risk of transmission of HCV in the school setting is believed to be very low. Because of the routes of transmission of HCV and the relatively low rate of vertical transmission from infected mother to baby, the rate of infection in children is low.

The incubation period for acute hepatitis C disease averages 6–7 weeks after exposure, with a range of 2 weeks to 6 months. Presence of HCV can usually be detected in 1–2 weeks. Most infection with HCV is not associated with an identified acute disease.

Diagnosis: Several blood tests are used for the diagnosis of HCV infection. The enzyme immunoassay (EIA) and recombinant immunoassay (RIBA) are tests that can detect whether the body has produced antibodies against HCV. The HCV RNA (PCR) test detects the presence of virus circulating in the blood and confirms that a person is currently infected.

Treatment: Antiviral therapy is available for treatment of chronic hepatitis C in adults, but currently no FDA-licensed therapies are available for people younger than 18. HCV-infected children with symptoms of liver disease should be referred to a specialist in the management of chronic hepatitis C.

Reporting requirements: A case of hepatitis C must be reported to the local board of health.

School attendance guidelines: There are no recommendations to exclude persons with hepatitis C from employment, school, sports, or any social situation. Students with hepatitis C do not need to be identified to school personnel.

Prevention guidelines: Standard precautions (see the “Infection Prevention and Control in the School Setting” section in this chapter) should be used to prevent the transmission of hepatitis C in schools. All staff should receive training on general infection control measures and standard precautions to prevent the spread of bloodborne diseases. Parents/guardians and children should be educated regarding the potential risk of contact with the blood or body fluid of other individuals.

HIV Infection and AIDS

AIDS (acquired immunodeficiency syndrome) is a disease of the immune system caused by the human immunodeficiency virus (HIV) and transmitted by the exchange of blood, semen, vaginal fluid, or breast milk from an infected individual to an uninfected individual. HIV can also be transmitted from an infected mother to her newborn baby before or during birth or during breastfeeding. The virus attacks the immune system, crippling the body's ability to fight off diseases caused by common organisms in the environment. These diseases may lead to life-threatening opportunistic infections. Currently no cure exists for HIV/AIDS, but a wide range of treatments are available that can improve and prolong quality of life. Despite medical advances, HIV infection remains a serious disease that requires complex, costly, and challenging treatment regimens.

It is not unusual for a person living with HIV/AIDS to feel healthy for a very long time, sometimes up to or beyond 10 years after infection. During this period, an individual living with HIV infection can still transmit the virus to other people, even though he or she is symptom-free and looks and feels healthy.

In time, a person living with HIV infection who does not get tested and treated may develop symptoms associated with HIV infection. Such symptoms signal the progressive deterioration of the immune system, but do not necessarily constitute an AIDS diagnosis. AIDS is defined by very specific clinical indicators. Only a trained health care professional can make such a diagnosis.

Significant advances have been made in the treatment of HIV infection and prevention of its complications, allowing people with HIV/AIDS to lead healthier, active lives. Deaths in the U.S. due to AIDS decreased markedly in the late 1990s and have remained level.

Transmission: HIV can be transmitted from one person to another in the following ways:

- **Through blood-to-blood contact**, via shared needles and works (cotton, cooker, rinse water) to inject drugs (including hormones and steroids), needle sticks, contact between blood and an open cut or sore, or transfusion with infected blood products. In North America, due to the screening of the blood supply, transfusion-related transmission is now extremely rare. In other parts of the world, because of less rigorous screening of blood donations and reuse of medical equipment, HIV infection due to transfusion and related to delivery or receipt of medical care may be more common.
- **Through tattooing, piercing, acupuncture, and electrolysis,** if blood touches the equipment and it is used on more than one person. The risk of HIV transmission in these circumstances comes almost entirely from the possibility that improperly sterilized or unsterilized equipment may retain traces of blood. This risk can be eliminated through routine sterilization procedures, which are required in all licensed establishments. There are no documented cases in the U.S. of transmission of HIV through tattooing or piercing, although hepatitis B virus has been transmitted during some of these practices. One case of HIV transmission from acupuncture has been documented. According to CDC, the medical complications for body piercing appear to be greater than for tattoos. Healing of a piercing generally takes weeks and sometimes even months, and the pierced tissue could conceivably be abraded (torn or cut) or inflamed even after healing. Therefore, even if piercings are done in a licensed establishment using proper sterilization procedures, an HIV transmission risk from piercing theoretically does exist if unhealed or abraded tissues come into contact with an infected person's blood or other infectious body fluid.
- **Through unprotected sexual intercourse**, including anal (regardless of the sex or sexual orientation of participants), vaginal, and oral intercourse. HIV is transmitted

through semen (and preejaculatory fluid), vaginal fluids (including menstrual blood, cervical discharge, and vaginal lubrication), and blood. Oral intercourse is less risky than vaginal or anal intercourse, but cuts or sores in the mouth increases this risk.

- **From mother to child,** before or during birth or through breastfeeding. This risk can be reduced significantly with appropriate treatment. The number of HIV infections transmitted perinatally by mothers known to be HIV-positive who gave birth in Massachusetts decreased markedly between 1992 and 2002. However, because of higher rates of transmission in the past and improvements in care for children with HIV infection, more HIV-infected children now attend school.

No cases have ever been confirmed of HIV transmission from saliva, sweat, or tears. HIV is also *not* transmitted by:

- casual contact such as kissing or hugging;
- insect bites;
- food handled, prepared, or served by a person with HIV/AIDS;
- toilets, telephones, or clothes;
- shared eating utensils or drinking glasses;
- physical proximity to people with HIV/AIDS, in schools or other public places;
- feces or urine;
- blood donation;
- swimming pools and hot tubs; or
- shared musical instruments.

Counseling and testing: Patients should receive pretest counseling prior to administration of the HIV antibody test, as well as post-test counseling when receiving test results. This is a critical component of effective testing, providing health care providers with an opportunity to assess individuals' testing readiness and risk behaviors, review testing options, explain procedures, and develop a risk reduction plan.

The HIV antibody test is not a test for AIDS — it merely determines the presence of HIV antibodies, which develop in response to the presence of HIV. Thus, the HIV test detects the antibody, not the virus itself, but presence of the antibody is indicative of active infection/transmission and not just exposure. Massachusetts law (M.G.L. c.111, s.70F) requires *written, informed* consent for HIV testing; it cannot be done as a *routine* blood test. Testing must be voluntary, and a provider may not disclose a patient's HIV test results, or even disclose whether a patient took an HIV test at all, without the patient's written consent.

A serum (blood) specimen or an oral fluid (oral mucosal transudate) specimen may be used for HIV testing. Currently, two tests are used to detect HIV antibody: the ELISA (enzyme-linked immunosorbent assay) and the western blot. The ELISA is typically performed first. If the ELISA is positive, it is repeated twice. If any two of the three tests are positive, a western blot test is done. When a positive ELISA is confirmed by western blot, results are accurate more than 99% of the time. Positive tests on oral mucosal transudate specimens should be confirmed by testing of blood.

Improved ELISA assays can detect HIV antibody as early as 21–25 days after infection. Most HIV-infected people will test positive by six weeks after infection. The presence of antibody is always considered evidence of active infection. If an HIV antibody test is negative, no antibody was found, and the person does not have antibody *at the time of the test*. For the most accurate results, individuals with more recent risk exposure (within the preceding six weeks) should be retested in another six weeks, refraining from potential risk behaviors in the meantime, since individuals with HIV infection may be infectious before they develop antibody to HIV. Tests for RNA are positive

before antibody is produced, so in some cases a PCR assay for HIV RNA may be done if someone is at high risk of HIV infection after a recent exposure.

Risky behaviors that may lead to HIV infection also put individuals at higher risk of STDs and viral hepatitis.

Rapid testing: Rapid tests for HIV infection are now available and may be done on serum (blood) or oral fluid (oral mucosal transudate). Rapid testing is only a screening test similar to the serum ELISA. A reactive rapid test should be considered a preliminary positive HIV test and must be confirmed with formal testing of blood for HIV antibody. Rapid tests for HIV antibody will not be positive until antibody is present and measurable by other tests.

Adolescent HIV counseling and testing: The DPH HIV/AIDS Bureau (617-624-5300 or http://www.state.ma.us/dph/aids) has created the *HIV/AIDS, Hepatitis, STD and Substance Use Service and Resource Guide* to assist providers in making appropriate referrals for individuals in need of screening, testing, treatment, or other services related to HIV, viral hepatitis, sexually transmitted diseases, or substance use. The guide is available at http://www.mass.gov/dph/aids/services/hivresourceguide.pdf.

Under Massachusetts law (M.G.L. c.112, s.12F), minors in certain circumstances may consent to their own dental care and medical testing and treatment, including treatment for HIV infection. This law mandates confidentiality of medical information and records except when an attending physician or dentist reasonably believes that the minor's condition is so serious that life or limb is endangered.

Treatment: Because early diagnosis, counseling, and treatment improve the heath and quality of life for individuals living with HIV infection, it is important for HIV-positive individuals to be evaluated clinically as early as possible. Effective treatment and consistent, quality health care can delay progression of infection and risk of opportunistic infections. The DPH-funded ACT NOW program provides free medical care for persons with HIV infection who are uninsured or underinsured.

Many drugs are now approved for treatment of HIV infection and prevention and treatment of infections associated with HIV infection. In Massachusetts, the HIV Drug Assistance Program (HDAP) provides financial assistance for those who are unable to pay for HIV drugs. Individuals with HIV infection should contact a health care provider to obtain information about or access to treatment.

Risk of HIV infection, STDs, and hepatitis can be reduced through protective measures such as condom use. To learn more, contact the AIDS Action Committee of Massachusetts's AIDS Action Hotline at 800-235-2331 or http://www.aac.org/hotline.

Youth at risk may need to face both their own fears and anxieties regarding HIV. They may also face responsibility or concern for family, friends, or other loved ones who are infected or affected by HIV. Because HIV infection is very personal and emotionally challenging, education about HIV/AIDS prevention and infection control should be provided for all staff. School policies should be sensitive to and supportive of students and school personnel who may be infected or affected by HIV.

Schools and HIV/AIDS prevention education: Comprehensive health education is an effective means of preventing HIV infection (see chapters 3 and 12 for more information).

School attendance guidelines: Students with AIDS or HIV infection pose no risk of transmitting HIV through casual contact in a school setting. In August 1991, DPH and DOE issued an updated medical policy stating that students with HIV/AIDS have the same right to attend classes or participate in school programs and activities as any other student. The only exception is in the rare situation in which a student bleeds uncontrollably or exhibits behaviors that put others at risk. Universal blood and body fluid precautions, now included under "standard precautions," in all school settings should apply. DPH's *AIDS/HIV Infection Policies for Early Childhood and School Settings, Appendix A*, lists conditions that are grounds for excluding a student from a school setting, *regardless of whether he or she is known or suspected to harbor a bloodborne infection* (DPH/DOE, 1991). To obtain a copy of this publication, call the HIV/AIDS Bureau at 617-624-5300.

Protections and Policies

Confidentiality

As with any other medical information, the diagnosis of HIV infection and AIDS is confidential, and students are not obligated to disclose it. Since individuals with AIDS or HIV infection typically pose no public health threat to others by their presence in the school, their medical information is protected.

The privacy of students with HIV infection or AIDS is protected under state privacy law (M.G.L. c.214, s.1B), which protects against unwarranted invasion of privacy, and by M.G.L. c.111, s.70F, which prohibits health care providers and facilities (including school-based clinics) from disclosing HIV test results (or the fact that a test has been performed) without specific, informed, written consent of the person tested. The consent should include the name of the individual to whom the disclosure is to be made. Disclosure by school personnel is also restricted by FERPA (Family Educational Rights and Privacy Act).

Disclosure

A student and/or his or her parent/guardian may wish to disclose the diagnosis of AIDS or HIV infection to the school nurse or school physician, even though they are not obligated to do so. Reasons include:

- A student diagnosed with AIDS or HIV infection may be at a greater risk for other infections. If there is an occurrence of a contagious disease in school, such as chickenpox, the school nurse or physician who is aware of a student's HIV status can alert the student's parent/guardian, who then may consult their personal physician for preventive treatment or a recommendation to keep the child at home.
- A young person with AIDS or HIV infection may be taking medications that should be administered by a health care professional, or he or she may require immunizations (vaccines) different from those of other students or not be able to receive certain vaccines. Schools are bound by state law to comply with DPH regulations governing the administration of medication (M.G.L. c.71, s.54B) and to determine whether a student has had certain immunizations. (See first section in this chapter on immunization requirements.) Therefore, a parent/guardian may decide that knowledge of an AIDS diagnosis or HIV infection will help the school nurse or school physician meet the child's medical needs.

If, in consultation with the student's primary care physician, a parent/guardian decides to inform certain school personnel, particularly the school nurse and school physician, of the student's HIV/AIDS status, the DOE recommends and notes the following:

- The student's parent/guardian or the student may inform the school nurse or school physician directly.

- The student's parent/guardian may request that the child's personal care physician make the disclosure. In this case, specific, informed, written consent of the student's parent/guardian is required before the physician may disclose the information.
- Further disclosure of a student's HIV status by the school nurse or school physician to other school personnel requires the specific, informed, written consent of the student's parent/guardian or of the student, informing his or her own decisions under M.G.L. c.112, s.12F.

A student and the student's parent/guardian may also decide to inform the student's teacher(s), counselor, school principal, or other staff members, but they are not obliged to do so. This is *their* decision alone. Given the privacy protection of M.G.L. c.214, s.1B and Family Educational Rights and Privacy Act (FERPA), all school personnel are bound to protect confidentiality.

If and when informed, written consent is given enabling school staff to disclose to others in the school, the form or letter giving this consent should spell out specifically which individuals can be informed, what information is to be shared, and a timeframe during which this consent applies. It should specify *names* of individuals, not their titles or roles in the school. Staff titles and positions change, and a student's family may not want a new person holding the position to be informed.

Privacy of Records

Because licensed physicians, nurses, social workers, and psychologists (according to M.G.L. c.111, s.70F, as well as, c.112, s.135A, and c.112, s.129A; and the federal Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule, 45CFR164) have a duty to protect HIV/AIDS-related and other private information, the signed consent form and any HIV/AIDS-related information should be kept by the school nurse in a locked file separate from the school health record. It is recommended that the information be placed in a folder that specifically states on the outside who has written permission to view it, since the folder itself contains sensitive information. The locked file should be separate from the school health record because these records are routinely accessible to school staff who deal with the student. (School psychologists, social workers, and other professionals may also keep private notes of their sessions with students, storing them in a locked file.)

SEXUALLY TRANSMITTED DISEASES (STDs)

Sexually transmitted diseases are transmitted when an infected person has unprotected sexual intercourse or other intimate physical contact with another person. Sexual contact likely to transmit STDs includes insertion of a penis into a vagina, mouth, or anus; and any other genital-mucous membrane contact. The most common sexually transmitted diseases include syphilis, gonorrhea (gonococcal infection, or GC), chlamydia, warts (condyloma), herpes simplex, hepatitis B, and HIV infection.

Following is a list of STDs and their corresponding symptoms:

- ***Syphilis:*** Painless sore, most commonly on or around the penis, vulva, vagina, perineum, mouth, or anus, usually accompanied by enlarged regional lymph nodes. This is often followed within 4–10 weeks by a rash over the body, including the palms of the hands and soles of the feet, constituting secondary syphilis. Symptoms will subside even in the absence of treatment, but the infection will persist.
- ***Gonococcal infection (GC):*** For males, purulent discharge, or pain or burning while urinating. For females, vaginal discharge, odor, pain while urinating, or bleeding after intercourse.

- ***Chlamydia:*** For males, mucoid discharge, or pain or burning while urinating. For females, vaginal discharge, odor, or pain. Spotting of blood after intercourse or between menstrual periods may occur. Most often, no signs or symptoms are present.
- ***Warts:*** For males, wart-like growths on the penis, scrotum, urethral meatus, or perianal area. For females, wart-like growths on the introitis, vulva, perineum, or perianal area.
- ***Genital herpes:*** Painful, pruritic sores on the genitals. (Refer to section on herpes simplex infection for more detailed information.)
- ***AIDS:*** Weight loss, night sweats, persistent sores, swollen lymph nodes, sore throat, and repeated and lingering infections. (For a discussion of HIV infection and AIDS, see the "Diseases Spread Through Blood Contact" section.)
- ***Hepatitis B:*** Weakness, abdominal pain, nausea, vomiting, dark urine, and jaundice. (For a discussion of Hepatitis B, see the "Diseases Spread Through Blood Contact" section.)

Note: For more detailed descriptions, refer to a standard infectious disease manual published by professional organizations such as the American Academy of Pediatrics, the American Public Health Association, or the Centers for Disease Control and Prevention.

STD-infected people can remain asymptomatic and still transmit STDs to sexual partners. This is particularly true for women. Anyone who thinks he or she has been exposed to an STD should be seen by a health care provider immediately. Sexually active adolescents should be screened regularly for STDs. Infection with one STD always indicates the need to consider and test for other STDs.

Transmission: Individuals who have unprotected sex, especially if they have many partners, are at risk of exposure to STDs. Some STDs can also be transmitted directly by sharing contaminated needles. Other non-needle forms of substance abuse also increase risk of exposure because they impair judgment. Some drugs such as crack cocaine may increase sex drive, number of partners, and/or frequency of sex, thus increasing opportunities for unprotected sex with an infected person.

If untreated, STDs may cause serious physical and reproductive damage or even death. They are particularly dangerous to infants whose infected mothers are not treated during pregnancy. Infected infants may be born mentally retarded or physically deformed, or they may die.

Prevention: Abstinence from sexual intercourse or intimate physical contact and needle sharing will protect against STDs. For those who are sexually active, condom use reduces the risk of being infected with an STD, as does limiting the number of partners. Because substance use may increase the chances of becoming infected, avoidance of substance use is critical to protecting against STDs. Addicts should be provided with detoxification and recovery services as well as education and tools to prevent transmission of STDs and HIV/AIDS.

Diagnosis: Physical examination, blood tests, and cultures assist in diagnosis.

Treatment: Bacterial STDs (syphilis, GC, and chlamydia) can be treated with antibiotics administered orally or by intramuscular injection. Genital warts can be treated with several local treatments (chemical, cryotherapy, laser). No cures exist for viral infections such as hepatitis B, genital herpes, or AIDS, although hepatitis B may resolve itself. Hepatitis B can be prevented with a vaccine. Herpes symptoms may be treated with antiviral therapy.

Infected people may consult their own health care providers or attend one of many publicly funded clinics providing comprehensive STD services. These clinics have highly trained and sensitive staff

and provide STD services to all people regardless of age, race, sex, ethnicity, ability to pay, town of residence, country of origin, or immigration status.

By law, state-contracted STD clinics diagnose and treat STDs. Visit http://www.mass.gov/dph/cdc/std/services/clinicsched.htm for information about clinic locations and schedules. These clinics can treat minors without requiring parental consent, and these services are free to minors. Because minors are not billed, no insurers are notified of these services.

Reporting requirements: STDs are directly reportable to DPH. (Contact DPH for their sample confidential report for sexually transmitted diseases.) Hepatitis B, which is also spread through blood contact, is reported to the local board of health. DPH will not release the identity of any case, and data is released in aggregate form only, so that no individual can possibly be identified. The success of educational programs and disease prevention activities depends largely on the community trusting that all personal information is kept confidential. (Refer to the following web page for a list of sexually transmitted diseases reportable directly to DPH: http://www.mass.gov/dph/cdc/surveillance/rprtbldiseases_hcp.pdf.

DISEASES SPREAD FROM ANIMALS TO PEOPLE (ZOONOTIC DISEASES)

Diseases spread from animals to people are called *zoonotic diseases.* Some foodborne and waterborne diseases that may be traced to disease in animals are salmonellosis, campylobacteriosis, and giardiasis, discussed earlier in this chapter. The three disease categories discussed in this section are rabies, tickborne diseases, and arboviral (mosquito-borne) diseases, none of which are transmitted person-to-person.

Animals in the Classroom

Animals can be effective teaching aids, and the benefits of the human-animal bond are well established. However, animals in the classroom necessitate certain safeguards. Because diseases can be transmitted from animals to people, consideration should be given to potential health issues before bringing animals into the classroom.

Animals may carry parasites, bacteria, and other organisms that can be transmitted to people. Zoonotic diseases can be spread by direct contact with an infected animal or its feces, through insects that bite or live on animals, or from contact with organisms that live in the environment where an animal lives. Certain groups of people may be more susceptible to zoonotic diseases, including infants, children, pregnant women, and those with weakened immune systems.

Schools should develop clear parent/guardian notification guidelines and safety protocols before allowing household pets into the classroom. No wild animal, no matter how tame or cute, should be brought into a classroom except under the direct supervision of a qualified animal care professional. Each year in Massachusetts, 3–5 episodes are reported of wild or stray animals being brought into a classroom without proper controls. These exposures are preventable and create unnecessary health scares.

DPH guidelines on animals in classrooms are available at the DPH rabies website, http://www.mass.gov/dph/cdc/epii/rabies/schoolprotocol.htm.

Rabies

Rabies is a viral disease of mammals most often transmitted through the bite or scratch of an animal with the disease. Rabies virus infects the central nervous system, causing encephalitis and ultimately death. Animals with rabies often behave strangely after the virus attacks their brains. Rabid animals may attack people or other animals for no apparent reason, or they may lose their fear of people and seem to be unnaturally friendly. Not all rabid animals act this way; some may act normally.

Since the 1950s, the number of cases of rabies in domestic animals has decreased dramatically through the introduction of animal control, licensing, and vaccination campaigns. However, the public health impact of rabies in Massachusetts remains significant because rabies is common among wild animals (especially raccoons, skunks, bats, and woodchucks). Considerable time and resources are expended in testing suspect animals and in evaluating human and pet exposures, as well as in quarantining pets that have bitten or scratched other pets or humans, or pets that have been bitten or scratched themselves by another potentially rabid animal. The vast majority of human exposures to potentially rabid animals are preventable.

All mammals, including humans, can get rabies. Worldwide, rabies causes over 20,000 human deaths per year. Rabies in humans is a rare occurrence in the United States. If a high-risk exposure occurs, humans can be treated to prevent development of the disease. Once symptoms of rabies develop, however, the disease is almost always fatal. The 1–2 cases in humans that are reported every year in the U.S. generally occur because of unrecognized exposures to rabid animals or because of improperly treated exposures that occurred while traveling in other countries.

In Massachusetts, as in all other areas with rabies, the risk to children is of special concern. Children under 14 are at higher risk for animal bites than older children — younger children may try to befriend stray or wild animals, or they may move suddenly and be bitten by a frightened animal. Children also may not be reliable reporters if an exposure occurs because of age, fear, or excitement.

Raccoons, skunks, and bats are the species most commonly affected by rabies in Massachusetts; however, rabies does spill over into other animals such as foxes and woodchucks. Cats, dogs, horses, cattle, and other livestock also get rabies and can spread it to people if these animals are not protected by vaccination. Rabies is very rare among small rodents like squirrels, rats, mice, and chipmunks. Birds, fish, snakes, lizards, turtles, and insects *cannot* spread rabies.

Transmission: The rabies virus is found in the saliva and neurologic tissues of infected animals and is spread when the infected animal bites or scratches another animal or human. The virus can be spread if saliva or infected brain tissues touch broken skin or a mucous membrane (lining of the mouth, nose, or eyes). Rabies is not spread through the air.

Diagnosis: Rabies is diagnosed in animals by killing the animal and testing a sample of brain tissue for the virus. Tests done on live animals are not reliable. In humans suspected of having rabies, special tests are done on the blood, spinal fluid, skin, cornea, and brain.

Reporting requirements: All animal bites should be reported to the local board of health and local animal control official. Dogs, cats, and ferrets that bite people must be observed for 10 days for signs of rabies. Wild animals that bite children should be captured by the local animal control official and submitted to the State Laboratory for rabies testing.

Notification guidelines: When any animal bites or scratches a student, school personnel should notify the student's parent/guardian and the local board of health. Parents/guardians should be

advised to contact a physician for evaluation of the exposure. When necessary, they may consult with DPH.

Prevention: An effective vaccine is available for dogs, cats, ferrets and certain other domestic animals to prevent rabies. Since rabies is transmitted by infected animals, people and pets should avoid exposure to wild and stray animals. Prompt medical attention should be sought if people or pets are bitten, scratched, or otherwise exposed to stray or wild animals. A very safe and effective treatment is also available for people who are exposed, consisting of a series of rabies vaccinations and rabies immune globulin. Students and staff receiving the series of rabies vaccines after a potential rabies exposure pose no risk to other students.

Prevention guidelines:

- Teach children to avoid contact with wildlife and strays.
- If a sick or strange-acting animal is noticed around the school, the local animal control official should be called immediately for assistance.
- If anyone is bitten or scratched by any animal, wash the wound immediately with warm, soapy water for 10 minutes and contact a physician and the local board of health. Children should be taught that if they are bitten or scratched by an animal, they should immediately contact a parent/guardian, teacher, or other responsible adult.
- If a student is bitten or scratched by any animal, school personnel should administer first aid and notify the school nurse, the student's parent/guardian, and the local board of health. Advise the parent/guardian to consult with a physician or emergency room for evaluation of the exposure.
- Vaccinate dogs, cats, and ferrets against rabies, and do not allow pets to roam free.
- Prevent wild animals from foraging for food or seeking shelter by fastening trashcan lids, tightly capping chimneys (common nesting sites for raccoons), and sealing openings into buildings, barns, and garages.
- If a pet has been bitten or scratched by any other animal, put on gloves and wash the animal's wounds promptly with soap and water. *Gloves should be worn to avoid potential exposure to infected saliva or tissue on the pet from a potentially rabid animal.* A veterinarian and the local animal control officer should be contacted.

Check the DPH rabies website, http://www.mass.gov/dph/cdc/epii/rabies/rabies.htm, often to obtain the latest information. In addition, DPH's "Stay Away From Strays" school-based curriculum and other educational materials and pamphlets are available at the DPH website, http://www.mass.gov/dph (Health Topic Index).

Tickborne Diseases

Ticks feed on the blood of mammals, birds, and reptiles**.** *Dog ticks* and *deer ticks* are found throughout Massachusetts and may spread different disease-causing agents when they bite.

Diseases spread by dog ticks:

- *Rocky Mountain spotted fever (RMSF)* is a rare bacterial disease that usually presents as a high fever with severe headache and fatigue, 2–14 days after the bite of an infected dog tick. A rash that spreads to the palms of the hands and soles of the feet usually appears 3–5 days after the fever begins. In Massachusetts, cases occur most frequently in the southeastern part of the state, on Cape Cod, and on Martha's Vineyard.
- *Tularemia* is a rare bacterial disease that can be spread to people in a number of ways, including through a bite of an infected dog tick. Symptoms vary depending on the way the organisms are transmitted, and usually begin between 3–5 days after an exposure,

although this period can be as long as 21 days. People infected by a tick bite typically have a slow-healing skin sore (ulcer) and swollen glands (lymph nodes). In Massachusetts, cases occur most frequently on Cape Cod, Martha's Vineyard, and Nantucket.

Diseases spread by deer ticks:

- *Lyme disease,* the most commonly occurring tickborne disease in Massachusetts, is caused by bacteria transmitted by the bite of infected deer ticks. Initial symptoms begin 3–30 days after a person is bitten and may include an expanding rash at the site of the bite and/or flulike symptoms. If left untreated, the bacteria can spread to almost any site in the body and cause arthritis, neurologic difficulties, and/or heart problems. Cases of Lyme disease occur throughout Massachusetts.
- *Babesiosis* is caused by a parasite that affects red blood cells. Most people who are infected will exhibit very mild signs of illness or no signs at all. Symptoms, when they do occur, begin gradually about 1–6 weeks after the bite of an infected deer tick and can include fever, chills, headache, achy joints and muscles, fatigue, nausea, vomiting, abdominal pain, and dark urine. People without a healthy spleen or immune system are more likely to develop serious symptoms. In Massachusetts, cases occur most frequently on Cape Cod, Martha's Vineyard, and Nantucket.
- *Human granulocytic ehrlichiosis (HGE; anaplasmosis)* is caused by bacteria that affect certain white blood cells called granulocytes. Symptoms typically appear suddenly, 7–14 days after the bite of an infected deer tick, and can include fever, headache, muscle aches, chills, sweating, nausea, and vomiting. Because the disease may become life-threatening, immediate treatment is necessary. People without a healthy immune system are more likely to develop serious symptoms. In Massachusetts, cases occur most frequently on Cape Cod, Martha's Vineyard, and Nantucket.

Transmission: Anyone who is bitten by an infected tick can develop these diseases. Ticks go through a life cycle that includes larval, nymphal, and adult stages. Tick activity increases in the spring, peaks in the summer, and slowly decreases during the autumn months. While ticks are least active and least likely to feed during January and February, adult ticks can be active year-round when temperatures are above freezing. Ticks are most commonly found in grassy, brushy, or wooded areas. They do not jump or fly, but instead attach to animals or people that come into direct contact with them. Deer tick nymphs are the size of a poppy seed, and deer tick adults are the size of a sesame seed. Adult dog ticks are about the size of a watermelon seed. The greatest chance of coming in contact with ticks occurs while walking barelegged through brush or tall grass, from May through August.

Not all deer ticks carry Lyme disease, and most ticks do not carry the agents of babesiosis, HGE, Rocky Mountain spotted fever, or tularemia. Thus a tick bite does not necessarily mean that disease will follow, and prompt removal of a tick reduces the likelihood of disease transmission.

Diagnosis: Lyme disease is diagnosed primarily through recognition of typical symptoms such as the characteristic skin rash. Atypical cases, or cases with only later-stage complications of Lyme disease (in which no rash may appear), are difficult to diagnose because the symptoms resemble other diseases. A blood test searching for antibodies to the bacteria may be helpful. The diagnoses of RMSF, HGE, babesiosis, and tularemia are also based on specific symptoms and a history of tick bites or exposure to high-risk areas for tick exposure. The diagnosis of the disease must be confirmed with a blood test specific for each disease.

Treatment: All of these tickborne diseases can be effectively treated with antimicrobials. Early recognition and treatment are important to prevent complications.

School attendance guidelines: There is no need to exclude students or adults bitten by a tick, those diagnosed with a tickborne illness, or those exposed to an individual diagnosed with these diseases.

Reporting requirements: A diagnosis of Lyme disease, babesiosis, HGE, Rocky Mountain spotted fever, or tularemia must be reported to the local board of health.

Notification guidelines: If a tick bites a student, remove it as outlined below. Notify the student's parent/guardian so they can inform their health care provider. Parents/guardians may want to save the tick for identification, circle the calendar date, and note where on the body the tick was removed. If the student develops a skin rash and/or flulike symptoms, ask the parent/guardian to see a health care provider promptly for evaluation and treatment.

Parents/guardians should be notified about potential health risks before students engage in a school-sponsored outdoor activity, in which they could be exposed to ticks. Parents/guardians should apply insect repellent before the trip or teach their children how to apply repellent. Per existing state regulations and school-based guidelines, the school should develop protocols and procedures for notifying and educating parents/guardians of potential health risks and clarifying the home and school's roles and responsibilities.

Prevention guidelines: No vaccine is currently available to protect humans against Lyme disease or any other tickborne disease.

When outdoors, on field trips or in areas that may harbor ticks, students should:

- Stick to main pathways and the center of trails when hiking.
- Wear long-sleeved, light-colored shirts and long pants tucked into socks.
- Use repellents, according to the manufacturer's recommendations. The two most common active ingredients in repellents are DEET (N-N-diethyl-meta-toluamide) and permethrin. These products remain effective for many hours, so it is not necessary to frequently reapply them.

After returning indoors, students should be told to:

- Check for ticks immediately. This is critical because the longer an infected tick remains attached, the higher the likelihood of disease transmission. Favorite places ticks like to go on the body include between toes, behind knees, groin, armpits, neck, hairline, and behind ears.
- Wash repellent-treated areas with soap and water. (Note: Parents/guardians should also launder treated clothing before reuse.)

If an attached tick is found:

- Students should notify the school nurse immediately. The longer an infected tick remains attached to a person or animal, the higher the likelihood of disease transmission. The tick should be carefully removed as soon as possible.
- The school nurse should use fine-point tweezers to grip the mouthparts of the tick as close to the skin as possible. The tick should not be squeezed or twisted, but pulled straight outward with steady, gentle pressure.

Facts About Repellents

Repellents containing DEET can be applied to exposed skin and clothing. DEET is effective in repelling ticks and insects when used according to the manufacturer's recommendations. Since

DEET can be absorbed through the skin, and in rare cases causes illness, students or parents/guardians should not apply too much, not apply it to broken skin, and not apply it to skin that will be covered by clothing. Repellents should not be applied in closed spaces such as cars or tents. Repellents used on young children should not be applied to hands or faces, as children often rub their eyes and faces and put their fingers in their mouths. Products with DEET concentrations above 10%-15% should be avoided in children, and products with DEET concentrations above 30%-35% should be avoided in adults.

If parents/guardians are concerned about exposures to chemicals, they can be instructed to use the lowest concentration of DEET that provides protection for the length of time the student will be exposed to mosquitoes. Higher concentrations of DEET may provide protection for a longer period of time, but they do not provide better protection.

Permethrin-containing products kill ticks that contact them. Permethrin products are not designed to be applied to the skin. Clothing should be treated and allowed to dry in a well-ventilated area prior to wearing. Because permethrin binds very tightly to fabrics, once the fabric is dry, very little of the permethrin gets onto the skin.

A number of plant-derived products are also available for use as repellents. Limited information is available regarding the short-term and long-term health effects and overall effectiveness of these products. The information that is available indicates that these products do not provide the same level or duration of protection as DEET or permethrin-containing products.

If you suspect that a child is having an adverse reaction to a repellent, wash the treated area, remove treated clothing, and **call the Massachusetts Poison Control Center at 800-222-1222.** Notify the parent/guardian. If the child sees a doctor, have them take the repellent with them; the label information may be useful to the physician.

Arboviral Diseases (Disease Spread by Mosquitoes)

In Massachusetts, some mosquitoes can transmit eastern equine encephalitis virus (EEEV) and West Nile virus (WNV). Eastern equine encephalitis (EEE) is a rare but serious viral disease. Typical symptoms include high fever, stiff neck, headache, and fatigue. Inflammation and swelling of the brain, called encephalitis, is the most dangerous result. Most reported human cases of EEE have occurred in the southeastern part of the state.

WNV infections have been reported throughout Massachusetts, in birds, mosquitoes, horses, and humans. Most WNV infections do not cause any symptoms. Mild WNV infections can cause fever, headache, and body aches, often with a skin rash and swollen lymph glands. In a small percentage of infected people, the disease can be serious, even fatal. More severe infections include meningitis and encephalitis, which can cause severe headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, paralysis, and sometimes death. Persons older than 50 have a higher risk of developing severe illness. There is no evidence that children are at increased risk for developing severe illness. The risk of contracting EEEV or WNV is highest from late July through September but continues into late fall.

Transmission: EEEV and WNV grow in birds and are spread from bird to bird by infected mosquitoes. Horses and humans bitten by infected mosquitoes can also become sick. Mosquitoes that carry EEEV are usually found near freshwater swamps, while those that carry WNV are common throughout the state and are found in cities as well as woods and other less populated places. Only a small proportion of mosquitoes are infected with EEEV or WNV at any given time, so being bitten by a mosquito does not mean a person will become sick. The best way to prevent both of these illnesses, however, is to avoid mosquito bites.

Horses or humans infected with EEEV or WNV cannot spread the disease directly to humans. During high-risk months (June-September), DPH collects information on the location of dead birds and tests certain birds for WNV. While no evidence exists that a person can get WNV from touching live or dead infected birds, staff should be reminded of basic safety precautions for handling any dead animal, including a dead bird. If staff need to move or dispose of a dead bird, they should use gloves or a shovel to handle it, place it into two plastic bags (one inside the other), and dispose of it in the trash. To report a dead bird found on school property, call the DPH Public Information Line at 866-MASS-WNV (866-627-7968).

Diagnosis: These diseases are diagnosed by recognition of the typical symptoms and by a specific blood test.

Treatment: No specific treatment exists for EEEV or WNV infection. People with mild infections usually recover on their own. Doctors can provide supportive therapy for people who have more serious complications such as encephalitis or meningitis.

School attendance guidelines: Because these diseases are not spread person-to-person, there is no need to exclude students or adults diagnosed with or exposed to an individual diagnosed with EEEV or WNV.

Reporting requirements: A diagnosis of EEE or WNV must be reported to the local board of health.

Notification guidelines: Parents/guardians should be notified of potential health risks before students engage in a school-sponsored outdoor activity where they could be exposed to mosquitoes. Parents/guardians should apply repellent before field trips or teach their children how to apply repellent. Per existing state regulations and school-based guidelines, the school should develop protocols and procedures for notifying and educating parents/guardians about potential health risks and clarifying the home and school's roles and responsibilities.

Each spring, DPH begins surveillance for EEEV and WNV by testing samples of birds and mosquitoes throughout the state. The results from these tests, as well as tests of horses and humans, are posted on the DPH WNV website at http://www.mass.gov/dph/wnv/wnv1.htm. Schools should work closely with the local board of health to notify parents/guardians about the risk of disease and to educate them about preventing their children's exposure to mosquitoes.

Prevention guidelines: No human vaccine is available for EEEV or WNV. The following personal protection measures are effective in reducing contact with mosquitoes:

- Wear long-sleeved shirts and long pants.
- Stay indoors at dawn and dusk, when mosquitoes are most active.
- Use mosquito netting on baby carriages or playpens when a baby is taken outdoors.
- Make sure screens are repaired and are tightly attached to doors and windows.
- Make sure water does not collect in school playground equipment, maintenance equipment, or landscaping materials that are left unattended for long periods of time. Remove standing water from ditches, gutters, old tires, wheelbarrows, and wading pools. Mosquitoes that bite people can begin to grow in any puddle of standing water that exists for more than four days.
- Children on field trips should avoid camping overnight near freshwater swamps to reduce their risk of exposure to mosquitoes that carry EEEV. If a trip is scheduled, notify parents/guardians of the risk, use tents with mosquito netting, and use appropriate repellents.

- Use mosquito repellents, making sure to follow directions on the label.

Repellents should be used according to the manufacturer's recommendations. The two most common active ingredients in repellents are DEET and permethrin. Because these products remain effective for many hours, it is not necessary to reapply them frequently. For additional information, see "Facts About Repellents" in the "Tickborne Diseases" section.

If you suspect that a child is having an adverse reaction to a repellent, wash the treated area, remove treated clothing, and **call the Massachusetts Poison Control Center at 800-222-1222.** Notify the parent/guardian. If the child sees a doctor, have them take the repellent with them; the label information may be useful to the physician.

SPORTS-ASSOCIATED INFECTIOUS DISEASES

In addition to the everyday contacts in the classroom, cafeteria, or schoolyard that can spread infectious diseases, student athletes may contract or spread infectious diseases while participating in sports. Teachers, coaches and athletic staff, school/team physicians, school nurses, and others responsible for the health and safety of athletes need to be aware of the infectious disease spread that can occur during training, competition, or even physical education class activities.

Transmission of infectious diseases in sports settings usually occurs via direct contact, the fecal-oral route, common-source exposure, or airborne and/or droplet spread. Exposure risk may extend to individual athletes, entire teams, and spectators. In some cases, disease transmission is unavoidable due to infectiousness before symptoms become apparent. In other cases, disease spreads when many people congregate together or share water bottles or other eating/drinking utensils. The following chart lists some infectious diseases that have occurred due to sports-related activities.

Sports-Associated Infectious Diseases

Disease	***Mode of transmission***	***Sport***
<u>Skin</u> • Herpes simplex virus (HSV) (*herpes gladiatorum*) • *Staphylococcus aureus* • Group A streptococci • Fungi	Direct contact	Wrestling, rugby, sumo wrestling, basketball, football
<u>Skin</u> • *Pseudomonas aeruginosa*	Common-source	Swimming
<u>Gastrointestinal/Respiratory</u> • Enteroviruses (coxsackievirus, echoviruses)	Common-source or fecal-oral	Team sports
• Meningococcal disease	Saliva exchange, droplet	Team sports
• Measles	Airborne or droplet	Tournaments involving gymnastics, basketball, wrestling, other indoor sports

Some concern has been raised about the possibility of sports-related transmission of bloodborne pathogens. To date, this type of transmission has not been implicated in HIV infection, and studies have concluded that such risk is remote. Organizations such as the Committee on Sports Medicine and Fitness have addressed concerns about this issue by publishing recommendations or guidelines for standard precautions (http://aappolicy.aappublications.org).

Team physicians, trainers, school nurses, physical education teachers, and others involved with the health of the student athlete should not only be able to recognize and manage acute problems but also institute policies for the prevention of disease transmission. Good general hygiene practices and limiting exposure of infected individuals form the basis for the following recommendations:

- Coaches, trainers, and physical education instructors should be educated about the need to prevent sharing of water bottles and pails by athletes during sports-related activities.
- Students diagnosed with skin infections should be cautioned about their participation in sports involving close physical contact. Players with open lesions that cannot be covered should not be permitted to participate in sports where they could transmit disease to others. Teammates, coaches, and officials must be actively involved in recognizing these infections.
- All athletic equipment in contact with a student's skin or secretions should be routinely cleaned after use. This would include, but not be limited to, gymnastic and wrestling mats, towels, mouth guards, and other protective equipment.
- *All* students must be vaccinated against communicable diseases, as described in the section on immunizations.
- When airborne diseases occur, a mechanism should be in place to inform everyone determined to be exposed, including athletes, staff, and spectators.
- Athletes with symptoms of an infectious disease should not be permitted to participate in sports activities until they are evaluated by their health care provider and are not infectious.
- Public health officials should be notified immediately of a case or suspected case of a reportable disease in an athlete. Timely reporting of even a suspected case of an infectious disease may help to prevent further spread among athletes, spectators, and the community.
- Any outbreaks of infectious disease occurring in the school, regardless of cause, should be reported to public health officials to ensure prompt investigation and institution of control measures.

General prevention guidelines pertaining to particular modes of disease transmission can be found throughout this chapter.

A note about antimicrobial resistance and resistant staph: Some kinds of staph are resistant to certain antibiotics that may be used to treat an infection. Methicillin-resistant *Staphylococcus aureus* (MRSA) is resistant to a family of antibiotics related to penicillin, including methicillin and oxacillin. Like other staph, MRSA may be carried on the nose or skin without causing an infection, or may cause mild skin infections (like impetigo) that do not require antibiotic treatment. MRSA does not usually cause more serious problems than any other staph, but when MRSA does cause an infection that needs antibiotic treatment, the correct antibiotics must be used in order to be effective.

Infections with MRSA are relatively rare in community settings (that is, outside of hospitals and nursing homes), but they are increasing. Small clusters of MRSA infections have been associated with playing contact sports, particularly those sports which involve a lot of direct skin-to-skin contact, and which may involve skin damage (cuts and scrapes). For more information concerning antibiotic resistance and MRSA, including information for school nurses, coaches, and athletic directors, please go to the following page on the Massachusetts Department of Public Health website: http://www.mass.gov/dph/cdc/antibiotic/antibiotic_home.htm.

INFECTIOUS DISEASE EMERGENCIES AND BIOTERRORISM

The terrorist events in the United States in Fall 2001 highlighted the importance of preparing for bioterrorism and other infectious disease emergencies in this country. School health personnel may be the first to suspect an unusual health event in the community and the first to identify an actual outbreak. Because the mere threat of bioterrorism can cause disruption, fear, and panic, schools with policies and procedures in place will be best able to respond to these challenges.

An infectious disease emergency is an event with one or more of the following characteristics: (a) significant public health impact, (b) infectivity and risk of transmission, (c) necessity of intervention to prevent and control infection, and (d) fear and panic, sometimes widespread.

Many school health personnel have experience with infectious disease emergencies, such as a student seriously ill with meningitis. In such a situation, close contacts must be identified and treated, and there may be widespread concern among parents, teachers, and the media.

In a post-9/11 world, preparing for infectious disease emergencies in schools may be as simple as providing health services to students, with enhanced awareness of the potential for an infectious disease emergency and bioterrorism, or preparation may be more complex, involving school and community planning for a range of possible emergencies.

Bioterrorism is the intentional or threatened use of a biologic agent to hurt people, create fear, and/or disrupt society. Bioterrorism may or may not result in an infectious disease emergency. As we have learned, the threat of bioterrorism is sufficient to close workplaces, initiate HazMat team responses, and create fear and concern. During 2001's anthrax incidents, the State Laboratory Institute tested over 3,000 items for anthrax. All results were negative.

Issues for Schools

Every community in Massachusetts is required by law to have a Local Emergency Planning Committee (LEPC). These groups should include representatives from public health, emergency management, public safety, hospital and medical communities, and business and civic organizations. The local school district and school health programs are not required members of this committee but are encouraged to participate.

Schools' comprehensive safety plans should address a range of infectious disease emergencies. Planning should involve public health, public safety, and emergency management personnel. The plan should address such challenges as (a) maintaining essential school services with high absenteeism (staff and students), (b) communication with staff and students after school hours, (c) communication with media, and (d) guidelines for evacuation, or "shelter in place." Plans should be reviewed, exercised, and updated regularly. See Chapter 2 for further information on emergency planning.

SUMMARY

Having the ability to recognize and respond to the array of infectious diseases that can be found in the school setting is an important role of an effective school health program. Detailed and comprehensive descriptions of the more common infectious diseases, as well as ones that occur less often but which may have a profound health impact, have been presented in this chapter. While families and their health care providers have the final responsibility for care of individual students with infectious diseases, the schools play in important part as they take measures to: prevent infection from spreading, report certain illnesses, require certain immunizations, temporarily exclude some children from school, and respond to outbreaks and emergencies of all types. In some cases school personnel are the first to suspect an unusual health event in the community, and the first to identify an actual outbreak.

RESOURCES: GENERAL

Massachusetts

Massachusetts Department of Public Health

Division of Epidemiology and Immunization
Phone: 888-658-2850 or 617-983-6800

Division of STD Prevention
Phone: 866-749-7122 or 617-983-6940

Division of TB Prevention and Control
Phone: 617-983-6970

HIV/AIDS Surveillance Program
Phone: 617-983-6560

MRSA Information and Resources
Website: http://www.mass.gov/dph/cdc/antibiotic/antibiotic_home.htm

Refugee and Immigrant Health Program
Phone: 617-983-6590

National

Center for Infectious Disease Preparedness
School of Public Health
UC Berkeley Mail Code 7350
1918 University Ave, 4th Floor
Berkeley, CA 94720-7350
Phone: 510-643-4939
Fax: 510-643-4926
E-mail: cidp@berkeley.edu
Website: http://www.idready.org/
The Center trains frontline public health staff to detect, investigate, and respond to infectious disease threats through collaborative learning, continuous training, evaluation, and research. It is part of the national network of CDC-funded Centers for Public Health Preparedness (CPHP), which are coordinated through the Association of Schools of Public Health (ASPH) and work collaboratively with representatives from state and local public health agencies, Association of State and Territorial Health Officials (ASTHO), and National Association of County and City Health Officials (NACCHO).

Center for Infectious Disease Research and Policy (CIDRAP)
University of Minnesota
Academic Health Center
420 Delaware Street SE
MMC 263
Minneapolis, MN 55455
Phone: 612-626-6770
Fax: 612-626-6783
E-mail: cidrap@umn.edu
Website: http://www.cidrap.umn.edu
CIDRAP's mission is to prevent illness and death from infectious diseases through epidemiologic research and the rapid translation of scientific information into real-world practical applications and solutions. It focuses on public policy support, dissemination of critical information, response planning, and professional education.

National Institute of Allergy and Infectious Diseases (NIAID)
National Institutes of Health
U.S. Department of Health and Human Services
Phone: 301-402-1663
Fax: 301-402-0120
E-mail: niaidnews@niaid.nih.gov
Website: http://www.niaid.nih.gov
NIAID conducts and supports basic and applied research to better understand, treat, and ultimately prevent infectious, immunologic, and allergic diseases.

Parents of Kids with Infectious Diseases (PKIDs)
Phone: 877-55-PKIDS
E-mail: pkids@pkids.org
Website: http://www.pkids.org
PKIDs supports families whose children have been affected by viral hepatitis, HIV/AIDS, and other diseases and educates the public about effective disease prevention practices. The website offers information in English, Spanish, Russian, and Simplified Chinese.

RESOURCES: SPECIFIC DISEASES

HEPATITIS

Massachusetts

Massachusetts Department of Public Health
Hepatitis A Information and Resources
Website: http://www.mass.gov/dph/cdc/epii/hepatitis/hepa.htm

Massachusetts Department of Public Health
Hepatitis C Information and Resources
Hotline: 888-443-HEPC (4372)
Website: http://www.masshepc.org

National

American Liver Foundation
75 Maiden Lane, Suite 603
New York, NY 10038
Phone: 800-465-4837, 888-443-7872, 212-668-1000
Fax: 212-483-8179
E-mail: info@liverfoundation.org
Website: http://www.liverfoundation.org
Website offers resources, links, and patient materials on all types of hepatitis.

American Liver Foundation, New England Chapter
88 Winchester Street
Newton, MA 02461
Phone: 800-298-6766 or 617-527-5600
Fax: 617-527-5636
E-mail: info@liverfoundation-ne.org
Website: http://www.liverfoundation-ne.org

CDC-National Center for Infectious Diseases (NCID)
Viral Hepatitis
Phone: 888-443-7232
This 24-hour toll-free hotline provides recorded information on viral hepatitis, fact sheets by fax, and an option to speak to a live counselor about viral hepatitis issues.
Website: http://www.cdc.gov/ncidod/diseases/hepatitis/index.htm

Hepatitis C Association
1351 Cooper Road
Scotch Plains, NJ 07076-2844
Phone: 866-437-4377
Fax: 908-561-4575
Website: http://hepcassoc.org
The focus of the Hepatitis C Association is to educate the public, both medical professionals and private citizens, about hepatitis C virus. It offers factual information through educational programs and support materials.

Hepatitis Foundation International (HFI)
504 Blick Drive
Silver Spring, MD 20904-2901
Phone: 800-891-0707 or 301-622-4200
Fax: 301-622-4702
E-mail: hfi@comcast.net
Website: http://www.hepfi.org
HFI provides education, training programs, and materials (including videos, booklets, information sheets, and posters) for patients, educators, medical professionals, and the general public about liver wellness and the diagnosis, treatment, and prevention of viral hepatitis.

Hep C Advocate Network (HEPCAN)
1821 Clinton
Longview, TX 75604
Phone: 903-291-9700
Website: http://www.hepcan.org
HEPCAN is an all-volunteer organization representing persons living with Hepatitis C. It combines advocacy and education.

Hep C Connection
190 East Ninth Avenue, Suite 320
Denver, CO 80203
Phone: 800-522-HEPC
Website: http://www.hepc-connection.org/
The Hepatitis Help Line Call Center (number shown above) operates Monday through Friday, 7am to 5pm MST. Its trained phone counselors are hepatitis C-challenged individuals or caregivers for hepatitis C-challenged family members. They combine personal experience with ongoing research and training to provide confidential, practical help and up-to-date information about living with the virus.

The Hepatitis C Support Project (HCSP)
P.O. Box 427037
San Francisco, CA 94142
Phone: 415-978-2400
Website: http://www.hcvadvocate.org
HCSP is a registered nonprofit organization. Its website provides unbiased information, support, and advocacy to all communities affected by HCV and HIV/HCV coinfection, including medical providers.

Hep Quest
Website: http://www.hepquest.com
Operated by Roche Canada, this website provides news and current data on hepatitis C, as well as information for the newly diagnosed.

HIV/AIDS

Massachusetts

AIDS Action Committee of Massachusetts, Inc.
294 Washington Street, 5th Floor
Boston, MA 02108
Phone: 617-437-6200
Fax: 617-437-6445
Website: http://www.aac.org
Founded in 1983, AIDS Action Committee of Massachusetts is a not-for-profit, community-based health organization whose mission is to stop the HIV/AIDS epidemic by preventing new infections and optimizing the health of those already infected. Through a cooperative and mutually supportive effort between over 70 staff and hundreds of volunteers, AIDS Action seeks to assist and constructively work with people of all cultures by providing services, education, advocacy, and prevention.

Massachusetts Department of Public Health
HIV/AIDS Bureau
250 Washington Street, 3rd Floor
Boston, MA 02108
Phone: 617-624-5300
Fax: 617-624-5399
TTD/TTY: 617-624-5387
HIV/AIDS Hotline: 800-235-2331 or 617-437-1672 (TTD/TTY)
Website: http://www.mass.gov/dph/aids/hivaids.htm
Publication: *HIV/AIDS, Hepatitis, STD and Substance Use Services and Resources Guide,* a guide to DPH-funded services, is intended to assist providers in making appropriate referrals for individuals in need of screening, testing, treatment, and other services related to HIV, hepatitis, STDs, or substance use.

National

AIDSinfo
P.O. Box 6303
Rockville, MD 20849-6303
Phone: 800-448-0440
Fax: 301-519-6616
E-mail: ContactUs@aidsinfo.nih.gov
Website: http://www.aidsinfo.nih.gov/other/contact.asp
AIDSinfo is a U.S. Department of Health and Human Services project that offers the latest federally approved information on HIV/AIDS clinical research, treatment, and prevention, as well as medical practice guidelines for people living with HIV/AIDS, their families and friends, health care providers, scientists, and researchers. Real-time online assistance is available Monday through Friday, 12 pm to 4 pm ET at http://aidsinfo.nih.gov/live_help. Spanish-speaking health information specialists are available.

National Library of Medicine (NLM)
Specialized Information Services (SIS) Division
2 Democracy Plaza, Suite 510
6707 Democracy Boulevard, MSC 5467
Bethesda, MD 20892-5467
Phone: 888-FINDNLM or 301-496-1131
E-mail: tehip@teh.nlm.nih.gov

Website: http://sis.nlm.nih.gov/hiv.html
NLM, the world's largest medical library, has been developing AIDS information services since the AIDS crisis began in 1980.

MENINGITIS

National Meningitis Association (NMA)
22910 Chestnut Road
Lexington Park, MD 20653
Phone: 866-366-3662 (866-FONE-NMA)
Fax: 877-703-6096
E-mail: support@nmaus.org
Website: http://www.nmaus.org
NMA is a nonprofit organization founded by five parents whose children have died or suffered long-term disabilities from meningococcal meningitis. Its mission is to educate families, medical professionals, and others about bacterial meningitis and prevention approaches to the disease.

PEDICULOSIS

National Pediculosis Association
50 Kearney Road
Needham, MA 02494
Phone: 781-449-NITS
Website: http://www.headlice.org

SEXUALLY TRANSMITTED DISEASES

Massachusetts

Boston HELP
Boston, MA
Phone: 781-648-4266
Web: http://www.bostonherpes.org/
Boston HELP is a local herpes support group.

Massachusetts Department of Public Health
Division of Sexually Transmitted Disease (STD) Prevention
Bureau of Communicable Disease Control
State Laboratory Institute
305 South Street
Jamaica Plain, MA 02130
Phone: 866-749-7122
Fax: 617-983-6962
Website: http://www.mass.gov/dph/cdc/std/divstd.htm

STD/HIV Prevention Training Center
State Laboratory Institute
Room 560
305 South Street
Jamaica Plain, MA 02130
Phone: 617-983-6945
Fax: 617-983-6962

National

American Social Health Association (ASHA)
P.O. Box 13827
Research Triangle Park, NC 27709
Phone: 919-361-8400
Fax: 919-361-8425
Website: http://www.ashastd.org/index.cfm
ASHA, a trusted, nongovernmental resource, is recognized by the public, patients, providers, and policy makers for developing and delivering accurate, medically reliable information about sexually transmitted diseases. It operates the National Herpes Resource Center and the National Herpes Hotline (919-361-8488, Monday through Friday, 9am to 6pm ET) to increase education and public awareness about herpes and to provide support for anyone concerned about herpes.

Centers for Disease Control and Prevention (CDC)
National Center for HIV, STD, and TB Prevention (NCHSTP)
Division of Sexually Transmitted Diseases
1600 Clifton Road
Atlanta, GA 30333
Phone: 800-311-3435 or 404-639-3534
CDC STD and AIDS Hotline (English):
800-952-6637 or 800-227-8922, 8am to 2am, 7 days a week
CDC, STD, and AIDS Hotline (Spanish):
800-344-7432, 8am to 2am, 7 days a week
E-mail: nchstp@cdc.gov
Website: http://www.cdc.gov/nchstp/od/nchstp.html
NCHSTP is responsible for public health surveillance, prevention research, and programs to prevent and control human immunodeficiency virus (HIV) infection and acquired immunodeficiency syndrome (AIDS), other sexually transmitted diseases (STDs), and tuberculosis (TB).

TUBERCULOSIS

Massachusetts

Massachusetts Department of Public Health
TB Prevention and Control
State Laboratory Institute
305 South Street
Jamaica Plan, MA 02130
Phone: 617-983-6970, or, for 24-hour reporting, 888-MASSMTB (888-627-7682)
Fax: 617-983-6990
Website: http://www.mass.gov/dph/cdc/tb

National

Division of Tuberculosis Elimination
Centers for Disease Control and Prevention
1600 Clifton Road, NE Mailstop E-10
Atlanta, GA 30333
Phone: 404-639-8135
E-mail: tbinfo@cdc.gov
Website: http://www.cdc.gov/nchstp/tb/default.htm
Questions and answers about tuberculosis, guidelines, education/training materials, newsletters, and more.

Tuberculosis.net
Website: http://www.tuberculosis.net

Designed by the faculty at Montefore Medical Center as a service to health care professionals, educators, and members of the community, Tuberculosis.net aims to increase the understanding of tuberculosis in the nonmedical community and among patients with tuberculosis by answering frequently asked questions and making available a community bulletin board.

VACCINE-PREVENTABLE DISEASES

Massachusetts

Massachusetts Department of Public Health
Bureau of Communicable Disease Control
State Laboratory Institute
305 South Street
Jamaica Plain, MA 02130
Phone: 617-983-6550
Fax: 617-983-6925
Website: http://www.mass.gov/dph/cdc/bcdc.htm

National

American Academy of Pediatrics
Childhood Immunization Support Program (CISP)
Website: http://www.cispimmunize.org/
CISP offers a compendium of information on vaccine-preventable illnesses, vaccines, and immunization initiatives as well as information and resources for parents and health professionals.

Centers for Disease Control and Prevention
National Immunization Program (NIP)
Phone: 800-232-2522 (English) or 800-232-0233 (Spanish)
Website: http://www.cdc.gov/nip/
NIP answers questions parents and health care professionals have about vaccines.

Immunization Action Coalition
1573 Selby Avenue, Suite 234
St. Paul, MN 55104
Phone: 651-647-9009
Fax: 651-647-9131
E-mail: admin@immunize.org
Website: http://www.immunize.org/
The IAC creates and distributes educational materials for health professionals and the public that enhance the delivery of safe and effective immunization services. It also facilitates communication about the safety, efficacy, and use of vaccines. IAC administers two electronic mailing lists: IAC EXPRESS, which provides immunization news on a weekly basis to health professionals and others, and HEP EXPRESS, a monthly electronic newsletter devoted to news about hepatitis A, B, and C prevention and treatment. IAC has also created and currently maintains four websites:
http://www.immunize.org
http://www.vaccineinformation.org
http://www.izcoalitions.org
http://www.hepprograms.org
Everything published by IAC is reviewed by the Centers for Disease Control and Prevention for technical accuracy (unless it is an opinion piece written by a non-CDC author).

Institute for Vaccine Safety (IVS)
Johns Hopkins University
Bloomberg School of Public Health
615 North Wolfe Street, Room W5041
Baltimore, MD 21205

Website: http://www.vaccinesafety.edu
IVS provides independent assessment of vaccines and vaccine safety to help guide decision makers and educate physicians, the public, and the media about key issues surrounding the safety of vaccines.

National Network for Immunization Information (NNii)
301 University Boulevard, CH 2.218
Galveston, TX 77555-0351
Phone: 409-772-0199
Fax: 409-747-4995
E-mail: nnii@i4ph.org
Website: http://www.immunizationinfo.org/
NNii is an affiliation of the Infectious Diseases Society of America, the Pediatric Infectious Diseases Society, the American Academy of Pediatrics, the American Nurses Association, the American Academy of Family Physicians, the National Association of Pediatric Nurse Practitioners, the American College of Obstetricians and Gynecologists, and the University of Texas Medical Branch. It provides the public, health professionals, policy makers, and the media with up-to-date, scientifically valid information related to immunization.

Vaccine Education Center at the Children's Hospital of Philadelphia
Phone: 215-590-9990
Website: http://www.vaccine.chop.edu
Through its website, videos, informational sheets, and speakers programs, the Vaccine Education Center provides information on every vaccine. These informational resources also discuss how vaccines work, how they are made, who recommends vaccines, when they should be given, whether they are still necessary, and whether they are safe.

REFERENCES

Aral, S. O. & Holmes, K. K. (1991). Sexually transmitted diseases in the AIDS era. *Scientific American, 264*(2), 62–69.

Atkinson, W., Hamborsky, J. & Wolfe, S. (Eds.). (2004). *Epidemiology and prevention of vaccine-preventable diseases* (8th ed.). Washington, DC: Public Health Foundation. Retrieved in 2005 from http://www.cdc.gov/nip/publications/pink/default.htm.

Cates, W. (1991). Teenagers and sexual risk takings: The best of times and the worst of times. *Journal of Adolescent Health, 12*(2), 84–94.

Cates, W. & Hinman, A. (1991). Sexually transmitted diseases in the 1990s. *New England Journal of Medicine, 325*(19), 1368–1369.

Cavendish, R. (2003). A Lyme Disease case study and individualized healthcare plan. *Journal of School Nursing, 19*(2), 81–88.

Centers for Disease Control and Prevention. (1990). Herpes gladiatorum at a high school wrestling camp, Minnesota. *Morbidity and Mortality Weekly Report*, *39*(5), 69–71.

Centers for Disease Control and Prevention. (1992). Pertussis outbreaks: Massachusetts and Maryland. *Morbidity and Mortality Weekly Report, 42*(11), 197–200.

Centers for Disease Control and Prevention. (1996). Prevention of varicella: Recommendations of the Advisory Committee on Immunization Practices. *Morbidity and Mortality Weekly Report, 45*(RR-11), 1–36.

Centers for Disease Control and Prevention. (1997). Pertussis vaccination: Use of acellular pertussis vaccines among infants and young children: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *Morbidity and Mortality Weekly Report, 46*(RR-13), 1–25.

Centers for Disease Control and Prevention. (1998). Measles, mumps and rubella vaccine use and strategies for elimination of measles, rubella and congenital rubella syndrome and control of mumps: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *Morbidity and Mortality Weekly Report, 47*(RR-8), 1–57.

Centers for Disease Control and Prevention. (1999). Prevention of varicella: Update recommendations of the Advisory Committee on Immunization Practices (ACIP). *Morbidity and Mortality Weekly Report, 48*, 1–5.

Centers for Disease Control and Prevention. (2000). *Guidelines for the control of pertussis outbreaks*. Atlanta: Centers for Disease Control and Prevention.

Centers for Disease Control and Prevention. (2002). General recommendations of immunization: Advisory committee on immunization practices (ACIP). *Morbidity and Mortality Weekly Report, 51*(RR-2), 1–36.

Centers for Disease Control and Prevention. (2002). *Manual for the surveillance of vaccine-preventable diseases*. Atlanta: Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/nip/publications/surv-manual/default.htm.

Dobson, R. J. (2004). Why parents claim immunization exemptions, and the role of school nurses. *School Nurse News, 21*(5), 40–42. PMID: 15624584.

Domachowske, J. B. (2004). Making chicken pox prevention a priority. *School Nurse News, 21*(1), 26–27. PMID: 14753086.

Goodman, R. A., Thacker, S. B., Solomon, S. L., Osterholm, M. T. & Hughes, J. M. (1994). Diseases in competitive sports. *Journal of the American Medical Association, 271*(11), 862–867.

Heymann, D. (Ed.). (2004). *Control of communicable diseases in man* (18th ed.). Washington, DC: American Public Health Association.

Holmes, K. K., Sparling, P. F., Mardh, P. A., et al. (Eds.). (1998). *Sexually transmitted diseases* (3rd ed.). New York: McGraw-Hill Professional.

Hootman, J. (2002). Quality improvement projects related to pediculosis management. *Journal of School Nursing, 18*(2), 80–86.

Mandel, G. L., Douglas, R. G. & Bennett, J. E. (Eds.). (2000). *Principles and practice of infectious diseases* (5th ed.). New York: Churchill Livingston.

Marchant, C., Laughlin, A. & Lett, S. (1994). Pertussis in Massachusetts, 1981–1991: Incidence, serologic diagnosis, and vaccine effectiveness. *Journal of Infectious Diseases*, *169*, 1267–1305.

Martin, M. E. & Didion, J. (2003). The smallpox threat: The school nurse's role. *Journal of School Nursing, 19*(5), 260–264.

McEllistrem, M. C., Mendelsohn, A. B., Pass, M., Elliott, J. A., Whitney, C. G., Albanese, B. A., et al. (2001). Invasive meningococcal disease in adolescents and young adults. *Journal of the American Medical Association, 286*, 694–699.

Morton, J. L. & Schultz, A. A. (2004). Healthy hands: Use of alcohol gel as an adjunct to hand washing in elementary school children. *Journal of School Nursing, 20*(3), 161–167.

Pickering, L. K. (Ed.). (2003). *2003 Red book: Report of the Committee on Infectious Diseases* (26th ed.). Elk Grove Village, IL: American Academy of Pediatrics.

Pollack, R. J., Kiszewski, A. & Spielman, A. (2000). Overdiagnosis and consequent mismanagement of head louse infestations in North America. *Pediatric Infectious Disease Journal, 19*, 689–693. Retrieved in 2005 from http://www.pidj.com.

Plotkin, S. A. & Orenstein, W. A. (Eds.). (2004). *Vaccines* (4th ed.). Philadelphia: W. B. Saunders Company.

Salmon, D. A., Moulton, L. H., Omer, S. B., Chace, L. M., Klassen, A., Talebian, P. & Halsey, N. A. (2004). Knowledge, attitudes, and beliefs of school nurses and personnel and associations with nonmedical immunization exemptions. *Pediatrics*, *113*(6), e552-9. PMID: 15173536.

Schoessler, S. Z. (2004). Treating and managing head lice: The school nurse perspective. *American Journal of Managed Care, 10*(9 Supp.), S273-6. PMID: 15515632.

Sprauer, S. L., Cochi, E. R., Zell, R., Sutter, R. W., Mullen, J. R., Englander, S. J. & Patriarca, P. A. (1992). Prevention of secondary transmission of pertussis in households with early use of erythromycin. *American Journal of Diseases of Children, 146*(2), 177B181.

White, C. G., Shinder, F. S., Shinder, A. L. & Dyer, D. L. (2001). Reduction of illness absenteeism in elementary schools using an alcohol-free instant hand sanitizer. *Journal of School Nursing, 17*(5), 258–265.

Yih, W. K., Lett, S. M., des Vignes, F. N., Garrison, K., Sipe, P. & Marchant C. (2000). The increasing incidence of pertussis in Massachusetts adolescents and adults, 1989–1998. *Journal of Infectious Diseases, 182*, 1409–1416.

Note: PMID number indicates an article has been indexed by PubMed for Medline.

EXHIBITS

Exhibit 8-1 School Immunization Law

Exhibit 8-2 Immunization Exemptions and Vaccine-Preventable Disease Exclusion Guidelines in School Settings

Exhibit 8-3 Massachusetts Immunization Program Recommended Immunizations for Teachers and Staff

Exhibit 8-4 Acceptable Evidence of Immunity for the Control of Select Vaccine-Preventable Diseases in School Settings

Exhibit 8-5 Investigation of Vaccine-Preventable Diseases

Exhibit 8-6 Sample Letter to Parent/Guardian about Diarrheal Diseases

Exhibit 8-7 Sample Letter to Parent/Guardian about Pinworms

Exhibit 8-8 Sample Letter to Parent/Guardian of Close Contacts of Hepatitis A

Exhibit 8-9 Sample Letter to Parent/Guardian about Hepatitis A

Exhibit 8-10 Sample Letter to Parent/Guardian about Hand, Foot and Mouth Disease

Exhibit 8-11 Sample Letter to Parent/Guardian about Strep Throat

Exhibit 8-12 Sample Letter to Parent/Guardian about Fifth Disease

Exhibit 8-13 Sample Letter to Parent/Guardian of Close Contacts about Invasive Meningoccocal Disease

Exhibit 8-14 Sample General Letter to Parent/Guardian about Invasive Meningococcal Disease

Exhibit 8-15 Sample Letter to Parent/Guardian about Meningitis of Unknown Etiology

Exhibit 8-16 Sample Letter to Parent/Guardian about Viral Meningitis

Exhibit 8-17 Sample Letter to Parent/Guardian of Close Contacts about Tuberculosis

Exhibit 8-18 Sample Letter to Parent/Guardian about Tuberculosis

Exhibit 8-19 Sample Letter to Parent/Guardian about Impetigo

Exhibit 8-20 Sample Letter to Parent/Guardian about Ringworm

Exhibit 8-21 Sample Letter to Parent/Guardian about Conjunctivitis

Exhibit 8-22 Sample Letter to Parent/Guardian about Scabies

Exhibit 8-23 Sample Letter to Parent/Guardian about Head Lice

Exhibit 8-1 School Immunization Law

Massachusetts General Laws, Chapter 76, § 15

"No child shall, except as hereinafter provided, be admitted to school except upon presentation of a physician's certificate that the child has been successfully immunized against diphtheria, pertussis, tetanus, measles and poliomyelitis and such other communicable diseases as may be specified from time to time by the Department of Public Health.

A child shall be admitted to school upon certification by a physician that he has personally examined such child and that in his opinion the physical condition of the child is such that his health would be endangered by such vaccination or by any of such immunizations. Such certification shall be submitted at the beginning of each school year to the physician in charge of the school health program. If the physician in charge of the school health program does not agree with the opinion of the child's physician, the matter shall be referred to the Department of Public Health, whose decision will be final.

In the absence of an emergency or epidemic of disease declared by the Department of Public Health, no child whose parent or guardian states in writing that vaccination or immunization conflicts with his sincere religious beliefs shall be required to present said physician's certificate in order to be admitted to school."

Addendum:
Additional requirements for successful immunization against mumps, rubella, hepatitis B and varicella for school and preschool entry were added as specified by regulation (105.CMR 220.000, 1983, 1990, 1994, 1998).

Immunization Program Interpretation of Law

1. You are required to keep an immunization record on file for each student enrolled in the school or system.
2. The record must contain the complete date (preferably month, day, and year, but at a minimum, the month and year) of each immunization, and be signed by the health care provider.
3. Immunization histories must be up-to-date for each child according to Massachusetts's immunization guidelines.
4. A history of serologic proof of immunity will be accepted in lieu of immunization for measles, mumps, rubella, hepatitis B, and varicella. In the case of varicella, a physician-certificate of parental history or physician diagnosis is also accepted.
5. No unimmunized student shall be admitted to, or be allowed to remain in school unless they can satisfy these requirements:
    a. a medical exemption is allowed if a health care provider submits documentation to school that an immunization is medically contraindicated; or
    b. a religious exemption is allowed if a parent or guardian submits a signed statement to school stating that immunizations are contrary to their sincere religious beliefs. This statement only needs to be submitted once.
6. The only exception is for unimmunized or partially immunized homeless children, who cannot be excluded from school per the McKinney-Vento Homeless Assistance Act of 2001.

Exhibit 8-2

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Immunization Exemptions and Vaccine-Preventable Disease Exclusion Guidelines in School Settings

Definition of Allowable Exemptions

There are two situations in which children who are not appropriately immunized may be admitted to school:

1) a **medical exemption** is allowed if a physician submits documentation that an immunization is medically contraindicated; and
2) a **religious exemption** is allowed if a parent or guardian submits a written statement that immunizations conflict with their sincere religious beliefs.

Philosophical exemptions are not allowed by law in Massachusetts, even if signed by a physician. Only medical and religious exemptions are acceptable. These exemptions must be kept in the students' files at school (105 CMR 220.000 and M.G.L. c.76, s. 15, 15C, and 15D).

Policies for Exclusion at School Entry

While the laws and regulations state that **unimmunized** children who do not meet criteria for medical or religious exemption "shall **not** be admitted to school," policies around enforcement of exclusion for unimmunized or partially immunized children are developed by individual schools/school districts.

The only exception for exclusion of unimmunized or partially immunized children is in the case of homeless children, whereby they cannot be denied entry to school if they do not have their immunization records. The federal McKinney-Vento Homeless Assistance Act states that if a homeless student does not have proper documentation of immunizations or any medical records, the Homeless Education Liaison at your school must immediately assist in obtaining them, and the student must be enrolled and permitted to attend school in the interim (as cited in the McKinney-Vento Homeless Assistance Act of 2001).

Exclusion During Disease Outbreaks

In situations when one or more cases of disease are present in a school, all susceptibles, **including those with medical or religious exemptions**, are subject to exclusion as described in the Reportable Diseases and Isolation and Quarantine Requirements (105 CMR 300.000).

The reporting and control of diseases identified as posing a risk to the public health is prescribed by state regulation and law. The Isolation and Quarantine Requirements establish isolation and quarantine requirements for cases of certain diseases and their contacts in certain high-risk situations, including the school setting. The following table outlines several of the more common childhood vaccine-preventable diseases identified in the requirements that may occur in schools and the corresponding exclusion requirements.

Guidelines for Select Vaccine-Preventable Diseases in a School Setting

Case	Symptomatic Contact	Asymptomatic Contact
Measles		
Exclude student/staff through 4 days after onset of rash (Count the day of rash onset as day zero.)	Same as for a case. Obtain a blood sample for confirmation, drawn ≥ 3 days after rash onset. (Count the day of rash onset as day zero.)	If one case: exclude susceptibles[1] from work or classes from the 5th through the 21st day after their exposure. If multiple cases or continuous exposure: exclude susceptibles[1] through the 21st day after rash onset in the last case. These restrictions remain even if the contact received immune globulin (IG).
Mumps		
Exclude student/staff through 9 days after onset of gland swelling. (Count the initial day of gland swelling as day zero.)	Same as for a case. Obtain a blood sample for confirmation, drawn ≥ 3 days after onset of parotitis. (Count the day of gland swelling onset as day zero.)	If one case: exclude susceptibles[2] from work or classes from the 12th through the 26th day after their exposure. If multiple cases: exclude susceptibles 2 through 26 days after the onset of the last case at the school or workplace.
Rubella		
Exclude student/staff through 7 days after rash onset. (Count the day of rash onset as day zero.)	Same as for a case. Obtain a blood sample for confirmation, drawn ≥ 3 days after rash onset. (Count the day of rash onset as day zero.)	If one case: exclude susceptibles[3] from work or classes from the 7th through the 21st day after last exposure. If multiple cases: exclude susceptibles[3] until 21 days after the onset of the last case at the school or workplace.
Pertussis		
Exclude student/staff until 21 days from onset of cough or 5 days after initiation of appropriate antibiotic therapy.	Same as for a case. Obtain a culture if it is < 2 weeks after the cough onset. Obtain an SLI serology if the patient is ≥ 11 years old and it is 2-8 weeks after the cough onset. In addition to antibiotic prophylaxis, contacts that are < 7 years of age who are under immunized should have immunization initiated or continued depending on their past history.	If a susceptible[4] is exposed within the last 21 days, s/he should receive antibiotic prophylaxis but no exclusion is generally required in the school setting. In certain situations deemed to be high-risk, DPH may require exclusion of asymptomatic contacts not receiving antibiotic prophylaxis and/or other contacts, and/or may extend the exclusion period beyond 21 days up to a maximum of 42 days. In addition to antibiotic prophylaxis, contacts that are < 7 years of age who are under immunized should have immunization initiated or continued depending on their past history.

Case	Symptomatic Contact	Asymptomatic Contact
Varicella		
If vesicles are present, exclude until all lesions have dried and crusted over, or until no new lesions appear, usually by the 5th day after rash onset. (Count the day of rash onset as day zero.) If no vesicles are present, exclude until the lesions have faded (i.e. the skin lesions are in the process of resolving; lesions do not need to be completely resolved) or no new lesions appear within a 24-hour period, whichever is later.	Same as for a case.	Susceptibles[5] shall be excluded from work or classes from the 10th through the 21st days after their exposure to the case while infectious with rash (not including the prodrome). If the exposure was continuous, susceptibles shall be excluded from the 10th through the 21st days after the case's rash onset. In high-risk settings, the MDPH may impose more rigorous exclusion criteria. Anyone receiving varicella zoster immune globulin (VZIG) or intravenous immune globulin (IVIG) shall extend their exclusion to 28 days post exposure.

Definition of Susceptibles

[1] **Measles** – Susceptibles include all those born in or after 1957 without documentation of at least two doses of measles-containing vaccine or serologic evidence of immunity. In an outbreak situation, all those with 0 or 1 dose may avoid exclusion if they promptly receive another dose. Those born before 1957 are considered immune.

[2] **Mumps** – Susceptibles include all those born in or after 1957 without written documentation of one dose of mumps-containing vaccine or serologic evidence of immunity. In an outbreak situation, all those with no doses may avoid exclusion if they promptly receive a *first* dose. Those born before 1957 are considered immune.

[3] **Rubella** – Susceptibles include all those born in or after 1957 without written documentation of one dose of rubella-containing vaccine or serologic evidence of immunity. In an outbreak situation, all those with no doses may avoid exclusion if they promptly receive a *first* dose. Those born before 1957 are considered immune.

[4] **Pertussis** – Susceptibles include all those exposed, regardless of their age, immunization status, or past history of disease.

[5] **Varicella** – Susceptibles include all those, regardless of age, without (1) written documentation of one or two doses of varicella vaccine (number of doses is based on age: < 13 years, one dose; ≥ 13 years, two doses), (2) a physician-certified reliable history of chickenpox disease, or (3) serologic evidence of immunity.

Remember, these are guidelines for school settings only. More rigorous criteria for immunity and exclusion and other control measures are needed in health care and other high-risk settings, and are outlined in other DPH documents.

There are three additional references that may be helpful to school health personnel: (1) the *Guide to Surveillance and Reporting (2001)* can be obtained by calling the Division of Epidemiology and Immunization at the Massachusetts Department of Public Health (DPH) at 617-983-6800 or on the DPH website at http://www.mass.gov/dph; (2) the *Comprehensive School Health Manual* can be obtained by writing to the State House Bookstore, Room 116, Boston, MA 02133 or calling 617-727-2834; and (3) the *Health and Safety in Child Care Manual* can be obtained by writing to the State House Bookstore, Room 116, Boston, MA 02133, or by calling 617-727-2834.

July 2006

Exhibit 8-3

Massachusetts Department of Public Health

Massachusetts Immunization Program
Recommended Immunizations for Teachers and Staff[1]

Vaccine	Persons Born Before 1957	Persons Born In or After 1957
MMR [2] (Measles, Mumps, Rubella)	1 dose recommended for women of childbearing age; and for all adults not born in the U.S.	2 doses
Varicella[3]	2 doses	2 doses
Hepatitis B[4]	3 doses	3 doses
Td/Tdap[5] (Tetanus, diphtheria, pertussis)	1 Td booster every 10 years, Substitute Tdap for 1 dose of Td	Booster every 10 years
Annual Influenza	Indicated for caregivers of children birth – 59 months of age; anyone with medical conditions that put them at risk for complications from influenza; pregnant women; and everyone ≥ 50 years old.	

[1] Including full- and part-time teachers, student teachers, and staff.
[2] Proof of immunity to measles, mumps, and rubella is required for staff of licensed group and family day care centers. MMR vaccine is recommended for teachers and staff in school settings.
[3] Varicella vaccine is recommended for those who do not have documentation of age-appropriate immunization, a reliable history of varicella disease (physician diagnosis or personal recall) or serologic evidence of immunity.
[4] Federal OSHA regulations require some employers to offer hepatitis B vaccine to childcare staff whose responsibilities include first aid. Serologic evidence of immunity may be substituted for immunization.
[5] All adults should receive a single dose of Tdap, especially those who have close contact with infants<12 months of age (e.g., childcare providers). An interval of >2 years since the last dose of tetanus toxoid-containing vaccine is suggested; a shorter interval can be used.

Exclusion of Those Susceptible to Vaccine-Preventable Diseases in School Settings

Remember that if a case of any vaccine-preventable disease occurs, all susceptible students and staff must be excluded as described in the reportable disease and Isolation and Quarantine Requirements (105 CMR 300.00). In February 2003, the regulations were updated to include exclusion of susceptibles exposed to varicella.

These guidelines are based on the recommendation of the Advisory Committee in Immunization Practices (ACIP) and the National Coalition for Adult Immunization. For specific ACIP recommendations refer to the full statements, which are published in the Morbidity and Mortality Weekly Report (MMWR). To access individual statements, call the Massachusetts Immunization Program at 617-983-6800, or visit CDC's website: http://www.cdc.gov/nip/publications/ACIP-list.htm.

August 2006

Exhibit 8-4

Acceptable Evidence of Immunity for the Control of Select Vaccine-Preventable Diseases in School Settings

Disease	Acceptable Evidence of Immunity
Measles	Born in the U.S. before 1957 **OR** Documentation of vaccination with 2 doses of live measles-containing vaccine given at least 1 month apart, beginning at or after 12 months of age[1] **OR** Laboratory evidence of immunity *A history of measles, or even a physician diagnosis of measles, without laboratory confirmation is **not** acceptable.*
Mumps[2]	Born in the U.S. before 1957 **OR** Documentation of vaccination with one dose of mumps vaccine given at or after 12 months of age ***OR*** Serologic proof of immunity *A history of mumps, or even a physician diagnosis of mumps, without laboratory confirmation is **not** acceptable.*
Rubella	Born in the U.S. before 1957 ***OR*** Documentation of vaccination with 1 dose of rubella vaccine given at or after 12 months of age **OR** Serologic proof of immunity *A history of rubella, or even a physician diagnosis of rubella, without laboratory confirmation is **not** acceptable.*
Varicella[3]	A reliable history of chickenpox or shingles[4] • For students, this must be a physician-certified report of past illness by parental recall or physician-diagnosed disease • For staff, self-report of past disease is acceptable ***OR*** Documentation of vaccination with varicella vaccine (1 dose if given at 1 to 12 years of age <u>or</u> 2 doses if given at least 1 month apart if given at 13 years of age or older ***OR*** Serologic proof of immunity

[1] If there is a measles exposure in a school setting, individuals who have had only 1 dose of a measles-containing vaccine (including staff born outside the U.S. before 1957) will need a 2nd dose of measles-containing vaccine within 72 hours after exposure in order to be considered immune. In some situations, individuals receiving their 1st dose within 72 hours after exposure will also be considered immune.
[2] If there is a mumps exposure in a school setting, individuals receiving their 1st dose will be considered immune.
[3] If there is a varicella exposure in a school setting, individuals without evidence of immunity as defined in this table will need to be vaccinated within 3 days (and possibly up to 5 days) after exposure in order to be considered immune.
[4] A reliable history of chickenpox or shingles is acceptable because the rash is distinctive and subclinical cases are rare.

Exhibit 8-5

Investigation of Vaccine-Preventable Diseases

Detailed guidance on all the steps necessary for the control of vaccine-preventable diseases can be found in the Massachusetts Department of Public Health (DPH) publication the *Guide to Surveillance and Reporting.* This manual is available on the DPH website http://www.mass.gov/dph.

An immunization epidemiologist at the Division of Epidemiology and Immunization of the Massachusetts Department of Public Health (DPH) can assist you with the steps in the investigation and control of a case (or suspected case) of a vaccine-preventable disease outlined below.

1. Report cases and suspect cases to appropriate health authorities:
   - Providers report to the local board of health in the town in which they practice. In addition, providers may also contact an immunization epidemiologist at the Division of Epidemiology and Immunization at DPH.
   - Local boards of health report to the Division of Epidemiology and Immunization at DPH.
2. Verify the diagnosis:
   - Obtain a description of the illness from patient or family member of patient and health care provider.
   - Determine if it meets the clinical case definition. If it does, this may increase your level of suspicion.
   - Obtain the appropriate laboratory confirmation. In most cases, samples should be sent to the Massachusetts State Laboratory Institute (SLI). If tests have already been performed at a laboratory other than the Massachusetts SLI, arrange for samples to be forwarded to the Massachusetts SLI for confirmation.
     - For pertussis, obtain the appropriate laboratory test (culture/PCR/serology) based on the case's age and cough duration. Remember, serology is only acceptable and interpretable when performed at the Massachusetts SLI.
     - For measles, mumps, and rubella, obtain blood for serology and a specimen for viral isolation to be sent to the Massachusetts SLI. For the other vaccine-preventable diseases, obtain the appropriate specimens for culture, PCR or other diagnostic test and submit to the Massachusetts SLI.
3. Obtain information about the case's country of origin and length of residence in the U.S:
   - This information is helpful because she/he may have come from a country where routine immunization was not available or some vaccine-preventable diseases are not common. This might make she/he more likely to be susceptible than a U.S.-born counterpart.
4. Obtain the case's immunization history from the health record:
   - Verify the immunization history with the health care provider.
5. Identify possible sources of exposure:
   - Determine if there are any other students at the school, family members, or other close contacts with similar symptoms.
   - Determine if there was travel to other areas (particularly out-of-state or out-of-country) one incubation period prior to onset of symptoms.
   - Inquire if the case had visitors from other areas one incubation period prior to onset of symptoms.
6. Prevent spread:
   - Inform boards of health, physicians, medical settings, schools, and child care centers of the exposure
   - Isolate case during infectious period.
   - Follow DPH guidelines on hand hygiene, respiratory hygiene/cough control, and standard precautions (as appropriate for the particular vaccine-preventable disease).
   - Identify everyone who was in contact with case during the infectious period. Think in terms of 'zones of exposure', which differ for each disease. 'Zones of exposure' depend on the: (1) mode of transmission; (2) immune status of the infectious case (immunosupressed individuals are generally more infectious); and (3) immune status of those exposed (immunosupressed individuals are at higher risk for complications).

     Keeping these criteria in mind, consider the following groups:

  - household members
  - school/child care students and staff (consider interaction patterns, staffing patterns, and possibilities of shared air space, face-to-face contact and saliva exchange)
  - medical facilities where the patient was seen
  - workplace of case (especially child cares, schools, and medical settings)
  - religious/social groups
  - sports teams, other extracurricular groups
  - bus mates, carpool mates
  - close friends
  - persons potentially exposed at social events or travel sites
- Identify all susceptibles among exposed students and staff in the 'zones of exposure'. Remember, the 'zones of exposure' will differ for each disease.
- Identify high risk susceptibles among exposed students and staff in the 'zones of exposure' and refer them to their health care provider.
- Exclude all exposed susceptibles who cannot be immunized (or take antibiotics if indicated) during the appropriate time period. Remember, the exclusion period will differ for each disease.
- Immunize (age-appropriately) or prophylax all susceptibles for whom there are no contraindications.
- Notify students, staff, parents/guardians and others.
- Maintain surveillance of contacts for two incubation periods. Remember, incubation periods will differ for each disease.

Detailed guidance is available on all the steps necessary for the control of vaccine-preventable diseases. If you have a case or suspect case of a vaccine-preventable disease, please contact the Division of Epidemiology and Immunization at 617-983-6800 or at the toll-free number 888-658-2850 and consult with an immunization epidemiologist. The epidemiologist can provide you with more detailed guidance on developing the appropriate control measures and provide you with sample letters, advisories and *Public Health Fact Sheets* (also available at the DPH website). If needed, the epidemiologist can also send you the pertinent chapter from the *Guide to Surveillance and Reporting.*

Exhibit 8-6

Sample Letter to Parent/Guardian about Diarrheal Diseases

Dear parent or guardian:
___ A student at our school has a diarrheal disease.
___ Your child may have a diarrheal disease.

Please take the following precautions:

1. Watch your child and members of your family to see if they develop diarrhea, stomach cramps, vomiting, gas, and/or nausea.
2. If your child develops vomiting, severe diarrhea, diarrhea with fever, or diarrhea with blood or mucus, *do not send your child to school*.
3. If your child develops mild diarrhea, please call us to discuss whether attendance is recommended.
4. In either case, we may ask your health care provider to test for bacteria and parasites in the stool. We may ask you to get tests for your child and for other family members who develop diarrhea.
5. Be sure to remind your health care provider that there are other students with diarrhea at your child's school. If your child's test is positive, keep your child home until any serious diarrhea or illness is over.
6. Keep us informed about how your child is doing and about any test results or treatment.

Information about diarrheal diseases:

What are they? Diarrheal diseases are caused by organisms (bacteria, parasites, or viruses) that affect the intestines and are passed out of the body in the stool and in the case of some viruses, in vomit. Anyone can get diarrheal diseases, and they can be caught repeatedly. People with these organisms in their stool may not actually have diarrhea or feel sick. Laboratory tests are the only way to tell if a particular stool contains organisms.

Six diarrheal diseases commonly found in children and young adults are listed here, along with their symptoms. The disease that may be causing illness at our school has been circled. If no disease has been circled, the specific cause of the diarrheal disease is not yet known.

***Norovirus* (virus)**
Nausea, vomiting, diarrhea, and abdominal cramps

***Giardia* (parasite)**
Mild to severe diarrhea, stomach cramping, bloating, pale and foul-smelling stools, weight loss, and fatigue

***Shigella* (bacteria)**
Diarrhea (sometimes bloody), fever, nausea, vomiting, stomach cramps, and dehydration

***Salmonella* (bacteria)**
Diarrhea accompanied by stomach cramps, abdominal pain, and fever

***Campylobacter* (bacteria)**
Diarrhea (sometimes bloody) with fever, abdominal pain, tiredness, nausea, and vomiting

***E. coli* O157:H7 (bacteria)**
Severe abdominal pain, diarrhea (frequently bloody)

How do you catch diarrheal diseases? When people do not wash their hands well after going to the bathroom, changing diapers, helping a child go to the bathroom, or after vomiting or helping a child who has vomited, these microscopic organisms stay on their hands and on the children's hands. The organisms can then spread to food or drink or to objects and, eventually, to other people's hands and mouths. The organisms are then swallowed by the other people, multiply in their intestines, and cause an infection. Obviously, diarrheal diseases can spread easily among young children who normally get their hands into everything and may not wash their hands well.

How do you know if you have a diarrheal disease? Some of these diseases can be diagnosed by examining the stool under a microscope, some by growing the organisms in the laboratory, others by special chemical tests. Since the organisms may be passed in the stools off and on, stool samples taken on several days may need to be examined.

How can you stop the spread of diarrheal diseases in your household?

1. **Be sure everyone in the family thoroughly washes their hands after using the bathroom, helping a baby or child with diapers or toileting, and before preparing or eating food. In addition, hands and the environment should be thoroughly washed after vomiting or helping someone who has vomited.** Babies and children need to have their hands washed too at these times.
2. If someone in your family develops diarrhea, ask your health care provider to consider doing a test for organisms in the stool. This is especially important for family or household members who handle or prepare food.
3. Your health care provider will decide about treatment for your child and/or other family members who are vomiting or have diarrhea.

Exhibit 8-7

Sample Letter to Parent/Guardian about Pinworms

Dear parent or guardian:
_____ A student in our school has pinworms.
_____ Your child may have pinworms.

Please take these precautions:

1. Watch your child and family members for signs of pinworms.
2. If you think your child may have pinworms, call your health care provider.
3. Tell us if your child has pinworms and is being treated.

Information about pinworms:

What are they? Pinworms are tiny worms that live in the lower intestine and only infect people. The female worms (resembling short, white threads less than 2 inches long) come out through the anus at night and lay their eggs on the skin around the opening. This can cause intense itching. It is not a dangerous condition, just a very irritating one.

How do you catch pinworms? Pinworms are most often found in young children, and members of an infected child's household can be infected and reinfect a child. When children scratch their itchy bottoms, microscopic pinworm eggs can get on their fingers and under their fingernails. If they then touch someone else's mouth or food, the eggs may be swallowed and hatch into worms in that person's bowels. Pinworms can also be spread through contact with clothes or bedding that have eggs on them.

How should you check for pinworms? Your health care provider will ask you to use a flashlight at night to look for the worms, or to place sticky tape on your child's bottom first thing in the morning and then place it on a glass slide so he or she can look at the tape under a microscope.

How is pinworm infection treated? If pinworms eggs are found, your health care provider will give your child a medication for treatment of this infection. Often the health care provider will treat the whole family, especially if re-infections have occurred. Treatment is usually repeated 2 weeks later.

How do you stop the spread of pinworms?

1. Hand washing, especially before eating or preparing food, and good general cleanliness are the most important ways to stop the spread of pinworms.
2. Keep fingernails short, avoid nail biting and scratching of the anal area.
3. Change the bedding, nightclothes and underwear of the infected person frequently, preferably after bathing or showering, for several days after treatment. Launder all washable bedding and clothing in hot water and dry in a hot dryer.

When can your child return? Children diagnosed with pinworms can return to school as soon as treatment has begun.

Exhibit 8-8

Sample Letter to Parent/Guardian of Close Contacts of Hepatitis A

Dear parent or guardian:

A student or staff member at our school has been diagnosed with a viral infection called hepatitis A and we believe that **your child has had close contact with the ill person.**

Please take these precautions:

1. Tell your health care provider that your child was exposed to someone at his or her school who has come down with hepatitis A. Bring this letter to discuss the fact that your child is being considered to have had close contact with the ill person (e.g. shared food, drink or eating utensils, or other activities).
2. Explain that as a close contact of the ill person, our health consultant recommends that your child be given a shot of immune globulin (IG) by _____/_____/_____. IG can help prevent your child from getting hepatitis A or can help lessen the symptoms if your child does get it. IG may be available free of charge to your physician from your state or local health department.
3. Since immune globulin is not 100% effective, watch your child carefully in the next few weeks for symptoms and notify your doctor and us if your child becomes ill.
4. If anyone in your household develops signs of hepatitis A, ask your health care provider to do a blood test. Tell us if it is positive.

Information about hepatitis A:

Hepatitis A is an infection of the liver caused by a virus. It can cause tiredness, fever, lack of appetite, nausea, and jaundice (yellowing of the skin and whites of the eyes, with darkening of the urine). The illness usually lasts 1–2 weeks. Young children do not usually become jaundiced, however, and may have only a flu-like illness, or no symptoms.

How do you get it? The virus is passed out of the body in the stool. The virus is microscopic, so you cannot see it. A person is most contagious during the 2 weeks before the illness begins, when there are the most virus particles in the stool. Most people stop being contagious about 1 week after their symptoms start. If people do not wash their hands well after toileting a child or themselves, or do not wash the child's hands, the virus can be spread to other people through food, drink, or direct contact. The virus can then be swallowed by another person, multiply in the intestines and liver, and cause illness 15–50 days later. Immune globulin can help prevent illness if given within two weeks of exposure to the virus.

How is it diagnosed and treated? Hepatitis A is diagnosed by a blood test. There is no specific treatment for hepatitis A and most people do not need any.

How do you stop the spread of hepatitis A?

1. Since the virus that causes this illness is found in the stool, be sure all members of your household thoroughly wash their hands after going to the toilet, helping a child go to the toilet, or changing a diaper. They must wash the children's hands, too. ***These are the most important things to do!*** Hands should also be washed before touching food, eating, or feeding. Encourage your children not to share food or eating or drinking utensils with their friends at school.
2. There is also a vaccine that can prevent hepatitis A but is only recommended for certain people. You can talk to your health care provider for more information about the vaccine.

Exhibit 8-9

Sample Letter to Parent/Guardian about Hepatitis A

Dear parent or guardian:

A student or staff member at our school has been diagnosed with a viral infection called hepatitis A. We do not believe that your child has been a close contact of the ill person.

Please take these precautions:

1. In the next few weeks watch your child and family members for signs of hepatitis A.
2. If you think your child or anyone else in the household may have hepatitis A, call your health care provider.
3. Tell us if your child or anyone else in the household is diagnosed with hepatitis A.

Information about hepatitis A:

Hepatitis A is an infection of the liver caused by a virus. It can cause tiredness, fever, lack of appetite, nausea, and jaundice (yellowing of the skin and whites of the eyes, with darkening of the urine). The illness usually lasts 1 to 2 weeks. Young children do not usually become jaundiced, however, and may have only a flu-like illness, or no symptoms.

How do you get it? The virus is passed out of the body in the stool. The virus is microscopic, so you cannot see it. A person is most contagious during the 2 weeks before the illness begins, when there are the most virus particles in the stool. Most people stop being contagious about 1 week after their symptoms start. If people do not wash their hands well after toileting a child or themselves or do not wash the child's hands, the virus can be spread to other people through food, drink, or other things. The virus can then be swallowed by another person, multiply in the intestines and liver, and cause illness 15–50 days later.

How is it diagnosed and treated? Hepatitis A is diagnosed by a blood test. There is no specific treatment for hepatitis A and most people do not need any. Immune globulin can help prevent illness if given within two weeks of exposure to the virus.

How do you stop the spread of hepatitis A?

1. Since the virus that causes this illness is found in the stool, be sure all members of your household thoroughly wash their hands after going to the toilet, helping a child go to the toilet, or changing a diaper. They must wash the children's hands, too. ***These are the most important things to do!*** Hands should also be washed before touching food, eating, or feeding. Encourage your children not to share food or eating or drinking utensils with their friends at school.
2. Immune globulin can help prevent illness if given within 2 weeks of exposure but is only recommended for those who are close contacts of people who have hepatitis A.
3. There is also a vaccine that can prevent hepatitis A but is only recommended for certain people. You can talk to your health care provider for more information about the vaccine.

Exhibit 8-10

Sample Letter to Parent/Guardian about Hand, Foot, and Mouth Disease

Dear parent or guardian:
____ A student in our school has *hand, foot, and mouth disease.*
____ Your child may have *hand, foot, and mouth disease.*

Please take these precautions:
1. Watch your child and family members for signs of *hand, foot, and mouth disease.*
2. If you think your child may have *hand, foot, and mouth disease*, call your health care provider for instructions.
3. Tell us if your child has *hand, foot, and mouth disease*.

Information about hand, foot, and mouth disease:
What is it? *Hand, foot, and mouth disease* is a common illness of infants and young children, most commonly caused by a virus called coxsackievirus. Symptoms include mild fever, poor appetite, and a sore throat. One or 2 days after the fever begins, tiny blisters develop in the mouth. A skin rash also develops over 1–2 days with flat or raised red spots, some with blisters. The rash is not itchy and is usually found on the palms of the hands and soles of the feet. Illness is usually mild and most people get better in 7–10 days.

How do you catch hand, foot, and mouth disease? It is spread when the virus from stool or saliva gets on hands or objects and then onto other people's hands and into mouths. A person is most contagious during the first week of the illness but they still can have the virus for many weeks, especially in their stool. People usually get sick 3 to 7 days after being exposed to the virus.

How is hand, foot, and mouth disease diagnosed? Health care providers can tell if people have *hand, foot, and mouth disease* by their symptoms. A laboratory test can be done on the throat or stool to know for sure but since the testing often takes 2–4 weeks to obtain a final answer, these tests are usually not ordered.

How is hand, foot, and mouth disease treated? There is no specific treatment for *hand, foot, and mouth disease* but your health care provider may suggest treatment to relieve some symptoms.

How do you stop the spread of hand, foot, and mouth disease?
1. Always wash your hands with soap and running water after using the toilet, changing a diaper, helping a child use the toilet, and before touching food or eating. Also wash your hands after wiping or blowing noses or after touching nose, throat, or eye secretions. Babies and children need their hands washed at these times, too.
2. Encourage your child not to share food, drinks, or utensils at school.

When can your child return? A child with *hand, foot, and mouth disease* can return to school as soon as he/she feels well enough to attend.

Exhibit 8-11

Sample Letter to Parent/Guardian about Strep Throat

Dear parent or guardian:

_____ A student at our school has strep throat.
_____ Your child may have strep throat.

Please take these precautions:

1. Watch your child for signs of sore throat and other signs of strep (headache, fever, stomachache, rash, swollen and tender neck glands).
2. If your child develops a sore throat and any of these other signs, please see your health care provider, tell her or him that another child in the program has strep, and ask to have your child tested for strep throat.
3. Tell us if your child has been diagnosed with strep infection.

Information about strep throat:

What is it? *Strep throat* is an infection caused by streptococcus bacteria. People with strep throat usually have a very red, painful throat, often with fever, and sometimes with headache, abdominal pain, and nausea and/or vomiting. Most sore throats, however, are caused by viruses and are not treated with antibiotics.

How do you get strep throat? *Strep throat* can affect persons of any age but is most common in children. The bacterium is spread person-to-person through secretions and is easily passed in households. It takes 2–5 days to become ill. People with strep throat are generally most infectious when they are sick. They continue to be infectious until they have received treatment for a day or so.

How is it diagnosed? A laboratory test, such as a throat culture or a rapid test is needed to confirm a strep infection.

How is it treated? Strep infections are usually treated with an oral antibiotic, starting either with characteristic symptoms or after a strep test is positive. Sometimes an injection of antibiotic may also be used to treat strep.

Why is it important that your child receive treatment? There are two main reasons:

1. **Treatment reduces spread.** If not treated or not treated long enough, your child may continue to spread the infection to other members of your family or to other children.
2. **Treatment with antibiotics can usually prevent rheumatic fever or other rare, but possibly dangerous complications.** Rarely, some children with strep throat can develop complications like blood infections or rheumatic fever, which can damage the heart or joints.

When can your child come back to the program? Children with strep infections may return to school after taking medicine for at least 24 hours and their fever is gone.

How do you stop the spread of strep throat?

1. Thoroughly wash your hands and your child's hands after wiping noses and before eating or preparing food.
2. Wash dishes carefully in hot, soapy water or in a dishwasher.
3. Do not allow the sharing of food or allow children to share cups, spoons, or toys that are put in the mouth.

Exhibit 8-12

Sample Letter to Parent/Guardian about Fifth Disease

Dear parent or guardian:

_____ A student in our school has *fifth disease*.

_____ Your child may have *fifth disease*.

Please take these precautions:

1. Watch your child and family members for signs of *fifth disease*.
2. If you think your child may have *fifth disease*, call your health care provider.
3. Tell us if your child has been diagnosed with *fifth disease*.
4. If you are pregnant tell your health care provider that you may have been exposed to *fifth disease*.

Information about fifth disease:

What is it? *Fifth disease* is a mild rash illness that usually affects children. It is caused by a virus called parvovirus B19 that infects the nose and throat and can be spread from person to person. Most people have already had the illness by the time they are adults and cannot get it again.

The illness usually starts with a headache, sore throat, low-grade fever, or chills. These symptoms last a few days and are followed by a bright red rash on the cheeks, which look like slap marks. A “lacy” rash may then occur on the trunk and arms and legs. Symptoms can begin 4-14 days after exposure to the virus. The rash may appear on an off for several weeks. Adults may not develop the rash but may experience joint pain and swelling, particularly in the hands and feet. The disease is usually mild, and most children and adults recover without problems. People with certain blood disorders and those with weakened immune systems may develop more severe symptoms. They may also be infectious for a longer period of time.

How do you get fifth disease? When an infected person coughs, sneezes or speaks, the virus is sprayed into the air. These contaminated droplets can then be inhaled or touched by another person. Women who develop *fifth disease* during pregnancy may pass the infection to their unborn fetus. In rare situations, miscarriages and stillbirths have been associated with *fifth disease* during pregnancy, but in most cases the consequences are not dangerous.

How is it diagnosed? The diagnosis in children is based on the appearance of the rash on the face. There is a laboratory test that can tell if you had the infection in the past or more recently. These tests are usually only done for people at higher risk of complication, such as pregnant women.

How is it treated? There is no specific treatment for *fifth disease*. Health care providers may suggest treatment to relieve some symptoms.

How do you stop the spread of fifth disease?

1. Always wash your hands with soap and running water after wiping or blowing noses or after touching nose or throat secretions and before eating or handling food. Babies and children need their hands washed at these times, too.
2. Encourage your child not to share food, drinks, or utensils at school.

When can your child return to school? Children with *fifth disease* do not have to stay home. By the time they are diagnosed with the rash, they are no longer contagious.

Exhibit 8-13

Sample Letter to Parent/Guardian of Close Contacts about Invasive Meningoccocal Disease

Dear Parent or Guardian:

A student or staff member in our school has a serious infectious illness caused by the bacteria named *Neisseria meningitidis.* This bacterium can sometimes cause meningitis (infection of the tissue that covers the brain and spinal cord) or sepsis (an infection of the blood), which can be severe and even fatal if not treated. The bacteria can spread between persons if they are in close contact that involves an exchange of saliva (spit). This can happen through activities such as:

- coughing,
- sharing cigarettes or lipstick,
- sneezing,
- kissing,
- sharing food or sharing eating or drinking utensils such as cups or water bottles, or
- sharing a closed space (i.e., a car).

There are safe and effective antibiotics that can significantly reduce the risk of infection in people who have had close contact with the ill person.

We believe that your child HAD close contact with the ill person.

Although the chances of your child developing a serious illness (such as meningitis or sepsis) are small, to ensure the health of your child, please take the following steps:

1. Take your child to his or her health care provider. Tell your child's health care provider that your child was exposed to another student or staff member who has come down with a meningococcal illness. Be sure to discuss the fact that your child is considered to have had **close contact** with the ill person prior to their becoming ill. Show your child's health care provider this letter for clarification of your child's contact with the ill person.
2. Our [health consultant/school physician] recommends that your child take an approved antibiotic to help eliminate the organism and to lower the risk of spreading the disease to others. Meningococcal disease can be very serious, but proper treatment can help protect your child. Your child's health care provider can prescribe this treatment.
3. The preventive antibiotic treatment is not always 100% effective; therefore, it is very important for you to watch your child's health carefully during the next 3 weeks for signs of illness such as:
   - fever,
   - headache,
   - mental confusion,
   - lethargy (feeling very tired),
   - vomiting,
   - stiff neck, or
   - a skin rash with fine red "freckles" or purple splotches.

If your child becomes ill, contact his or her doctor immediately, whether or not antibiotics were given.

Our school will be very watchful during the next 3 weeks. We will notify you if anyone else becomes ill. If you have any questions or concerns about your child, contact your child's health care provider or the school health office.

Exhibit 8-14

Sample General Letter to Parent/Guardian about Invasive Meningococcal Disease

Dear Parent or Guardian:
A student or staff member in our school has a serious infectious illness caused by the bacteria named *Neisseria meningitidis.* This organism can sometimes cause meningitis (infection of the tissue that covers the brain and spinal cord) or sepsis (an infection of the blood), which can be severe and even fatal if not treated. The bacteria can spread between persons if they are in close contact that involves an exchange of saliva (spit). This can happen through activities such as:

- coughing,
- sneezing,
- sharing cigarettes or lipstick,
- kissing,
- sharing food or sharing eating or drinking utensils such as cups or water bottles, or
- sharing a closed space (i.e., a car).

While household contacts (family members and others who live with the individual) are at the highest risk of contracting this illness, others who have had these types of contact with the ill person may also be at risk of becoming ill.

We believe that your child DID NOT have close contact with the ill person.

However, if you feel that your son or daughter had the kind of contact described above with the ill person prior to their becoming ill, please notify your child's health care provider.

There are safe and effective antibiotics that can be taken to reduce the risk of infection. These medicines can help eliminate the bacteria from someone who has been exposed to an ill individual. However, at this time, only people who are considered to be **close** contacts of the ill person need to take this medication.
Whether or not your child had close contact with the ill person, it is very important for you to watch your child carefully during the next 3 weeks for signs of illness such as:

- fever,
- headache,
- lethargy (feeling very tired),
- stiff neck,
- mental confusion,
- vomiting, or
- a skin rash with fine red "freckles" or purple splotches.

If your child becomes ill, contact his or her doctor immediately.

Our school will be very watchful during the next 3 weeks. We will notify you if anyone else becomes ill or our recommendations change. If you have any questions or concerns about your child, contact your health care provider or the school health office.

Exhibit 8-15

Sample Letter to Parent/Guardian about Meningitis of Unknown Etiology

Dear parent or guardian:

A student or staff member in our school has been diagnosed with meningitis.

Please take these precautions:

1. Watch your child for signs of meningitis (see below).
2. **If your child does have the symptoms of meningitis, contact his or her doctor immediately**.
3. **There is no need for any antibiotic treatment for people who have been in contact with this case *at this time*.** Our school will be very watchful during the next few weeks. We will notify you if anyone else becomes ill or if our recommendations for antibiotic treatment change.
4. Tell us if your child has been diagnosed with meningitis.
5. If you have any questions or concerns about your child, contact your health care provider or the school health office.

Information about viral meningitis:
What is it? Meningitis is an infection of the tissue that covers the brain and spinal cord. Viral meningitis, which is the most common type, is caused by an infection with one of several types of viruses and, in most cases, resolves on its own. Meningitis can also be caused by infections with several types of bacteria or fungi.

Symptoms of meningitis include **high fever, headache, and stiff neck**. Other symptoms may include mental confusion, tiredness, vomiting, and a skin rash. A person with viral meningitis is usually less sick than a person with meningitis caused by bacteria and recovers more quickly and without specific treatment.

When meningitis is caused by certain bacteria it may be necessary for close contacts of that case to receive antibiotics. **At this point in time there is no need for antibiotic treatment of contacts of this case of meningitis.**

How do you get meningitis? The viruses and bacteria that cause meningitis may be spread from person-to-person through saliva or feces, depending on which bacteria or virus is causing the illness, but most people who are exposed do not develop serious illness. It is not really known why a few people who are exposed to these bacteria and viruses get seriously ill and most others do not.

How is it diagnosed? Meningitis is most commonly diagnosed based on clinical signs and symptoms and laboratory tests done on spinal fluid.

How is it treated? Meningitis caused by bacteria is typically treated with antibiotics. No specific treatment for viral meningitis exists at this time.

How do you stop the spread of viral meningitis?

- Always wash your hands with soap and running water after using the toilet, changing a diaper, helping a child use the toilet, and before touching food or eating. Also wash your hands after wiping or blowing noses or after touching nose, throat or eye secretions. Babies and children need their hands washed at these times too.
- Encourage your child not to share food, drinks, or utensils at school.

Exhibit 8-16

Sample Letter to Parent/Guardian about Viral Meningitis

Dear parent or guardian:

A student or staff member in our school has been diagnosed with viral meningitis (also called aseptic meningitis).

Please take these precautions:

1. Watch your child for signs of meningitis (see below).
2. **If your child does have the symptoms of meningitis, contact his or her doctor immediately**.
3. **There is no need for any antibiotic treatment for people who have been in contact with this case.**
4. Tell us if your child has been diagnosed with meningitis.
5. If you have any questions or concerns about your child, contact your health care provider or the school health office.

Information about viral meningitis:

What is it? Viral meningitis is an infection of the tissue that surrounds the brain and spinal cord and is most commonly caused by a group of viruses called **enteroviruses.**

Symptoms of meningitis include **high fever, headache, and stiff neck**. Other symptoms may include mental confusion, tiredness, vomiting, and a skin rash. A person with viral meningitis is usually less sick than a person with meningitis caused by bacteria and recovers more quickly without specific treatment. However, viral meningitis can rarely cause serious illness.

People usually become sick between 3–6 days after they are infected with enteroviruses. They can then spread the virus to others from their respiratory secretions for about a week and from their feces (stool) for several weeks.

How do you get viral meningitis? Enteroviruses are contagious and are most often spread through direct contact with respiratory secretions from the mouth or nose of an infected person. The virus can also be spread from the feces of persons who are infected. Many people are exposed to enteroviruses but only a small number of those will get meningitis. Most healthy people who get these viruses will not get meningitis and will have no symptoms or very mild ones.

How is it diagnosed? Viral meningitis is most commonly diagnosed based on clinical signs and symptoms. Sometimes laboratory tests will be done on spinal fluid.

How is it treated? No specific treatment for viral meningitis exists at this time. Most patients completely recover on their own.

How do you stop the spread of viral meningitis?

- Always wash your hands with soap and running water after using the toilet, changing a diaper, helping a child use the toilet, and before touching food or eating. Also wash your hands after wiping or blowing noses or after touching nose, throat, or eye secretions. Babies and children need their hands washed at these times too.
- Encourage your child not to share food, drinks, or utensils at school.

Exhibit 8-17

Sample Letter to Parent/Guardian of Close Contacts about Tuberculosis

LETTERHEAD OF LOCAL HEALTH DEPARTMENT OR SCHOOL

TO: Parents or guardians

FROM: School Administration

DATE: _____

RE: Possible exposure to Tuberculosis (TB)

Dear Parent/Guardian:

Recently, someone at _____ was diagnosed with tuberculosis (TB). TB is a curable and preventable disease. The possibility of spreading TB infection is low; therefore it is recommended that only those students and staff who may have had close contact with this person be tested.

Your child has been identified as having had close contact with this person. For your child's safety, it is recommended that your child receive a TB skin test. The TB test will be given on your child's forearm and must be checked in two or three days to find out if your child has TB germs.

A public health nurse will offer TB testing at _____, at no charge. You will be notified of the test results. If your child is found to have a positive TB test and infection with TB germs, arrangements can be made for a chest X ray and a doctor's appointment with an expert in TB care. Antibiotics can be given to prevent your child from getting sick with tuberculosis. If your child's skin test is initially negative (not showing infection yet), a follow-up TB skin test may be required to be sure.

Please complete and sign the attached form*, and return it to the school health office by_____. If you choose to have your child tested by your own doctor, or if your child has had a positive TB test in the past, please notify the school nurse. You will need to submit the date and result of the TB test, and any follow-up treatment.

*** Note:** the "attached form" is to be designed by your individual school.

Exhibit 8-18

Sample Letter to Parent/Guardian about Tuberculosis

LETTERHEAD OF LOCAL HEALTH DEPARTMENT OR SCHOOL

TO: Parents or guardians

FROM: School Administration

DATE: _____

RE: Possible exposure to Tuberculosis (TB)

Dear Parent/Guardian:

Recently, someone at _____ was diagnosed with tuberculosis (TB). TB is a curable and preventable disease. The possibility of spreading TB infection is low; therefore it is recommended that only those students and staff who may have had close contact with this person be tested.

Your child has not been identified as having had close contact with this person and therefore, does not need a TB test at this time. This is based on recommendations received from the Massachusetts Department of Public Health and the local health department.

If you have questions or concerns, please call the school nurse or your local health department's public health nurse.

Exhibit 8-19

Sample Letter to Parent/Guardian about Impetigo

Dear Parent or Guardian:

____ A student at our school has impetigo.
____ Your child may have impetigo.

Please take these precautions:

1. Check your child's skin for an impetigo rash using the information below.
2. Take your child to your health care provider if you suspect your child has impetigo so that medicine may be prescribed.
3. Tell us if your child is treated for impetigo.
4. If your child has impetigo, he or she may return to school after 24 hours of treatment has been given.

Information about impetigo:

What is it? Impetigo is a skin infection common in young children. In impetigo infections, the skin becomes red and may ooze. There may be small bumps clustered together or larger red areas. These areas may have honey-colored crusts or blisters. Impetigo spreads quickly and is often itchy. Children may scratch the crusts off and cause a little bleeding.

What causes it? Impetigo is caused by common skin organisms (such as strep and staph). These organisms usually cause infection only when the skin gets injured (scraped, cut or scratched). Impetigo can spread easily among young children.

How is impetigo diagnosed and treated? Your health care provider can tell you if your child has impetigo. Usually it is treated with some combination of a special soap, an antibiotic ointment, and sometimes an oral antibiotic.

What should you do if your child has impetigo? Keep the impetigo rash clean and dry. You may want to cover it lightly so the ooze and crusts cannot be spread to other people. People who touch the rash should wash their hands very well..

Exhibit 8-20

Sample Letter to Parent/Guardian about Ringworm

Dear parent or guardian:
_____ A student in our school has ringworm.
_____ Your child may have ringworm.

Please take these precautions:

1. Check your child for ringworm using the information below.
2. Take your child to your health care provider if you think he or she has ringworm.
3. Tell us if your child has ringworm.
4. If your child has ringworm, he or she can return to school after treatment has begun.

Information about ringworm:

What is it? Ringworm is a rash caused by a fungus. On the body, you may see red rings that are slightly raised, itchy and scaly. On the scalp, you may see circles of hair loss. On the feet, you may see cracking and peeling skin between the toes. Another kind of ringworm causes whitish patches on the skin. All of these forms of ringworm spread easily. Ringworm is not dangerous and can be easily treated.

How do you get ringworm? Ringworm is spread by touching the rash on another person or by touching scales, broken nails, or hairs that have fallen off the rash. People can also get ringworm from animals that have ringworm.

How is ringworm diagnosed? Your health care provider can usually identify ringworm by looking at the rash. Sometimes a special lamp is used to examine the body. Occasionally, scrapings of skin may be examined under a microscope or cultured to see if any fungus is present.

How is ringworm treated? A special ointment or cream is typically applied to the skin for several weeks. Sometimes, a medicine that is taken by mouth is prescribed, particularly if the diagnosis is ringworm of the scalp.

What should you do if your child has ringworm?

1. Keep the environment as clean, dry, and cool as possible since the fungus that causes ringworm grows easily on moist, warm surfaces.
2. Keep affected areas of the body loosely covered with gauze bandages or clothing to reduce shedding of infected skin.
3. Wash the clothing and towels of a person with ringworm in hot water.
4. Those with ringworm or those caring for someone with ringworm should wash their hands frequently.

Exhibit 8-21

Sample Letter to Parent/Guardian about Conjunctivitis

Dear parent or guardian:
____ A student in our school has conjunctivitis (also called **pinkeye**).
____ Your child may have conjunctivitis.

Please take these precautions:

1. Watch your child and family members for signs of conjunctivitis.
2. See your health care provider if your child develops conjunctivitis. Your child may need to be given an eye medication.
3. Tell us if your child is being treated for conjunctivitis.

Information about conjunctivitis:

What is it? Conjunctivitis is an infection of the eyes. It can be caused by a virus, bacteria, or by allergies. The white parts of the eyes become pink or red; the eyes may hurt or feel itchy or scratchy; and the eyes may produce lots of tears and discharge (pus). In the morning, the discharge may make the eyelids stick together. (Some children and adults have allergies that can cause everything listed here *except pus.*) Conjunctivitis is a mild illness and is not dangerous.

How do you catch conjunctivitis? The pus is infectious. If children rub their eyes, they get it on their hands. They can then touch someone else's eyes or hands or touch an object. If other children get discharge on their hands and then touch their own eyes, they can catch it. It can spread easily among young children, who touch their eyes and everything else and who do not know how (or forget) to wash their hands.

How is conjunctivitis treated? If a health care provider feels that bacteria may be causing conjunctivitis then an antibiotic eye medication will be prescribed. There is no specific treatment for conjunctivitis caused by viruses.

What should you do if your child has conjunctivitis?

1. Keep your child's eyes wiped free of discharge. Use paper tissues, and throw them away promptly.
2. Always thoroughly wash your hands after wiping your child's eyes.
3. Teach your children to wash their hands after wiping their eyes.
4. Ask your health care provider if your child needs to receive eye medication.
5. Be sure to wash anything that touches your child's eyes (such as washcloths, towels, binoculars, toys, and cameras). Do not share towels or washcloths.
6. Do not send your child to school until **the day after** you start giving the medicine. If your health care provider decides not to prescribe an eye medicine, ask for a note to ensure your child's attendance.

Exhibit 8-22

Sample Letter to Parent/Guardian about Scabies

Dear parent or guardian:
_____ A student in our school has scabies.
_____ Your child may have scabies.

Please take these precautions:

1. During the next 6 weeks, watch for signs of an itchy rash that appears like small wavy lines across the skin.
2. If a rash develops, see your health care provider.
3. Tell us if your child has scabies.
4. If scabies is diagnosed, do not return your child to school until the day after he or she has been treated.

Information about scabies:

What is it? Scabies is a common skin infection caused by a microscopic parasite, a mite that infects only humans. The female mite burrows under the skin to lay her eggs, which then hatch. The rash appears as red bumps and short, wavy lines in the skin (where the mites have dug). It is especially common between fingers and toes and at the wrists and ankles, but can be anywhere on the body. The rash is very itchy. Scabies is not dangerous but is very annoying.

How do you get scabies? Anyone can get scabies from another person who has it or from clothes or bedding used by a person with scabies. The mites cannot jump or fly, but they can crawl. They can live up to 3 days off the body. Scabies can be spread until all mites and eggs are destroyed by treatment.

What should you do if think your child has scabies? See your health care provider to get medicine to treat the scabies. Some doctors may want to treat all household members (even those without symptoms) so it doesn't spread to others in the house.

How do you stop the spread of scabies?

1. Wash items that have come into contact with an infested individual's skin during the 4 days prior to treatment in a washer with hot water and dry in a dryer using the hot cycle.
2. Place difficult-to-wash items such as stuffed toys and pillows in tightly closed plastic bags for 1–2 weeks before using again.
3. You can vacuum upholstered furniture but do not use pesticide sprays, since they can harm people and animals.

Exhibit 8-23

Sample Letter to Parent/Guardian about Head Lice

Dear parent or guardian:

___ A student in our school has head lice.
___ Your child may have head lice.

Please do not be alarmed, as this is a common occurrence in schools. Head lice are not a sign of unclean people or homes.

Please take these precautions:

1. Check your child's hair for eggs (also called nits).
2. If you suspect your child has head lice, ask your health care provider to diagnose the problem and recommend appropriate treatment.
3. Tell us if your child is diagnosed as having head lice.
4. If head lice is diagnosed, do not return your child to school until she or he has been treated.

Information about head lice:

What are they? Head lice are tiny insects that live only on people's scalp and hair. They hatch from small eggs (nits) that are firmly attached to the individual hairs near the scalp and cannot be easily moved up or down the hair (as can specks of dandruff). They look like grains of sand. Nits may be found throughout the hair but are most often located at the back of the scalp near the neck and behind the ears. The eggs hatch in 6-10 days, with new lice reaching adulthood about 2-3 weeks later. The lice live by biting and sucking blood from the scalp. Lice can survive 1-2 days away from the scalp. Until a person with head lice is treated they can transmit them to others.

How should you check for head lice? You probably will not see the lice, only the eggs. These are tiny, pearl-gray, oval-shaped specks attached to the hair near the scalp. Look carefully, using a magnifying glass and natural light. Search for nits at the back of the neck, behind the ears, and at the top of the head.

How does a person get head lice? Anyone who has close contact with an infested person or shares personal items can become infested. Lice are spread **only** by crawling from person-to-person directly or onto **shared personal items, such as combs, brushes, head coverings, clothing, bedding, or towels.**

What should you do if your child has head lice? If your child does have head lice, everyone in your family should be checked, and anyone with nits should definitely be treated.

To get rid of head lice:

1. **Use a medicine that your health care provider prescribes or recommends. Use any of these products very carefully, and consult a physician before treating children less than 2 years of age, pregnant or nursing women, or people with extensive cuts or scratches on the head or neck.**
2. After appropriate treatment, removal of nits is a difficult and time-consuming process because nits have such a firm grip on the hair. You can remove them with a special, fine-toothed, nit-removal comb. While removal of nits is not necessary to prevent spread, your school may require it to lessen confusion about whether your child is still infested. It is sometimes hard to tell if nits are alive or dead.
3. **Check for nits daily for the next 10-14 days.** Most treatments recommend a re-application of the treatment 7-10 days later.

4. **Clean personal items and surroundings:**
   - Machine wash all washable and possibly infested items in **hot** water. Dry them in a **hot** dryer.
   - Put nonwashable items (furry toys or pillows) in a **hot** dryer for 20 minutes or dry-clean them.
   - Seal items that cannot be washed or dried in a plastic bag for 10 days (any eggs or lice present will die in this time)
   - Wash combs and brushes in a shampoo approved to kill lice, or soak in hot water (>128.3^{o}F) for at least 5 minutes.
   - Thoroughly vacuum rugs, upholstered furniture, and mattresses.
   - Do not use insecticide sprays because they can be harmful to people and animals.

When can your child return? If your child was diagnosed with head lice, he or she can come back as soon as the shampoo has been used, you have removed as many nits as possible from your child's hair, and you have cleaned or stored personal items. Remember that you must keep checking your child's hair for new nits for at least 2 weeks. [N.B.: Insert your school's policy on return if different from this statement.]

Chapter 9

NUTRITIONAL HEALTH

Scope of the Problem

Nutritional Needs of School-Age Children and Adolescents

Federal Child Nutrition Programs

Legal/Regulatory Issues

The School's Role

Common Nutritional Issues and Recommended Actions for Schools

Sample Policies, Guidelines, and Tools

Summary

Resources: Curricula and Educational Materials

Resources: Massachusetts Agencies and Organizations (General)

Resources: National Agencies and Organizations (General)

Resources: Specific Topics

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 9

NUTRITIONAL HEALTH

Young people must consume adequate nutrients to meet their bodies' demands for optimal growth, development, and performance. Poor nutrition in childhood and adolescence, especially when combined with lack of physical activity (see Chapter 10), compromises health in later life and can have near-term negative consequences. Over the past 2 decades, school-age children have become increasingly overweight, sedentary, and poorly nourished, triggering a tenfold increase in the number of children diagnosed with Type 2 diabetes, as well as escalating rates of pediatric high serum cholesterol and high blood pressure. The Centers for Disease Control and Prevention (CDC) now warns that, without dramatic improvements in eating patterns and physical activity, one in three U.S. children born in 2000 will become diabetic.

SCOPE OF THE PROBLEM

In 2001, the USDA's Food Nutrition and Consumer Services branch estimated that only 2% of school-age children were consuming the daily requirements of all 5 food groups. Instead, the majority were deriving almost 20% of their daily calories from "fats, oils, and sweets." From 1999–2003, the Massachusetts Youth Risk Behavior Survey, conducted biannually by the Massachusetts Department of Education (DOE) among high-school students, recorded significant decreases in the percentage of students who ate 5 or more servings of fruits or vegetables per day (from 14%–11%) and who drank 3 or more glasses of milk per day (from 22%–19%). In 2003, slightly under one third (32%) of all students reported that they had eaten breakfast every day in the week before the survey.

The quality of nutrition during childhood and youth affects health at all stages of the life cycle. The National Institute of Child Health and Human Development, for example, has called osteoporosis "a pediatric disease with geriatric consequences," pointing out that this widespread health problem could be prevented in most cases through adequate consumption of calcium before age 17 (NICHD, 2001, updated 2006). Evidence from nutritional research also strongly suggests that early formation of dietary patterns involving excessive intake of foods high in calories, saturated fat, cholesterol, and sodium and low in complex carbohydrates and fiber contributes significantly to high rates of major chronic diseases (CDC, 2006; Cooke, 2004; Ferraro Thorpe & Wilkinson, 20003; Kavey et al., 2003; Mokdad et al., 2003; World Health Organization, 2003). Poor diet has been associated with many of the leading causes of morbidity and mortality in the United States — coronary heart disease, high blood pressure, stroke, Type 2 diabetes, and some types of cancers (U.S. Department of Health and Human Services, 2000; CDC, 1996).

A healthy diet benefits the mind as well as the body. Numerous studies now exist to demonstrate the connection between the adequacy of nutrition and academic achievement. One of these, a statement from the Center on Hunger, Poverty, and Nutrition Policy at Tufts University, drew the link in stark terms: "Even moderate undernutrition," it said, "can have lasting effects on children's

cognitive development and school performance (Center on Hunger and Poverty, 1998 and 2002). Conversely, well-nourished children are likely to have better attendance, participate more in the classroom, and achieve higher test scores (Busch, Taylor & Kanarek, 2005).

Factors Influencing Eating Behaviors

The eating behaviors of school-age children, from elementary school through adolescence, are influenced by a number of factors:

- **Family eating behaviors:** Research suggests that family members have a powerful influence on children's eating behaviors and attitudes. Foods offered during a child's early years often shape the child's food preferences later in life. Parents/guardians also guide their children's nutritional intake by modeling healthy food choices and portion sizes. Studies indicate that children who regularly experience family meals eat more fruits, vegetables, and dairy products than children who do not.
- **Meal patterns:** Regular consumption of meals and healthy snacks is essential for a child's nutritional health. Breakfast is perhaps the most important meal but is the most often overlooked. Children who eat breakfast are more likely than those who skip it to consume foods with adequate levels of minerals, such as calcium, phosphorus, and magnesium, and vitamins, such A, C, B_{12}, riboflavin, and folate. Healthy snacks contribute necessary energy and nutrients that children may not receive in their breakfast, lunch, and dinner. Snacks can interfere with a healthy diet, however, when they are high in saturated or "trans" fat, low in nutrients, or eaten in quantities beyond a child's calorie needs.
- **Availability of and reliance on fast foods:** Fast food is accessible by youth almost everywhere, including in the cafeterias of hospitals and public schools. A recent study found that children who regularly ate fast food obtained about one-third of their total energy intake from that source and ate more total fat, more saturated fat, more total carbohydrate, more added sugars, more sweetened beverages, less fluid milk, and fewer fruits and nonstarchy vegetables than those who did not. Fast foods appear to contribute an additional 57 calories to the daily diet of the average child in the United States, which could amount to an additional 6 pounds of body weight per year if energy output were unchanged.
- **Food industry marketing practices:** Children and adolescents now spend an average of five and a half hours per day engaged with media—television, videos/DVDs, video and computer games, and the Internet. This is the equivalent of a full-time job, and, on average, involves more time than any other activity, with the exception of sleeping (Henry J. Kaiser Family Foundation, 2004; Roberts & Foehr, 2004). One study found that children were exposed to an average of one food commercial every 5 minutes during a typical Saturday morning of cartoons. Nearly half of these ads promoted foods such as candy, soft drinks, chocolate syrup/powder, chips, cakes, cookies, and pastries. Fast-food advertising constituted nearly 11% of total advertisements. There were no advertisements for fruits or vegetables (Kotz & Story, 1994).
- **Body image and dieting habits:** Movies, television, and magazines that idealize extremely lean physiques can influence young people to diet excessively or practice disordered eating, such as bingeing and purging. Over one-half of teenage girls and nearly one-third of teenage boys engage in unhealthy weight control behaviors such as skipping meals, fasting, smoking cigarettes, vomiting, and taking laxatives (Neumark-Sztainer, 2005).
- **Family income:** Due to the high cost of living, low-income families may run out of food and/or the money to obtain food for days or even weeks each month (Project Bread, 2005). Additionally, because healthy foods tend to be expensive, families in this situation often purchase more affordable foods that are high in sugar, fat, and calories (Neault et al., 2005).

NUTRITIONAL NEEDS OF SCHOOL-AGE CHILDREN AND ADOLESCENTS

Dietary Guidelines for Americans

The Federal Dietary Guidelines for Americans, published every 5 years, provides additional nutritional guidance for individuals age 2 and older. The guidelines form the basis for federal food and nutrition education programs. Key recommendations of the most recent *Dietary Guidelines* (U.S. Department of Health and Human Services (HHS) and U.S. Department of Agriculture (USDA), 2005) applicable for school-age children include:

- Consume a variety of nutrient-dense foods and beverages within and among the basic food groups, while choosing foods that limit the intake of saturated and trans fats, cholesterol, added sugars, salt, and alcohol. (Exhibit 9-1 provides detailed information on key nutrients, how they contribute to health, and food sources.)
- Choose a variety of fruits and vegetables each day. In particular, select from all 5 vegetable subgroups (dark green, orange, legumes, starchy vegetables, and other vegetables) several times a week.
- Consume whole-grain products often; at least half of the grain intake should come from whole grains.
- Consume 3 cups per day (2 cups for children aged 2–8) of fat-free or low-fat milk or equivalent milk products.
- Keep total fat intake to between 25%–35% of calories for children and adolescents aged 4–18, with most fats from sources of polyunsaturated and monounsaturated fatty acids such as fish, nuts, and vegetable oils.
- Reduce the incidence of dental caries by practicing good oral hygiene and consuming sugar- and starch-containing foods and beverages less frequently.
- Consume less than 2,400 mg of sodium per day (approximately 1 tsp. of salt).

Both an executive summary and the complete *Dietary Guidelines* may be accessed online at http://www.healthierus.gov/dietaryguidelines/index.html. A consumer-friendly book, *A Healthier You,* which is based on the science-based nutrition and physical activity advice of the 2005 *Dietary Guidelines* (HHS and the U.S. Government Printing Office (GPO), 2005) is also available in retail bookstores, from the GPO, and online at http://health.gov/dietaryguidelines/.

MyPyramid

The MyPyramid Food Guidance System, introduced by USDA in 2005, provides food-based guidance to help implement the recommendations of the Dietary Guidelines. MyPyramid guidance is based on 4 overarching themes:

- **Variety** — Eat foods from all food groups and subgroups.
- **Proportionality** — Eat more of some foods (i.e., fruits, vegetables, whole grains, fat-free or low-fat milk products), and less of others (i.e., foods high in saturated or *trans* fats, added sugars, cholesterol, salt, and alcohol).
- **Moderation** — Choose forms of foods that limit intake of saturated or *trans* fats, added sugars, cholesterol, salt, and alcohol.
- **Activity** — Be physically active every day.

See the following web page for MyPyramid food intake pattern caloric levels and suggested food intake patterns: http://www.mypyramid.gov/global_nav/media_mypyramid_patterns.html. Web-based interactive and print materials for consumers and professionals, including MyPyramid resources for children aged 6–11, are available at http://www.mypyramid.gov.

Dietary Reference Intakes

Since 1997, the main reference tool for assessing the nutritional adequacy of a population's diet has been the Dietary Reference Intakes (DRIs). DRIs provide recommended nutrient intakes intended to help individuals meet their daily nutritional requirements for health and development, as well as avoid harm from consuming too much of a nutrient. DRI reference values include:

- **Recommended Dietary Allowance (RDA):** the average daily dietary intake level that is sufficient to meet the nutrient requirement of nearly all (97%–98%) healthy individuals in a particular life stage and gender group.
- **Tolerable Upper Intake Level (UL):** the highest level of daily nutrient intake that is likely to pose no risk of adverse health effects for almost all individuals in the general population. As intake increases above the UL, so does the potential risk of adverse effects.

DRIs are designed to meet the needs of individuals who are healthy and free of specific diseases or conditions that may alter their daily nutritional requirements. It is expected that people known to have specific conditions or chronic diseases will get nutritional advice from their health professionals that is tailored to their special needs.

Because determining DRIs has been a complex process, they have been released in stages and are only gradually finding their way into general usage. Exhibit 9-2 shows nutritional recommendations for children and adolescents, compiled by the USDA/ARS Children's Nutrition Research Center at Baylor College of Medicine, using available DRI reference values.

FEDERAL CHILD NUTRITION PROGRAMS

School Breakfast Program

The School Breakfast Program, which began with the passage of the federal Child Nutrition Act of 1966, helps give children a healthy start for the day's activities by providing a breakfast in school at a cost that most families can afford to pay. All public and nonprofit private schools, as well as public and licensed nonprofit residential child care institutions, are eligible to participate.

Beginning on September 1, 1986, state legislation mandated a breakfast program in certain public schools within the Commonwealth. Public schools are required to have breakfast available if: (a) 40% or more of the lunches served 2 years prior were free or at a reduced price and (b) a combined total of 50 or more free and reduced-price meal applications are received by October of the preceding school year. Federal funds are used to reimburse schools and institutions for free and reduced-price breakfasts. Additional state monies are available for mandated schools if the regular free and reduced-price breakfast reimbursement is insufficient to cover the cost of the School Breakfast Program.

The program helps to address the National Education Goal that all children in America will start the school day ready to learn. Studies show that children who eat a nutritious breakfast are more attentive in class, score higher on standardized tests, and are healthier than those who do not. An evaluation of a universal free breakfast pilot program in Boston found that school breakfasts not only reduced child hunger and improved nutrition but also improved school attendance, emotional functioning, and math grades. Nearly 60% of school staff surveyed as part of this evaluation reported a positive change in student behavior, which they attributed to the breakfast program. Sixty-three percent reported an improvement in student attentiveness.

The success of the School Breakfast Program depends upon the support and commitment of individual superintendents, principals, teachers, food service directors, school nurses, and parents/guardians.

School Lunch Program

The National School Lunch Program (NSLP), established through the National School Lunch Act of 1946, provides nutritionally balanced, low-cost or free lunches to more than 26 million children in the U.S. each school day. The USDA's Food and Nutrition Service administers the program at the federal level. At the state level, the NSLP is usually administered by state education agencies, which operate the program through agreements with local school districts. School districts and independent schools that choose to take part in the lunch program receive cash reimbursement and donated commodity assistance from USDA for each meal they serve. In return, they must serve lunches that meet federal nutrition requirements to all children, and they must offer free and reduced-price lunches to income-eligible children.

Any child at a participating school may purchase a meal through the National School Lunch Program. Children from families with incomes at or below 130% of the poverty level are eligible for free meals. Those between 130%–185% are eligible for reduced-price meals, for which students can be charged no more than 40 cents. Children from families with incomes over 185% pay full price, although their meals are still subsidized to some extent. Local school food authorities set their own prices for full-price meals.

School lunches must meet federal nutrition requirements, but local school food authorities make decisions about what specific foods to serve and how they are prepared. Current regulations require schools to follow the Dietary Guidelines for Americans, which recommend that no more than 30% of an individual's calories come from fat, and less than 10% from saturated fat. Regulations also establish a standard for school meals to provide one-third of the Recommended Daily Allowances of protein, vitamin A, vitamin C, iron, calcium, and calories. USDA research indicates that children who participate in the National School Lunch Program have superior nutritional intakes compared to those who bring lunch from home or otherwise do not participate.

A prototype of the Free and Reduced Price Meal Application, for direct distribution at the beginning of each school year, is posted on the DOE's website for Child Nutrition Programs at http://www.doe.mass.edu/cnp. The downloadable MS Word document may be amended to reflect information specific to particular school districts.

LEGAL/REGULATORY ISSUES

All school meals, as part of the USDA National School Lunch Program and School Breakfast Program, must meet the statutory and regulatory nutrition standards defined below:

- Provide one-third (lunch) and one-fourth (breakfast) of the Recommended Dietary Allowances (RDA) for protein, calcium, iron, vitamin A, and vitamin C, for the applicable age or grade groups.
- Provide one-third (lunch) and one-fourth (breakfast) of the energy allowances (calories), for the applicable age or grade groups.
- Follow the applicable recommendations of the *Dietary Guidelines for Americans.*

In addition, the Child Nutrition and WIC Reauthorization Act of 2004 (PL 108.265 s.204) requires that all schools participating in USDA's school meals programs establish a local wellness policy by the beginning of the 2006–2007 school year. The development of these policies must be a broad-

based community effort involving parents/guardians, students, school food service staff, the school committee, school administrators, and the public. Goals must be set for nutrition education, physical activity, and other school-based activities designed to promote student wellness. Nutrition standards must also be established for all foods that are available on each school campus during the school day, with the objective of promoting student health and reducing childhood obesity.

The exact wording of the law may be found at the USDA's Team Nutrition website at http://www.fns.usda.gov/tn/Healthy/108-265.pdf. A companion website (http://www.fns.usda.gov/tn/Healthy/index.htm) also serves as a clearinghouse of information on the components that should be considered when establishing a school wellness policy. Local wellness policy recommendations from the School Nutrition Association may be found at http://www.schoolnutrition.org/uploadedFiles/SchoolNutrition.org/Child_Nutrition/Local_School_Wellness_Policies/SNALocalWellnessPolicyGuidelinesFinal.pdf.

Note: The Sample Policies, Guidelines, and Tools section of this chapter contains information about a set of model nutrition and physical activity policies developed by a national working group of more than 50 health, physical activity, nutrition, and education professionals, to assist local school districts in meeting this requirement.

A la Carte Sale of Competitive Foods

Federal law broadly defines guidance relative to competitive foods (foods sold in competition with school meals). It is found mainly in the National School Lunch Program (NSLP) section (7 CFR 210.11) or School Breakfast Program (SBP) section (7 CFR 220.12). The law allows state agencies and local educational agencies to impose additional restrictions on the sale of competitive foods. Some states (e.g., California, Florida, Illinois) have exercised this option. As a state, Massachusetts follows the USDA regulation as defined. Many school districts have additional requirements.

In 2004, Massachusetts Action for Healthy Kids State Team (Mass AFHK) published the *Massachusetts A La Carte Food & Beverage Standards to Promote a Healthier School Environment.* The team, which is composed of statewide leaders in nutrition, education, health, and physical activity and is co-chaired by representatives from the Massachusetts Department of Education (DOE) and Massachusetts Department of Public Health (DPH), sought to tackle the pervasive problem of the a la carte sale of high-calorie, high-fat, and high-sugar food and beverages in schools through distribution of this document. It attempts to remedy the lack of effective standards for competitive foods, including foods and beverages sold a la carte, in vending machines, in school stores, or as part of school fundraisers. Specific guidelines may be found in this chapter in the sections "The School's Role" and "Sample Policies, Guidelines, and Tools," and the full text is available online at http://www.maclearinghouse.com/PDFs/Health&Wellness/MA_Food_Standards.pdf.

Note: The above listing of laws and regulations is not intended to be comprehensive. Additional references that relate to specific situations are mentioned within the text of this chapter. Please be certain to also check for new laws and regulations that may be in effect after publication of this Manual. The Massachusetts General Laws (MGL) may be found online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations (CMR) at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated but are not the official versions. Always refer to official editions of the MGL and CMR.

THE SCHOOL'S ROLE

Schools can and should play a major role in improving students' nutritional health. The national Action for Healthy Kids (AFHK) initiative, which was established in response to Dr. David Satcher's 2001 *Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity,* has drawn up a list of 12 "Commitment to Change" action steps that schools can take to support the development of healthy students. These are:

- Provide age-appropriate and culturally sensitive instruction in health education and physical education (see Chapters 3 and 10) that help students develop the knowledge, attitudes, skills, and behaviors to adopt, maintain, and enjoy healthy eating habits and a physically active lifestyle.
- Provide students in PreK–12 with behavior-focused nutrition education, which is integrated into the curriculum, is interactive, and teaches the skills they need to adopt healthy eating habits.
- Ensure that meals offered through all school feeding programs meet federal nutrition standards.
- Adopt policies ensuring that all foods and beverages available on school campuses and at school events contribute toward eating patterns that are consistent with the Dietary Guidelines for Americans.
- Provide food options, such as fruits, vegetables, whole grains, and low-fat or nonfat dairy foods, which are low in fat, calories, and added sugars.
- Ensure that healthy snacks and foods are provided in vending machines, school stores, and other venues within the school's control.
- Prohibit student access in elementary schools to vending machines, school stores, and other venues that contain foods of minimal nutritional value and compete with healthy school meals, and restrict access in middle and high schools.
- Provide an adequate amount of time for students to eat school meals; schedule lunch periods at reasonable hours around midday.
- Provide all children from PreK–12 with quality daily physical education that helps develop the knowledge, attitudes, skills, behaviors, and confidence needed to be physically active for life (see Chapter 10).
- Provide daily recess periods for elementary-school students, featuring time for unstructured but supervised active play (see Chapter 10).
- Provide adequate co-curricular physical activity programs, including fully inclusive intramural programs and physical activity clubs (see Chapter 10).
- Encourage the use of school facilities outside of school hours for physical activity programs offered by the school and/or community-based organizations (see Chapter 10).

Promoting Healthy Eating Through Nutrition Education

The starting point for any health improvement effort is education, which provides students with a solid foundation of information about nutrition information and healthy food choices.

The legal basis for health education in Massachusetts Public Schools is M.G.L. c.71, s.1, which states, in part, that:

> "Instruction in health education shall include, but not be limited to: consumer health, ecology, community health, body structure and function, safety, nutrition, fitness and body dynamics, dental health, emotional development, and training in the administration of first aid, including cardiopulmonary resuscitation…"

M.G.L. c.69, s.1D, which directs the Board of Education and Commissioner of Education to develop academic standards for core academic subjects, does not include health education per se,

but does stipulate that the standards may provide for instruction in a number of health-related issues, including nutrition.

The Massachusetts Comprehensive Health Curriculum Framework, developed by the DOE in 1999, provides a general standard for K–12 nutrition education that states, "Students will gain the knowledge and skills to select a diet that supports health and reduces the risk of illness and future chronic diseases." Instruction in nutrition includes evaluation of food promotion and media messages regarding realistic body size and shape, as well as consumer and nutrition skills needed to select appropriate foods in varied settings. Topics generally covered include improving nutrition, safe and adequate food supply, and social influences. Within these topic areas, learning standards are defined for grades PreK–5, grades 6–8, and grades 9–12. For more information, go to http://www.doe.mass.edu/frameworks. It is important to note that when providing nutrition education, health educators, teachers, nurses, and food service personnel need to be sensitive to the child with special health care needs who may have specific dietary restrictions and, hence, may not be permitted to eat certain foods discussed in the nutrition education curriculum.

In Massachusetts, health education curricula and textbook choice are controlled locally. Most school districts have established processes to review and select texts and curricula. Ideally, this process involves the school health advisory committee, which is a team or work group including health education specialists, curriculum specialists, physical education and family/consumer sciences teachers, school nurses, school physicians, school counselors, school administrators, food service administrators, parents/guardians, and community representatives. An increasing number of curricula focusing on nutrition and healthy eating have been rigorously evaluated for their effectiveness in influencing student behavior (see Resources: Curricula and Educational Tools). In addition, efforts are underway at the state level to develop and test feasible and cost-effective educational interventions. With funding from the Centers for Disease Control and Prevention (CDC), DPH has collaborated with other state agencies, public and private organizations, and the medical community to develop a state plan for the prevention of overweight and obesity.

One specific initiative is Healthy Choices, a school-based nutrition and physical activity program for middle-school students. It includes activities before, during, and after school and also aims to create a more cohesive school environment by incorporating the following elements:

- the CDC's School Health Index (SHI), an assessment tool that looks at nutrition and physical activity policies and systems change (see section on Sample Policies, Guidelines, and Tools as well as resources for more information on SHI);
- a strategy of integrating nutrition and physical activity into existing core subjects (e.g., math, science, social studies, health, physical education); and
- the Planet Health curriculum developed by Harvard's Prevention Research Center.

Additional information about Healthy Choices is available from the DPH. Check the website at http://mass.gov/dph/fch/nutrition/health_choice.htm.

Learning about nutritional health should not be confined to the classroom. A healthy school nutrition environment gives students not only consistent, reliable health information but also ample opportunity to use it. For example, in a healthy environment:

- The classroom, the school dining room, and other school activities provide clear and consistent messages that explain and reinforce healthy eating and physical activity habits;
- Students learn to make healthy lifestyle choices not only in the classroom and the school dining room, but also at class parties or sports events, and wherever they may be throughout the school day; and

- Students have many opportunities to practice healthy habits, including choosing from an array of healthy food options, eating in relaxed and comfortable surroundings, and enjoying daily physical activity.

Nutrition within a Coordinated School Health Model

The Massachusetts Coordinated School Health Program (CSHP), a CDC-funded effort of the DOE and DPH, uses a 9-component model of school-based health promotion to improve nutrition and increase physical activity among youth (See Chapter 1). Below is an example of how a program addressing nutrition would work to extend education on that subject across the 9 components of the Massachusetts CSHP model, so that students are regularly exposed to consistent messages about nutrition and examples of healthy choices:

Health Education: Nutrition should be included in any health education class.

Physical Education: The relationship between physical activity and nutrition should be included in any program devoted to fitness and health.

Health Services: The school nurse or school-based health center staff should have nutrition information available and develop plans for students with special dietary needs. In addition, they may complete periodic Body Mass Index (BMI) assessments to identify students at nutritional risk. (See Exhibit 9-6 for a sample individual assessment and Chapter 5 for information on BMI screening.)

Nutrition Services: Lunches should match USDA requirements and offer healthy foods that taste good. Food service personnel should be educated in nutrition and sanitation.

Counseling and Psychological Services: These behavioral health staff should collaborate with other school staff to promote healthy eating and physical activity. Areas of involvement may include developing policies ensuring that students with special dietary needs are not singled out and providing support and referral for children identified with disordered eating patterns.

Healthy School Environment: Healthy food should be provided at mealtimes and snack times, including parties. Junk food should not be used for fundraisers, in vending machines, or as a reward for good performance.

Health Promotion for Staff: Staff should be provided with the education and skills needed to make healthy food choices. Access to nutritional foods should be ensured. They should be encouraged to set an example for students by choosing healthy foods.

Parent/Guardian and Community Involvement: Parents/guardians may be asked to become involved in promoting a healthy school environment by sending healthy lunches and snacks to school, attending workshops on nutrition, and providing healthy foods at home.

Family and Consumer Science Education: Students need to learn and practice the skills necessary to make healthy food choices (e.g., how to read and evaluate nutrition labels while food shopping, interpreting and measuring portion sizes). They should also be encouraged to become advocates for increasing the availability of healthy food options in the school cafeterias, restaurants, and other establishments within their communities.

The Importance of Team Effort

Creating a school environment that fosters nutritional health cannot be accomplished through administrative measures alone. The Child Nutrition and WIC Reauthorization Act of 2004 explicitly recognizes this by requiring that wellness policies be developed by diverse coalitions. Change on this scale requires the collaborative efforts of many people, both within and outside the school. Such efforts should involve not only school administrators, but health educators, food service personnel, school nurses, school physicians, athletic directors, and teachers. Equally critical to success is the involvement of students, their families, and interested members of the community in developing plans to address nutrition and physical activity policy and programming.

Many schools already have an existing school health advisory committee under the Coordinated School Health Program. The 9 interactive components of CSHP involve the entire school staff, the community, and families to create a healthy environment for young people (see also Chapters 1 and 2). Others have formed similarly structured groups to work with USDA's Team Nutrition, which provides the framework for team efforts by school nutrition staff, teachers, parents/guardians, the media, and other community members. The task of establishing a local wellness policy involves a new set of tasks for either an existing team or a new team, if required.

Improving Food in the School Environment

One of the objectives of the Healthy People 2010 National Health Objectives is to "Increase the proportion of children and adolescents aged 6–19 years whose intake of meals and snacks at school contributes to good overall dietary quality" (HHS, 2000). Improving the quality of students' dietary intake in the school setting is vital, because meals and snacks consumed at school make a major contribution to students' total daily consumption of food and nutrients.

USDA has made a commitment to improve the nutritional quality of all school meals. It works to educate and motivate children to make healthy food choices and to provide school food service staff with training and technical support. USDA pursues these goals in concert with state and local school food authorities, through its Team Nutrition initiative and its Nutrition Education and Training Program.

Since 2001, DOE has been using *Changing the Scene — Improving the School Nutrition Environment,* a tool kit from the USDA's Food & Nutrition Service (FNS), to improve the school nutrition environment. *Changing the Scene* addresses the entire school nutrition environment, including a commitment to nutrition and physical activity, pleasant eating experiences, quality school meals, other healthy food options, nutrition education, and marketing the issue to the public. (For more information about this tool kit, see section titled Sample Policies, Guidelines, and Tools.)

The School Nutrition Association (formerly American School Food Service Association) also encourages all school districts to establish policies that encompass the following concepts of nutritional integrity:

- Nutrition standards, based on scientific recommendations, will be adapted to set appropriate goals. Emphasis will be placed on eating a variety of foods at school meals with adequate dietary fiber (see Exhibit 9-3) and lower amounts of fat, sodium, and sugar.
- Student preferences will be considered in menu planning. Because foods must be actually eaten to provide nutrients, menu changes will be gradual to ensure acceptance.
- Meals will contain adequate calories and a variety of foods to support growth, development, and the maintenance of healthful body weight.
- The nutritional value of school meals will be evaluated over a period of days.
- Purchasing practices will be developed to ensure the use of high-quality ingredients and prepared products to maximize flavor and acceptance. School food service professionals

will work with industry to develop appetizing and affordable products that meet nutrition standards.
- Foods will be prepared in ways that ensure a balance between optimal nutrition and student acceptance.
- Foods sold in addition to meals will be thoughtfully selected to ensure optimal nutrition quality and to foster healthful eating habits. These foods will be limited in number to prevent the separation of students who can and cannot afford additional purchases.

Massachusetts AFHK recommends the following guidelines when schools participate in a la carte/competitive food sales *(Massachusetts A La Carte Food & Beverage Standards to Promote a Healthier School Environment, 2004)*:

- Schools should provide students with healthy foods consistent with recommendations from the Dietary Guidelines for Americans.
- Schools should reinforce healthy messages by teaching healthy eating habits in the classroom.
- If schools participate in fundraising involving food, the fundraiser should support a healthy school environment and avoid foods that do not meet the specifications of the Dietary Guidelines for Americans.
- A healthy diet can include all foods, as long as snacks, desserts, side dishes, and entrées are appropriately portioned. Competitive foods should not take the place of a nutritionally balanced meal.
- The school environment should be a place where students can learn to make healthy choices. Intense marketing aimed at children that promotes consumption of foods of low nutritional quality (e.g., high calorie, containing high saturated and/or trans fat) should be eliminated throughout the school environment.
- Schools should promote health and nutrition messages consistent with those taught by parents/guardians, teachers, nurses, and nutritionists.

(See other recommendations from this document in the section of this chapter titled Sample Policies, Guidelines, and Tools.)

COMMON NUTRITIONAL ISSUES AND RECOMMENDED ACTIONS FOR SCHOOLS

The following section explores common nutritional issues affecting children and adolescents and includes suggestions for actions that schools can take to assess, prevent, and address these conditions among their students.

Eating Disorders: Anorexia Nervosa, Bulimia, Chronic Dieting

Eating disorders are estimated to affect 5–10 million American adolescent girls and women and approximately 1 million American boys and men. The 2003 Massachusetts Youth Risk Behavior Survey (YRBS) revealed that while 10% of high-school students surveyed were actually overweight, 31% thought they were, and 46% were trying to lose weight. Male students were more likely to be overweight, but female students were more likely to perceive themselves as overweight or to have been trying to lose weight. Eating disorders have been diagnosed in children as young as 3 years old; however, typically the onset is 12–18 years of age.

According to the 2003 YRBS, 17% of all students used an unhealthy method of weight loss, such as fasting; taking diet pills, powders, or liquids without a doctor’s advice; or vomiting or using a

laxative. Three of the most common eating disorders seen in school-age populations are anorexia nervosa, bulimia nervosa, and chronic dieting:

- ***Anorexia nervosa*** is clinically defined as an intense fear of fatness and overweight, extreme weight loss (more than 25% of ideal body weight), amenorrhea, and distorted body image. It is conservatively estimated that 4% of 13–18 year olds have symptoms of anorexia nervosa. Extended periods of nutrient deficiencies can have irreversible effects, including muscle wasting and osteoporosis (weak bones caused by inadequate calcium intake). Other associated health problems include hormone imbalances, lowered basal metabolic rate, cold intolerance, anemia, pallor, dry skin, constipation, hypotension, bradycardia, growth of downy hair over the entire body, sleep disturbances, electrolyte imbalance, dehydration, and dental caries. The mortality rate for anorexia nervosa ranges from 5%–20%.

- ***Bulimia nervosa*** is more common than anorexia nervosa. This disease is characterized by repeated episodes of binge eating followed by feelings of depression leading to self-induced vomiting, use of diuretics or laxatives, dieting, or rigorous exercise. Bulimia is harder to detect than anorexia nervosa because women who are bulimic typically go to unusual lengths to hide the behaviors. In addition, many bulimics tend to be within normal weight ranges. Eight percent of 14–24 year olds are estimated to have symptoms of bulimia. The hazards associated with bulimia nervosa include electrolyte and fluid imbalances, anemia, tears in the lower esophagus, difficulty swallowing, swollen salivary glands, and dental caries.

- ***Chronic dieting*** is described as ongoing, constant dieting behavior. The behavior may be cyclical, often comprised of fasting and overeating, or may be an obsession with "get thin fast" diet products. This type of dieting behavior typically results in little or no permanent weight loss. Limited and restricted food intake can increase the risk for nutritional deficiencies and compromise growth and development. There is an increased risk for long-term metabolic disorders due to periods of induced starvation offset by overeating. Individuals develop a distorted relationship with food and are at an increased risk of becoming a true anorectic or bulimic.

Athletes are found to be particularly at risk for eating disorders. Sports that emphasize a very slender body, such as ballet, gymnastics, and long-distance running, can lead a student to decrease food intake for optimum performance when extra nutrients are actually needed. Participation in sports, such as wrestling, which require competitors to maintain a prescribed weight, can also lead to eating disorders. (See section on Student Athletes later in this chapter and Chapter 10, Physical Fitness and Sports.)

What Schools Can Do:

- Teach staff to recognize eating disorders signs and symptoms and to establish a referral system for at-risk children.
- Incorporate messages about positive body image into nutrition, health, and physical education classes, stressing a healthy, strong body type as the desired image and the importance of healthy eating and physical activity as the means to achieve this.
- Identify psychological motives for weight loss and refer students to a counselor when appropriate.
- Encourage healthy eating habits by providing healthy foods through school food programs and classroom-based activities.

- Reinforce healthy eating/physical activity patterns by providing a healthy school environment.
- Encourage physical activity, especially at school, as an alternative to dieting.
- Conduct periodic Body Mass Index (BMI) screening and refer as needed.
- Refer students to a weight management support group offered through the school health services program or a community health center, if appropriate.
- Start a student wellness committee to empower students to be responsible for their own actions.

See Exhibit 9-7 for a list of common behaviors associated with disordered eating patterns.

Food Allergies

Food allergies, which currently affect an estimated 6%–8% of school-age children, present a substantial and growing challenge for schools. A nationwide survey of 400 school nurses found 44% reporting an increase in children with food allergies over the past five years (Weiss et al., 2004). The incidence of peanut allergies, alone, more than doubled between 1997 and 2002 (Metcalfe, Sampson & Simon, 2003). Every school district should expect at some point to have students with food allergies, and schools must be prepared to deal with this, including the potential for anaphylaxis, a life-threatening allergic reaction (Weiss et al., 2004). Food-induced anaphylaxis is the single most common cause of anaphylaxis evaluated in emergency departments in the United States (Nowak-Wegrzyn, 2003).

The 8 major food allergens — milk, eggs, peanuts, tree nuts (such as walnuts and almonds), soy, wheat, fish, and shellfish — cause more than 90% of all food allergic reactions. Peanuts and tree nuts alone account for 92% of severe and fatal reactions. Among children, allergies to milk and eggs are most common. However, individuals can be allergic to any food, and some may be allergic to more than one.

People with allergies have over-reactive immune systems that target otherwise harmless elements of our diet and environment. An allergic reaction to food starts with the immune system recognizing a specific food protein as a target. This initiates a sequence of events in the immune system's cells, resulting in the release of chemical mediators, such as histamine. These mediators trigger inflammatory reactions in the tissues of the skin (itching, hives, rash), the respiratory system (cough, difficulty breathing, wheezing), the gastrointestinal tract (vomiting, diarrhea, abdominal pain), and the cardiovascular system (decreased blood pressure, heartbeat irregularities, shock). When the symptoms are widespread — or systemic — the reaction is termed anaphylaxis.

When a physician assesses that a child's food allergy may result in anaphylaxis, the child's condition meets the definition of "disability" and is covered under the federal Americans with Disability Act (ADA), Section 504 of the Rehabilitation Act of 1973, and may be covered under Individuals with Disabilities Education Act (IDEA) if the allergy management affects the student's ability to make educational progress (see Chapter 7).

What Schools Must Do:

- Develop and implement a comprehensive policy regarding the care of a child with life-threatening allergies;
- Develop an Individualized Health Care Plan (IHCP) that includes an Allergy Action Plan (AAP) addressing the management of anaphylaxis for any student with known food allergies that are considered potentially life-threatening, either prior to the student's entry into school or immediately after the diagnosis of the condition;

- Organize and conduct a meeting to plan for the care of the student, making sure to include the student's parents/guardians, the student (if appropriate), the classroom teacher, the food service manager, and other personnel, as determined by the student's needs;
- Ensure that all staff have education regarding life-threatening allergies; and
- Ensure that staff entrusted with the care of students receive basic education concerning food allergies, prevention of exposure, and emergency response procedures to follow if an anaphylactic event occurs, including the administration of EpiPen.

See Chapter 6 for discussion of EpiPen administration and Chapter 7 for more information on food allergies. For further information, refer to *Managing Life Threatening Food Allergies in Schools* (2002), a guidance document developed by DOE in collaboration with the School Health Unit of DPH. It can be found online at http://www.doe.mass.edu/cnp/news02/allergy.pdf.

Hunger

A recent report from USDA (Nord, Andrews & Carlson, 2005) documented an increase in hunger in Massachusetts. Comparing the most recent 3-year period (2002–2004) to the previous 3-year period (1999–2001), 18,000 more households (approximately 45,000 more people) reported food insecurity with hunger (defined by prolonged periods without adequate food and severe instances of hunger). According to the report, 179,000 households (449,000 people) are struggling to put food on the table. The root cause of hunger is poverty — 123,000 children aged 5–17 live in poverty. In low-income communities, families with children are 4.5 to 5 times more likely to experience food insecurity than families statewide and the situation is even worse for single-parent families (Project Bread, 2006).

Hunger is linked to many pediatric health concerns, including asthma, lead poisoning, failure-to-thrive, and overweight. Research has also clearly demonstrated that hunger and undernutrition affect a child's behavior, school performance, and overall cognitive development. A hungry child has difficulty learning, due to the many significant side effects of hunger, which include:

- excessive irritability
- low attentiveness
- apathy
- low curiosity
- anxiety
- low physical activity
- increased hostility
- inability to concentrate well
- lessened independence
- fatigue
- low tolerance to frustration
- impaired ability to elicit effective and supportive stimulation from the social environment

Even short-term hunger can adversely impact academic performance. Skipping breakfast, for example, has been shown to negatively affect children's problem-solving ability. A recent study in Massachusetts showed that higher levels of participation in the School Breakfast programs were correlated with improved Massachusetts Comprehensive Assessment System (MCAS) scores. School food programs have demonstrated that by providing substantial amounts of a child's daily nutrient needs, they are able to improve a child's learning ability and decrease the rate of tardiness and absenteeism.

What Schools Can Do:

- Provide breakfast for children at the start of every school day.

- Implement universal breakfast programs at all schools in low-income communities.
- Promote participation in the National School Breakfast and School Lunch programs.
- Sponsor summer food service programs.
- Ensure that school breakfast and lunch are appealing and meet the highest standards for nutritional quality.
- Implement policies that increase access to and limit stigma associated with the receipt of a free or reduced-cost meal.

Iron Deficiency Anemia

Iron deficiency anemia is defined as a decreased ability to carry oxygen in the blood to organs and tissues. Children may be tested for anemia by having a hematocrit (hct) or hemoglobin (hgb) blood test. While anemia is one of the most prevalent nutrition problems in the United States and affects children at all income levels, it is especially common among poor children.

Symptoms of iron deficiency anemia include anorexia, fatigue, and a decrease in attention span, strength, and learning abilities. The effects of anemia on learning and behavior are similar to those of mild to moderate undernutrition. Even mild cases lead to shortened attention span, irritability, fatigue, and a decrease in the ability to concentrate. Anemic children are known to do poorly on vocabulary, reading, math, problem-solving, and psychological tests. Reducing iron deficiency among young children, as well as among girls and women aged 12–49, is a Healthy People 2010 goal (HHS, 2000).

The best way to prevent iron deficiency anemia is to make sure that children are getting enough iron-rich foods in their diets. Children ages 4–10 need about 10 milligrams (mg) of iron daily; adolescent males and females (11–18 years old) need 12 mg and 15 mg, respectively. Foods rich in dietary iron are listed in Exhibit 9-5.

What Schools Can Do:

- Offer comprehensive nutrition education that addresses the prevention of iron-deficiency anemia.
- Promote participation in USDA-sponsored school meal programs that target key nutrients such as dietary iron.
- Ensure awareness of the link between high intensity athletics and the increased risk of iron-deficiency anemia.

Lactose Intolerance

Lactose intolerance is not the same as a milk allergy. The latter is a relatively rare but much more serious condition, affecting 2%–5% of the population from infancy, which can produce symptoms ranging from mild gastrointestinal upset to anaphylactic shock (see previous section on Food Allergies). Lactose intolerance is the inability to properly digest lactose, a sugar found in milk and other dairy foods. Symptoms include flatulence, bloating, abdominal cramping, and diarrhea. Among North American adults, an estimated 79% of Native Americans, 75% of blacks, 51% of Hispanics, 21% of whites, and 15%–100% of Asian populations exhibit lactose intolerance.

Individuals with lactose intolerance often avoid dairy products and, without appropriate supplementation, are at risk for nutrient deficiencies, including vitamins A and D, calcium, and riboflavin. This increases the likelihood of bone diseases, such as rickets and osteoporosis, in childhood and adult life.

Children diagnosed with lactose intolerance are often able to consume some dairy products without suffering abdominal discomfort. The National Institute of Child Health and Human

Development (NICHD) suggests that, for children and teens with lactose intolerance, milk is often better tolerated when consumed with a meal. Some dairy foods, such as hard cheeses or yogurt, contain less lactose than milk and cause fewer symptoms. In addition, lactose-reduced and lactose-free milk products are now readily available in most supermarkets and in many schools. School food service staff should be contacted if these products are needed and not available.

For those students who cannot tolerate any milk, calcium-fortified foods (e.g., orange juice, soy milk) or calcium tablets, in a dosage or quantity that provides 200–500 mg, can serve as the source of necessary calcium. Dietary calcium is also available, in smaller amounts, from nondairy sources such as sardines, calcium-pressed tofu, and dark green leafy vegetables (e.g., collard greens, broccoli, bok choy). Exhibit 9-4 provides additional information about the calcium content of a variety of foods.

DOE and DPH studied the issue of lactose intolerance in schoolchildren and how it was addressed. A report entitled *Massachusetts School Meals and WIC: Review of Special Dietary Needs in Relation to Dairy Products* (DPH, 2000) was submitted to the Massachusetts Legislature by the Department of Education and the Department of Public Health, in collaboration with the Special Dietary Needs Review Committee (in compliance with Section 349 of Chapter 127 of the Acts of 1999). According to this report, lactose intolerance may not meet the federal criteria for a disability or medical condition under which special diets must be accommodated by schools, unless a “recognized medical authority” provides a written order or “diet prescription,” complete with documentation that the condition limits a major life activity. “For students without a physician's order who may not tolerate — or simply may not prefer — milk or dairy products,” the report states, “schools may, but are not required to, offer alternative products such as lactose-reduced milk or calcium-fortified orange juice.” Some recommendations from this report about ways that schools might voluntarily accommodate such students are included in the section below on What Schools Can Do.

A downloadable, reproducible fact sheet, *Lactose Intolerance: Know the Facts,* is available from the Massachusetts Health Promotion Clearinghouse at http://www.maclearinghouse.com/PDFs/Osteo/OsteoLactoseIntolerance.pdf. Information is also available from the National Digestive Diseases Information Clearinghouse at http://digestive.niddk.nih.gov/ddiseases/pubs/lactoseintolerance_ez.

What Schools Can Do:

- Encourage availability and consumption of fermented lactose products, such as cheese, yogurt, and buttermilk, to supply calcium and vitamins A and D.
- Identify foods offered in the school cafeteria that have hidden sources of lactose or dairy products, such as cream soups and baked goods.
- With permission of a primary care provider, recommend the use of lactose-free milk or a packaged lactase enzyme to aid in lactose digestion.
- Work with the school cafeteria to have Lactaid® milk offered in the school breakfast and lunch programs.
- Increase education/training of staff who interact with Child Nutrition Program participants and families about the range of low-lactose, calcium-rich foods and how to better assist participants in accessing alternatives.
- Increase communication and collaboration opportunities for school nurses, health educators, and food service staff about issues of lactose intolerance, milk avoidance, and other dietary issues that may affect student health or comfort.
- Develop targeted education efforts to inform students and families about the importance of adequate calcium intake.

- Explore the role of school nurses in facilitating and obtaining “diet orders” for lactose-free meals.
- Monitor affected children for vitamin D and calcium deficiencies.
- Refer the child or adolescent for nutrition consultation and assessment (see Exhibit 9-6).

Overweight

Poor dietary practices contribute to rising rates of overweight, the primary nutrition problem affecting youth today. Currently, according to the National Center for Health Statistics in the Centers for Disease Control and Prevention, an estimated 15% of U.S. children and adolescents 6–19 years of age are considered to be overweight. This represents a doubling of the 1980 rate for children and a tripling for adolescents; NCHS reports that data suggest further increases are likely. Pediatric metabolic syndrome — a group of risk factors including insulin resistance, hypertension and other metabolic abnormalities — is present in nearly half of all severely obese children and adolescents (Weiss et al, 2004).

Although Massachusetts has the 4th lowest level of overweight among all U.S. states, nearly 53% of residents are overweight and 17% are obese. Among youth aged 6–19, 10% are overweight and 17% are at risk for becoming so.

In 2003, the Massachusetts Youth Risk Behavior Survey (YRBS) asked high-school students to report their height and weight and then calculated Body Mass Index (BMI). Among the 9th–12th graders surveyed, 14% were at risk of becoming overweight and 10% already were overweight. The criticality of the situation becomes even more evident when the data is broken out by ethnic group. Twenty percent of black students and 18% of Hispanic students were at risk for overweight, while 13% and 12% were overweight, respectively.

Some of the health consequences of childhood overweight include:

- increased risk of Type 2 diabetes, which can cause blindness, heart and kidney disease, and loss of limbs;
- elevated blood pressure, which is associated with coronary artery disease;
- sleep apnea, a disorder causing brief interruptions of breathing during sleep, which is associated with decreased learning and memory functions;
- possible exacerbation of pre-existing asthma; and
- low self esteem in some adolescents, resulting in loneliness, sadness, nervousness, and increased addictive behaviors such as cigarette smoking and alcohol consumption.

The Healthy People 2010 National Health Objectives (HHS, 2000) include reducing the prevalence of overweight among children and adolescents to no more than 5%. Overweight is determined by calculating the Body Mass Index (BMI), based on the relationship between an individual’s weight and height, and then comparing it to standard ranges that are specific for gender and age.

Children with BMI values at or above the 95th percentile of the sex-specific charts are classified as overweight, and those between the 85th and 95th percentiles are classified as at-risk for overweight. To avoid stigma, the terms *at-risk* and *overweight* are used when referring to children and youth, corresponding to *overweight* and *obese* for adults. Nevertheless, the use of *obesity* when referring to children is widely used in publications (see Chapter 5 for further discussion on Body Mass Index screening).

Efforts to treat overweight children and adolescents may lead to a cycle of weight loss attempts that further damages self esteem or contributes to the development of an eating disorder. For this reason, the authors of Healthy People 2010 recommended that weight loss interventions recognize

that overweight children may experience psychological stress and “emphasize physical activity and a properly balanced diet so that healthy growth is maintained.”

What Schools Can Do:

- Provide evidence-based, behavior-focused nutrition education across the curriculum.
- Implement a coordinated school health program that involves students, school staff, families, and community.
- Ensure that foods sold in addition to National School Lunch program meals also meet nutritional standards.
- Provide all students with lunch periods of sufficient length to enjoy eating healthy foods with friends (these lunch periods should be scheduled as near the middle of the school day as possible).
- Ensure that space is adequate to accommodate all students and provide pleasant surroundings that reflect the value of the social aspects of eating.
- Encourage students, teachers, and community volunteers to practice healthy eating and serve as role models in the school dining areas.
- Conduct BMI screening to identify students at risk for underweight or overweight and refer as needed (parents/guardians will need to be informed about the screening and the interpretation of the results).

Pregnant Adolescents

Between 1991 and 2004 there were more than 80,700 teen births in Massachusetts (National Campaign to Prevent Teen Pregnancy, 2006) and in 2000, 12,150 girls in the state, ages 15-19, became pregnant (The Alan Guttmacher Institute, 2006 updated). The school nurse has a special role in caring for the pregnant teen, because she/he may be the first health care professional to learn of the pregnancy. Referring the student for medical care is a priority. All pregnant teens should also have their dietary habits assessed and be provided with special dietary counseling. Teens should be referred to the Women, Infants, and Children (WIC) Nutrition Program for a nutrition assessment, ongoing nutrition education and counseling, and supplemental healthy foods. Thereafter, the school nurse may work with the student to ensure that her nutritional and medical needs are met.

Pregnancy at any age places great physical demands on a woman, and for a teenager there are recognized additional risks. An adolescent pregnancy can compromise the growth of both the mother and baby. Nutrient and calorie demands are greatest for girls who become pregnant soon after menarche (their first menstruation), because they are most likely to still be in a stage of rapid growth.

The nutritional status of a pregnant adolescent is closely linked to the future health of her baby. Many studies show teens to be the most poorly nourished Americans. Dieting, skipping meals, snacking, eating away from home, consuming fast foods, and trying unconventional diets are common eating behaviors. If good nutritional habits are not well established before pregnancy, it becomes difficult for them to catch up once pregnant.

Lack of proper nutrition during pregnancy can lead to iron-deficiency anemia, poor weight gain, and compromised fetal development. Studies indicate that the major nutrients most likely to be deficient in a pregnant adolescent's diet are energy (total calories), vitamins (D, E, A, B_6, folic acid, riboflavin), minerals (calcium, magnesium, iron, zinc), and fiber.

Folic acid (folate) is particularly important during early pregnancy. An adequate amount of this nutrient reduces the risk of having a baby with birth defects of the spine and spinal cord. Ideally, all

females in their childbearing years should consume at least 400 micrograms of folate daily. Once pregnant, 600 micrograms is needed.

A pregnant teen generally needs to consume 300 calories beyond her typical intake, to support the growth and development of the baby and to sustain necessary changes in her own body. These calories should come from well-balanced meals, not foods that offer little nutrient value or are high in salt, sugar, or fat.

For teens of normal weight, a gain of 25–35 pounds is desirable during pregnancy. The weight-gain pattern should be monitored to ensure that energy intakes are sufficient to support a gain of about 0.4 kg (1 lb) per week in the second and third trimester. Weight gain recommendations for adolescent women who begin pregnancy either overweight or obese are usually tailored to take into account a teen's existing energy stores.

Constipation can be a problem during pregnancy but can be avoided by eating foods rich in fiber. Adequate daily fiber intake can be ensured with several servings of whole grains, beans, fruits, and vegetables. High-fiber breakfast cereals can also be helpful (see exhibits 9-1 and 9-4).

Adequate daily fluid intake is especially important for pregnant teens; at least 8–10 cups of water are recommended. Water is a better choice than soda or other high-calorie, low-nutrient beverages, which may cause excess weight gain without providing any additional benefits.

With the exception of iron, adolescents should be able to obtain all their nutrient needs from a well-balanced diet. Due to typically poor dietary habits, however, it is generally recommended that they take a prenatal multivitamin/mineral supplement. If dairy intake is insufficient, a calcium supplement may also be recommended, but it is important to note that iron and calcium supplements should not be taken together, because calcium will interfere with the absorption of iron. Teens should be cautioned against taking any vitamin supplements without consulting a doctor. Some vitamins can be harmful if taken in excess amounts. For example, excess intake of vitamin A has been shown to increase the risks of certain birth defects. (Exhibit 9-8 shows amounts of key nutrients recommended for pregnant adolescents.)

Drug and alcohol use, including cigarette smoking, is an additional concern during pregnancy. No amount of any of these substances is safe during pregnancy, and their abuse increases the risk of premature birth and other complications. Special attention must be paid to providing pregnant teens with the services and support necessary to prevent and treat dependencies on drugs, alcohol, and tobacco. Post delivery, teens will need additional support to remain drug- and tobacco-free.

What Schools Can Do:

- Make possible continued access to school services during pregnancy.
- Provide credit for participating in pregnancy and parenting courses, which include nutrition education and information about infant development and care.
- Facilitate access to medical care and nutritional services.
- Refer pregnant adolescents to community nutrition resources, including the WIC and Food Stamp programs, as needed.
- Develop support groups for pregnant and parenting teens in an environment that is supportive and nonjudgmental.
- Help teen parents identify child care resources, or start a child care program in the school.

Special Health Care Needs (Other than food allergies and lactose intolerance)

Children and adolescents with "special health care needs" comprise 10%–20% of the youth population (see Chapter 7). This terminology describes a variety of disabilities and chronic illnesses including:

- neurological disorders, such as cerebral palsy;
- congenital anomalies, such as a cleft palate;
- metabolic disorders, such as diabetes mellitus;
- infectious diseases, such as HIV/AIDS;
- chronic diseases, such as cancer, cystic fibrosis, and asthma; and
- gastrointestinal disorders, such as Crohn's disease and celiac sprue.

Common nutritional concerns associated with special health care needs include inadequate intake of calories and nutrients leading to malnutrition, poor growth and short stature, dental problems, anemia, and constipation. Many disabilities and illnesses are linked to a delay in the maturation of feeding skills, leading to an increased risk of inadequate dietary intake. Alternatively, overweight can result from conditions associated with limited physical mobility or exercise and/or side effects of certain drug therapies, such as chronic steroid use. Malnutrition can adversely affect a child's ability to learn and also her or his resistance to stress and disease. Early assessment (see Exhibit 9-6) of nutritional status, followed by appropriate nutrition intervention and monitoring, can prevent or minimize these conditions.

The federal Individuals with Disabilities Education Act (IDEA) requires that persons with special health care needs be integrated into the regular school environment, including the school lunch and breakfast programs. Federal law and the regulations for the National School Lunch Program and the School Breakfast Program require schools to make accommodations for children who are unable to eat the school meal as prepared because of a disability. School nurses can incorporate appropriate modifications or substitutions into the school lunches and/or breakfasts to accommodate their special dietary needs, ensure that nourishing meals are provided, and help to make mealtime a pleasant experience.

In order to make substitutions for items in reimbursable meals, the school must have on file a written statement signed by a licensed physician indicating the child’s disability, what foods must be omitted from the diet, and what foods must be substituted. Schools may, at their option, make substitutions for persons with special needs that do not meet the definition of disability under federal law. In these instances, the school must have a written statement signed by a recognized medical authority (e.g., nurse, physician’s assistant) indicating what foods should be substituted.

The purpose of requiring a written statement is twofold. First, it ensures that the nutrition integrity of the school meal will not be compromised by the substitution. More importantly, it ensures that decisions about specific food substitutes are made by persons who are highly qualified to prescribe them. Most children with special health care needs are under the care of a physician and dietitian who may be available to the family, child, school nurse, and food service personnel to discuss care and dietary guidelines. **Note:** The school nurse should document any dietary adjustments on the Individual Health Care Plan. (See Chapter 7 for further discussion of Individualized Health Plans.)

What Schools Can Do:

- Encourage children and teens with special health care needs to participate in physical activity programs within their ability.
- Work with a student’s nutritionist to develop individualized meal and supplementation plans to encourage weight gain in children with poor growth or with chronic illnesses, such as HIV/AIDS.

- Be familiar with food and drug interactions and related side effects that determine the timing of administration of a child's medications (see Chapter 6 for discussion of medication administration in the school setting).
- Review issues of constipation or diarrhea, associated with a child's special needs, with the family and physician or nutritionist, so that bowel habits and diet can be managed properly in the school setting.
- Monitor special diets associated with certain inborn errors of metabolism and other metabolic disorders, such as phenylketonuria (PKU) or diabetes, and ensure that necessary changes in the school food service menu are made, if appropriate.

Student Athletes

Rigorous athletic training may demand caloric intake beyond what is necessary to support normal growth and the physical maturation associated with the pubertal growth spurt, but this does not necessitate the consumption of specialty sports nutrition products such as sports bars, gels, supplements, and protein powders. The most appropriate diet for teen athletes is generally one prescribed by the Dietary Guidelines for Americans (HHS & USDA, 2005) that includes sufficient fluid, calories, and protein to meet the body's increased demands.

Adequate fluid intake during exercise is vital for effective energy metabolism, body cooling, and overall performance. Because thirst is not an adequate indicator of the body's hydration status, athletes should be encouraged to follow the following guidelines during intense activity:

- Drink 16 ounces of water, both 1–2 hours and 15 minutes prior to the event.
- Drink 4–8 ounces of water after every 15–20 minutes of intense exercise.
- For events lasting more than 60 minutes, drink sports drinks containing 4%–8% carbohydrates (or unsweetened juice diluted with an equal amount of water) — these help to conserve glycogen stores and replace lost electrolytes.

The amount of additional energy needed by adolescent athletes depends on the intensity, duration, and specific type of exercise (see Chapter 10). Most require an additional 500–1,500 calories per day; a child or teen's appropriate growth, body weight, and appetite can determine adequacy of energy intake. Carbohydrates are the body's preferred source of energy during exercise and are most healthfully obtained by consuming complex carbohydrates (such as whole grains), fruits, vegetables, and low-fat dairy products. A light meal rich in complex carbohydrates consumed 3–4 hours prior to a game or event will help to prevent hunger, provide energy, delay gastric emptying, and reduce respiratory and cardiac stress. After exercise, carbohydrate-rich foods should be consumed within 2 hours, to replenish muscle and liver glycogen stores.

While intense participation in athletics or dance may increase the body's need for protein, most children and teens consume far more protein than their bodies require. If healthy, balanced dietary habits are in place, protein supplements are unnecessary. High-protein foods typically consumed in a healthy diet include red meat, poultry, fish, cheese, milk, tofu, eggs, dried peas and beans, nuts, and peanut butter. Excessive protein consumption (including the use of protein or amino acid supplements) can lead to dehydration, renal stress, and excessive excretion of calcium, as well as unwarranted calorie consumption.

Young athletes who participate in contact sports, weight lifting, heavy weight wrestling, and long-distance cold water swimming may attempt to enhance their sports performance by increasing their body weight. These students should be guided to increase their caloric intake in a manner consistent with healthy dietary recommendations, without adding foods that contribute significant amounts of saturated fat or cholesterol.

Rather than consuming more calories, some athletes may limit food intake to the point of undernutrition, in an effort to achieve "the competitive edge" or to conform to the image of the ideal athlete. This may occur in sports such as wrestling, gymnastics, figure skating, or dance. When undernutrition is coupled with intensive training, significant risk to proper growth and development can occur (see also Chapter 10). Short-term effects may include chronic fatigue, hypoglycemia, and increased incidence of illness and heat exhaustion. Sports that encourage low body fat or a lean physique can place adolescents at increased risk for long-term conditions such as undernutrition and eating disorders.

In young women, the long-term effects of limiting calories combined with intense athletic practice may include delayed menarche and amenorrhea (ceasing of menstrual period), which can impair skeletal growth and result in an increased risk of scoliosis, stress fractures, loss of potential stature, and osteoporosis later in life. These adolescent females should be referred to a primary care provider for dietary counseling. A change in the quality and quantity of the diet is a worthwhile first step for the amenorrheic athlete and should be initiated prior to the use of hormone therapy.

An additional nutritional concern of student athletes is adequate consumption of dietary iron. The best sources of iron are lean red meats, iron-fortified cereals and other grains, and green, leafy vegetables. If insufficient iron is consumed, adolescents can develop "sports" anemia, characterized by depressed hemoglobin and a reduction in oxygen-carrying capacity.

Iron deficiency anemia may occur in males during periods of rapid growth, but adolescent female athletes (especially black females) are at greater risk. It is recommended that female long-distance athletes (e.g., runners, swimmers) be screened. If a transient iron deficiency goes unchecked, continued stress in a young, growing athlete can lead to a chronic form of anemia and may cause long-term health problems.

What Schools Can Do:

- Offer appropriate nutrition information, education, and counseling for students involved in competitive athletics.
- Provide nutrition information, education, and training to coaches.
- Model and recommend proper pre-game and training dietary practices.
- Screen adolescent athletes for rapid or detrimental changes in body weight, inappropriate supplement or steroid use/abuse, unhealthy strict eating practices, and eating disorders.
- Monitor athletes for signs of dehydration during participation in school sporting events.
- Refer student athletes with nutritional concerns to a sports nutritionist or primary care provider.

SAMPLE POLICIES, GUIDELINES, AND TOOLS

Model Wellness Policies

A working group convened by The National Alliance for Nutrition and Activity (NANA) has developed a comprehensive set of Model Local School Wellness Policies on Nutrition and Physical Activity, to assist local school districts as they write and implement wellness policies and in accordance with the Child Nutrition and WIC Reauthorization Act of 2004. Sixty health, nutrition, physical activity, and education organizations assisted with or supported the development of these policies, which are based on nutrition science, public health research, and best practices. The model policies are available at http://www.schoolwellnesspolicies.org. Also see Exhibit 9-9 for Answers to Common Nutrition-Related Questions.

The Massachusetts Department of Education, through a Team Nutrition grant from the U.S. Department of Agriculture, has developed the *Wellness Solutions* website — http://www.johnstalkerinstitute.org/wellness — to assist districts in the development of wellness policies. An interactive needs assessment tool, *Students Taking Charge,* developed by MA Action for Healthy Kids is also available on the website. The School Nutrition Association has also developed local wellness policy recommendations to assist schools. These recommendations, sample policies developed by school districts from around the country, and additional resources are available at http://www.schoolnutrition.org/Index.aspx?id=1075. A sample local wellness policy developed by the SNA may be found at http://www.schoolnutrition.org/uploadedFiles/SchoolNutrition.org/Child_Nutrition/Local_School_Wellness_Policies/SNALocalWellnessPolicyGuidelinesFinal.pdf.

As noted previously, USDA's Team Nutrition's website (http://www.teamnutrition.gov) offers practical information about how to establish a school wellness policy. Items available on the site include: policy requirements, basic steps, sample policies, and links to additional resources from other agencies and organizations. USDA's Food and Nutrition Service will continue to work with Health and Human Service's Division of Adolescent and School Health (DASH) of the Centers for Disease Control (CDC) and the Department of Education's Office of Safe and Drug Free Schools, to compile information for this site.

Assessment Tools

Resources such as the *Changing the Scene* (CTS) tool kit from the USDA's Food & Nutrition Service (FNS) and the CDC's *School Health Index* (SHI) are available to help schools assess and improve the school nutrition and physical activity environment.

The CTS includes a variety of tools for use at the local level to raise awareness and address school environment issues that influence students' eating and physical activity practices. DOE employs the CTS action kit as part of a training model to assist school teams in making changes to improve their nutrition environment. For more information on CTS or to order the kit, visit the Team Nutrition Home Page at http://www.fns.usda.gov/tn.

The CDC's School Health Index offers a means for schools to assess the strengths and weaknesses of their policies and programs for promoting health and safety through physical activity, healthy eating, a tobacco-free lifestyle, and a wide range of safety-related behaviors. Using this team-focused assessment — which involves teachers, parents/guardians, students, health professionals, and the community — will facilitate development of an action plan for improvement of student health and safety. The assessment includes nutrition-specific score cards for elementary and secondary (middle/high) school, which are available on the School Health Index site. For more information, visit http://apps.nccd.cdc.gov/shi/Default.aspx.

Guidelines on A La Carte Foods

As noted earlier in this chapter, Mass AFHK has established recommended standards for a la carte foods and beverages in the school environment in the *Massachusetts A La Carte Food & Beverage Standards to Promote a Healthier School Environment* (Mass AFHK, 2004). Guidelines contained in that document are shown below. The guidelines are reviewed and updated based on scientific research and food product availability.

Elementary School Guidelines (K–5)

Recommendations Regarding A La Carte or Competitive Foods:

- Eliminate, during the school day, foods that are sold outside of the school meals program that do not meet a la carte standards (the school day begins with the arrival of the first child at school and ends after the last scheduled instructional period).
- If the school offers a morning or afternoon break/snack, individual items sold should meet the standards for a la carte foods (the school snack or break should occur at least 1.5 hours before the lunch meal).

Rationale:

- The school environment should model a healthy lifestyle from the cafeteria to the classroom. At young ages, children should be given the opportunity to learn healthy eating practices without being influenced by unhealthy food options.

Secondary School Guidelines

Recommendations Regarding Competitive Beverages (Soft Drinks and Sports Drinks):

- Phase out the sale of soft drinks and sports drinks anywhere on the school campus, from the beginning of the school day to the end of the last instructional period.
- Phase in healthier options like water or flavored water, without added sugar, artificial sweeteners, or caffeine.
- Phase in juice, low-fat milk, and flavored milk.
- Work with vending suppliers to transition to healthier vending choices.
- Strive to offer beverage portions in sizes no larger than 12 oz. (except water and milk).
- Transition to smaller portion sizes, as products become available.

Rationale:

- Many soft and sports drinks are high in calories. Some are fortified with unnecessary and potentially harmful additives that children do not need at any time. They should not be allowed on the school campus at any time.
- Sports drinks are only recommended for times of vigorous physical activity that last 60–90 minutes (Nancy Clark's Sports Nutrition Guidebook, 2003).
- Diet drinks, while not a source of calories, should be excluded, as they may displace consumption of healthier beverages.
- Potential health problems associated with high intake of sweetened drinks are: (a) overweight or obesity, attributable to additional calories in the diet; (b) displacement of milk consumption, resulting in calcium deficiency with an attendant risk of osteoporosis and fractures; and (c) dental caries and potential enamel erosion (American Academy of Pediatrics Policy Statement on Soft Drinks in Schools, 2004).

Recommendations Regarding Grains:

- Total Fat: No more than 30% of total calories from fat, or 7 grams maximum per serving;
- Saturated Fat and Trans Fat: No more than 10% of total calories from saturated and/or trans fat, or 2 grams maximum per serving;
- Total Carbohydrate: No more than 30 grams of total carbohydrate per serving (includes natural and added sugar); and
- Portion Size — strive for a small portion of no more than:
  - Chips, crackers, popcorn = 1.25 oz.;
  - Cookies, cereal bars = 2 oz.; or
  - Bakery items (e.g., pastries, muffins) = 3 oz.

Rationale:

- The Dietary Guidelines for Americans encourage consumption of a variety of grains daily, especially whole grains.
- Whole grains have at least 1 gram of fiber per serving.
- A moderate fiber food has 2–4 grams of fiber per serving (AAP).
- A high-fiber food has >5 grams of fiber per serving (AAP).

Recommendations Regarding Fruits and Vegetables:

- Make "quality" fruits and vegetables available at any place a la carte foods are sold. Examples for vending machines include dried fruit and for a la carte lines and school stores include fresh fruit, like pineapple slices or melon cubes, and fresh vegetables, like baby carrots.
- Quality = fruits and vegetables that are fresh, frozen, dried, or canned without added fat, sugar, or excessive sodium. Serve quality fruits and vegetables instead of fruit "leather" and French fries**.**
- Total Fat: No more than 30% of total calories from fat, or 7 grams maximum per serving. Phase out fryers over the next 2 years.
- Saturated Fat and Trans Fat: No more than 10% of total calories from saturated and/or trans fat, or 2 grams maximum per serving.
- Total Carbohydrate: No more than 30 grams of total carbohydrate per serving (includes natural and added sugar).
- Portion Size: Strive to meet USDA portions: ½ cup minimum.

Rationale:

- The Dietary Guidelines for Americans encourage consumption of a variety of fruits and vegetables daily — current recommendations are 5–9 servings per day.
- As suggested by the Dietary Guidelines and the National Cancer Institute's 5 A Day Program, fruits and vegetables provide essential vitamins, minerals, fiber, and other substances that may protect against many chronic diseases.

Recommendations Regarding Juice:

- Composition: 100% fruit and/or vegetable juice will be the only juice or juice-type beverage that is allowed on the school campus (see competitive beverage guidelines).
- Portion Size: Strive to serve no more than 12 oz.

Rationale:

- The sale of fruit juice drinks should be eliminated, because they provide little nutritional value and usually replace more healthful options.

Recommendations Regarding Dairy (Milk, Yogurt, and Cheese):

- Serve low-fat dairy products (skim and 1% milk, low-fat yogurt, and low-fat cheeses) and phase out whole milk over several months.
- Total Fat: No more than 30% of total calories from fat, or 7 grams maximum per serving.
- Saturated Fat and Trans Fat: No more than 10% of total calories from saturated and/or trans fat, or 2 grams maximum per serving.
- Total Carbohydrate: No more than 32 grams total carbohydrate per 8 oz. serving of skim or 1% flavored milks. This 4g/oz of total carbohydrate includes lactose (natural milk sugar) and any added sugar.
- An 8–12 oz. serving of milk (ideally in a variety of low-fat flavors) is the ultimate goal for serving sizes, in plastic, resealable containers.

- Maximum Portion Size:
    - Yogurt: 8 oz.
    - Milk: 16 oz.
    - Ice cream: 3 oz.
    - Cheese: 2 oz.

Rationale:

- Low calcium intake is one of the most significant nutrient deficiencies identified in Healthy People 2010. Milk and milk products are high in nutritional value and provide calcium, protein, and vitamin D for bone growth and development.
- The American Academy of Pediatrics (AAP) Policy Statement on Calcium Requirements of Infants, Children, and Adolescents (AAP, 1999) recognizes children's low calcium intake. The AAP urges pediatricians to recommend the daily consumption of milk, cheese, yogurt, and other calcium-rich foods for growing children and adolescents, to help build bone mass.

Recommendations Regarding Meat, Beans, and Nuts:

- Total Fat: No more than 30% of total calories from fat or 7 grams maximum per serving, with the exception of nuts, seeds, and nonhydrogenated nut butters served with the portion guidelines below.
- Saturated Fat and Trans Fat: No more than 10% of total calories from saturated and/or trans fat or 2 grams maximum per serving.
- Portion Size: Entrée items or other protein sources — no larger than the maximum requirements for age/grade groups under the USDA meal pattern:
    - Trail mix, nuts, seeds and jerky — no larger than 1.25 oz.
    - Nonhydrogenated nut butters — no more than 4 Tbsp.

Rationale:

- Meats, beans, and nuts offer protein and other valuable nutrients such as zinc, iron, and B vitamins.
- Protein supplies amino acids that build, repair, and maintain body tissues.
- Nonhydrogenated nut butters like all-natural peanut butter or almond butter will have no trans fats and minimal saturated fat and will provide healthy unsaturated fats.

Guidelines for Special Events

Schools are encouraged to extend the nutrition standards to after-school events and fundraisers. In lieu of candy sales during school hours, students and faculty are encouraged to coordinate fundraisers with the school food service. The school food service director can assist those planning food-oriented fund-raising events, such as community suppers, pancake breakfasts, and bake sales. Such collaboration results in successful fundraising, positive public relations for the school food service, and a strong sense of school-community team work. Use of nonfood items (e.g., wrapping paper and other paper goods, plants, raffles, gift certificates) can help the school raise funds without providing or endorsing foods which do not promote healthy eating habits.

SUMMARY

Recognizing the association between nutrition and educational achievement, schools have traditionally addressed issues of hunger through school breakfast and lunch programs. Today, however, hunger is not the only food-related threat to the well-being and educational achievement of students. Across the Commonwealth and the nation, schools and communities are grappling

with a range of problems caused by unhealthy eating habits and sedentary lifestyles. Chief among these problems is an epidemic of overweight and associated health conditions in the school-age population. Because healthy eating habits begin at an early age, schools are uniquely positioned to make a positive impact, so nutrition education is a critical strategy. In addition, schools, like their community partners, will need to address their nutritional environments, confronting such challenges as foods offered in vending machines, through a la carte menus, and at special events. Schools, families, students, communities, and health care providers will need to join forces to develop and implement policies and practices that can begin to curb this epidemic. Their mutual goal should be the growth of this generation of students into healthy adults.

RESOURCES: CURRICULA AND EDUCATIONAL MATERIALS

4girls Health
Website: http://www.4girls.gov
Developed by the Office on Women's Health in the Department of Health and Human Services, promotes healthy, positive behaviors in girls between the ages of 10 and 16. Contains a section on nutrition.

BAM! Body and Mind
Website: http://www.bam.gov
Kid-friendly topics and an interactive aid for teachers from the CDC.

Bodywise
Website: http://www.girlpower.gov/girlarea/bodywise/Index.htm
GirlPower! is a national public education campaign sponsored by the U.S. Department of Health and Human Services to help encourage and motivate girls aged 9–13 to make the most of their lives. This portion of the site is devoted to body image, eating right, understanding eating disorders, fitness, and so forth.

Dole 5-A-Day — Just for Kids
Website: http://www.dole5aday.com/Kids/K_Index.jsp
Kids section of award-winning site that educates kids, parents/guardians, and teachers about the benefits of eating fruits and vegetables.

Eat Well and Keep Moving
Website: http://www.hsph.harvard.edu/nutritionsource/EWKM.html
An interdisciplinary, elementary-school program from the Harvard School of Public Health, Department of Nutrition. The program is designed to promote healthful eating and physical activity in schools, homes, and communities. Six interlinked components — classroom education, food services, physical education, staff wellness, family involvement, and a schoolwide promotional campaign — work together to create a supportive learning environment. The program has been published by Human Kinetics, Inc. and is available nationally via http://www.humankinetics.com. Sample lesson plans in PDF format may be viewed at the site address shown above.

Florida Citrus Land — For Kids
Website: http://www.floridajuice.com/floridacitrus/kids
Site created by the Florida Department of Citrus with games, quizzes, coloring sheets, and Food Pyramid information.

Alliance for a Healthier Generation
Website: http://www.healthiergeneration.org/kids
The Alliance, a joint effort of the American Heart Association and the William J. Clinton Foundation, operates an online, interactive website for children aged 9–13. The website uses games, surveys, cartoons, and other entertaining features to encourage good nutrition and increased physical activity.

GO GIRLS!™ (Giving Our Girls Inspiration and Resources for Lasting Self-esteem)
Website: http://www.goldinc.com/gogirls/summary.htm
A high-school prevention program and curriculum, created by the National Eating Disorders Association, which involves high-school girls working together to promote responsible advertising and to advocate for positive body images of youth by the media and major retailers. Projects in the semester-long GO GIRLS! program include making presentations to executives at retail corporations, writing letters to national advertisers, participating in television and radio interviews and creating peer awareness campaigns in local high schools.

Healthy Body Image
A curriculum written by Kathy Kater and published by the National Eating Disorders Association. This curriculum, intended for grades 4–6, helps educators empower students to form a foundation for acceptance of their bodies, based on recognition of what they can and cannot control with regard to body size and shape. Through stories and activities, students are prepared and empowered to resist unhealthy and

unrealistic cultural pressures regarding body image, and are inspired to develop a practical understanding of healthy eating.

Healthy Choices
Website: http://mass.gov/dph/fch/nutrition/health_choice.htm
Healthy Choices is a nutrition and physical activity program for middle schools. The program is a collaborative project of the DPH and the Jump Up and Go! program at Blue Cross Blue Shield of Massachusetts.

Healthy K.I.D.S.
Website: http://www.childrenshealthfund.org/hk.html
Developed by clinicians from The Children's Health Fund's National Children's Health Project Network, the Healthy K.I.D.S. program consists of English and Spanish newsletters which provide simple, accurate, and culturally relevant information on nutrition and fitness for middle-school students.

High Five!
Website: http://www.oldwayspt.org
A professionally designed curriculum of classroom lessons from Oldways Preservation Trust. This site teaches children about healthy eating, simple cooking, and cultural models for meals.

Jump Up and Go
Website: http://www.jumpupandgo.com/
The Jump Up and Go!SM initiative was created and launched in 1998 by Blue Cross Blue Shield of Massachusetts (BCBSMA). The initiative provides grants to support physical activity programs for young people throughout the Commonwealth. Through partnerships with organizations such as CBS4 and Shaw's/Star Markets, the program promotes a family approach to healthful eating and fitness with an informational website, brochures, and public affairs messages.

Just for Kids
Website: http://www.usapears.com
Section of the Pear Bureau Northwest site that offers nutrition information for younger kids, through games and stories, coloring sheets, and so forth.

Kidnetic.com
Website: http://www.kidnetic.com
Kidnetic.com is a healthy eating and active living website that encourages kids (aged 9–12) and their families to begin the process of behavior change toward healthy lifestyles. Kidnetic.com is the first component of ACTIVATE, an educational outreach program designed to help prevent kids from becoming significantly overweight and to reduce their risk of suffering from overweight-related chronic diseases as adults. ACTIVATE is developed in partnership by: American Academy of Family Physicians, American College of Sports Medicine, American Dietetic Association, International Food Information Council Foundation, International Life Sciences Institute Center for Health Promotion, and National Recreation and Park Association.

Milk Matters
Website: http://www.nichd.nih.gov/milk
Milk Matters is a nationwide campaign, sponsored by The National Institute of Child Health and Human Development (NICHD), which is dedicated to increasing calcium consumption among America's children and teens. The campaign focuses on educating people about the importance of calcium for building strong and healthy bones.

MyPyramid
Website: http://www.mypyramid.gov
Interactive online tool to develop a personal MyPyramid plan based on the user's age, sex, and activity level. Additional online tools that translate the principles of the 2005 Dietary Guidelines for Americans and other nutrition standards developed by the U.S. Departments of Agriculture and Health and Human Services are also available.

New England Dairy and Food Council
Website: http://www.newenglanddairycouncil.org/
Provides specific information for educators on classroom activities, recipes, ideas, DINE newsletter, and educator's links.

Nutrition Cafe
Website: http://exhibits.pacsci.org/nutrition/
Site created by the Pacific Science Center and Washington State Dairy Council. Includes interactive nutrition education activities for kids.

Planet Health: An Interdisciplinary Curriculum for Teaching Middle School Nutrition and Physical Activity
Website: http://www.humankinetics.com
Developed by the Harvard School of Public Health and implemented in field trials by teachers and kids. Four simple health themes were integrated into physical education, language arts, math, science, and social studies classes, in keeping with Massachusetts curriculum standards.

Powerful Bones, Powerful Girls
Website: http://www.cdc.gov/powerfulbones
Fun website to help girls learn how to be powerful and take care of their bones. Produced as part of the National Bone Health Campaign, a joint effort of The Department of Health and Human Services' Office on Women's Health, the CDC, and the National Osteoporosis Foundation.

School Lunch Plus
Website: http://www.oldwayspt.org
An Internet-based program from Oldways Preservation Trust providing information and resources for school-age kids, their parents/guardians, and educators to encourage wise, school-day eating and drinking. Covers lunch, in-school and after-school snacks, and day-long beverages. Includes tips, facts, and suggestions about take-to-school foods and drinks.

TAKE 10
Website: http://www.take10.net
Take 10 is a research-based curriculum tool from the International Life Sciences Institute (ILSI) Center for Health Promotion in Atlanta. It was developed to teach classroom-based physical activity and nutrition education from kindergarten to fifth grade students. Developed by teachers, these materials contain safe and age-appropriate 10-minute physical activities that can be integrated into language arts, mathematics, science, social studies, and general health.

Team Nutrition
USDA Food and Nutrition Service
Website: http://www.teamnutrition.usda.gov
The Team Nutrition site provides links to curricula and activities for elementary- and middle-school nutrition education:

- **Elementary In-School Curriculum (*Food and Me, Food Time,* and *Food Works*)**
  These 3 kits provide the core nutrition education instruction for PreK through grade 5 children. The objective is to educate children about the importance of their food choices and the basis for making choices in order to change eating behaviors.
- **Making It Happen**
  Developed from success stories of schools which incorporated changes to the school nutrition environment through the guidance provided in the *Changing The Scene: Improving the School Nutrition Environment* toolkit.
- ***yourSELF* Middle-School Education Kit**
  This program was developed to help students in grades 6–9 understand how their decisions about eating patterns and physical activity today can affect the way they grow as well as their overall health for years to come. The yourSELF kit helps teachers introduce new information to students, reinforce what they already know, and develop the "how-to" skills they need to make appropriate eating and physical activity choices.

- **Youth Activities**
  These nutrition education activities, for use with grades 3–6, have been adapted from The Community Nutrition Action Kit as a result of a collaborative effort within the U.S. Department of Agriculture that included the Food and Nutrition Service, Cooperative State Research, Education and Extension Service, and the Center for Nutrition Policy and Promotion. The Community Nutrition Action Kit itself also is available for download at http://www.fns.usda.gov/tn/Resources/cnak.html.

TeensHealth
Website: http://www.kidshealth.org/teen/index.html
Part of the kidshealth.org site, TeensHealth is a project of the Nemours Foundation, providing answers and advice on health for teens, including articles; games; and Q & A's on food, fitness, and body image.

VERB. It's what you do.
Website: http://www.verbnow.com
This is a fun website for tweens with games, quizzes, and facts on physical activity.

We Can! (Ways to Enhance Children's Activity & Nutrition)
Website: http://wecan.nhlbi.nih.gov
We Can! is national program designed as a one-stop resource for parents/guardians and caregivers interested in practical tools to help children 8–13 years old stay at a healthy weight. Tips and fun activities focus on 3 critical behaviors: improved food choices, increased physical activity, and reduced screen time. The program is a collaboration of 4 Institutes of the National Institutes of Health (NIH): the National Heart, Lung, and Blood Institute (NHLBI); the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); the National Institute of Child Health and Human Development (NICHD); and the National Cancer Institute (NCI). Information is also available at 866-35-WE-CAN (866-359-3226).

Why Milk?
Website: http://www.whymilk.com
Informational site designed to appeal to teens.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS (GENERAL)

Blue Cross Blue Shield of Massachusetts (BCBSMA)
Community Relations Department
Landmark Center
401 Park Drive
Boston, MA 02215
Phone: 617-246-4845
BCBMA created and launched the The Jump Up and Go!SM initiative, a program designed to encourage young people to learn about the importance of proper nutrition and regular exercise. This initiative now funds enhanced Healthy Choices initiatives in middle schools across the state.

The Friedman School of Nutrition Science and Policy
Tufts University
150 Harrison Ave.
Boston, MA 02111
Website: http://nutrition.tufts.edu
Established in 1981, The Friedman School is the only graduate and professional school of nutrition in North America.

- **Center on Hunger, Poverty and Nutrition Policy (CHPNP)**
  Website: http://nutrition.tufts.edu/consumer/hunger/
- **The Center on Nutrition Communication**
  Website: http://nutcomm.tufts.edu/

Dedicated to the dissemination of accurate and timely nutrition information across a range of audiences using traditional and innovative technologies, to research activities that will improve our ability to influence human behavior and promote healthy lifestyles, and to the education of nutrition and health professionals to communicate their knowledge effectively.

John C. Stalker Institute of Food and Nutrition
Framingham State College
P.O. Box 9101, 100 State Street
Framingham, MA 01701-9101
Phone: 508-626-4756
Fax: 508-626-4018
E-mail: jsi@frc.mass.edu
Website: http://www.johnstalkerinstitute.org
The mission of the John C. Stalker Institute is to provide programs on nutrition and health promotion, in conjunction with the comprehensive school health model, using an interdisciplinary, collaborative, team approach. The Institute, which is funded by DOE, offers conferences, programs, courses, and a lending library for teachers, school food service personnel, health educators, child nutrition professionals, and other members of the school community. It also hosts a website designed to help school communities develop and implement wellness policies. (For more information, see listing for The Wellness Solution).

Massachusetts 5 A Day Coalition
The Massachusetts 5 A Day Coalition is a partnership of public and private organizations that works to increase consumption of fruits and vegetables for better health and increase access to affordable and appealing fruits and vegetables for all Massachusetts residents. Public organizations represented include DPH, DOE, the Massachusetts Medical Society, and Boston Public Schools.

Publication: *5 A Day Resource Guide* **—** The directory was compiled to help promote fruit and vegetable consumption in Massachusetts. Over 100 organizations are represented in the directory, and they have been selected based on the following criteria: those that are part of the 5 A Day Coalition in Massachusetts and whose activities support the 5 A Day message, and other agencies/organizations whose mission supports increasing fruit and vegetable consumption as part of a healthy lifestyle. The Guide is available online at http://www.maclearinghouse.com/PDFs/Health&Wellness/5ADayDirectory.pdf

Massachusetts Action for Healthy Kids (MAHK) Team
Phone: 617-734-6750
Website: http://www.actionforhealthykids.org/AFHK/team_center/team_public_view.php?team=MA
AFHK is a nationwide initiative dedicated to creating healthy school environments by advancing sound nutrition and physical activity practices in schools across the country. AFHK is composed of 51 state teams and a national coordinating and resource group. Guidance is provided by more than 40 national education, fitness, health, and nutrition organizations and government agencies. AFHK operates under the umbrella of "Healthy Schools, Inc.," a nonprofit, nonmember organization established to further the goals of the Healthy Schools Summit.

Massachusetts Coordinated School Health Program (CSHP)
Phone: 617- 624-5537 (DPH) or 781-338-3603 (DOE)
Websites: http://www.mass.gov/dph/fch/schoolhealth/cshp.htm and
http://www.doe.mass.edu/cnp/hprograms/cshp/
A CDC-funded collaborative effort between the Massachusetts Department of Education (DOE) and the Massachusetts Department of Public Health (DPH) to address priority youth risk behaviors in a systematic way, utilizing the coordinated school health program model. CSHP is an approach to school health that improves students' health and their capacity to learn through the support of families, schools, and communities all working together. At its very core, CSHP is about keeping students healthy over time, reinforcing positive healthy behaviors throughout the school day, and making it clear that good health and learning go hand in hand. CSHP offers students the information and skills they will need to make good choices in life.

Nutrition, Health and Safety
350 Main Street
Malden, MA 02148
Phone: 781-338-6480
Fax: 781-338-3399
Website: http://www.doe.mass.edu/cnp/

Publication: *A Guide To Healthy School Meals.* (2003). A manual for food services directors and staff that covers topics such as menu planning options, preparing foods, components and nutrient contributions, meal substitutions for children with special needs, nutrition education, menu promotion, food sanitation, and food safety.

Massachusetts Department of Public Health
250 Washington Street
Boston, MA 02108

- **Nutrition Division**
  Phone: 617-624-6100
  Fax: 617-624-6179
  Website: http://www.mass.gov/dph/fch/nd.htm
  Programs within the Nutrition Division include the Women, Infants, and Children Program (WIC); the Growth And Nutrition Program; the PKU Metabolic Foods and Formula Program; and the Office Of Nutrition. The Office of Nutrition serves as a point of contact for the Massachusetts Nutrition Board (see listing below) and oversees breastfeeding promotion, folic acid, and food stamp outreach programs.
- **Nutrition and Physical Activity Unit**
  Phone: 617-624-6000
  Fax: 617-624-5075
  TTY: 617-624-5992
  Website: http://www.mass.gov/dph/fch/nutrition/about.htm
  The DPH Nutrition and Physical Activity Unit works at the national, state, and local levels to promote nutrition and physical activity policies, systems, and practices that help prevent and control chronic disease, and contribute to healthy communities. The Nutrition and Physical Activity Unit serves as a resource on nutrition and physical activity to other programs within DPH, as well as to local communities.
- **Women, Infants and Children (WIC) Nutrition Program**
  Phone: 800-WIC-1007 (800-942-1007) or 617-624-6100
  Website: http://www.mass.gov/dph/fch/wic.htm

The Massachusetts Health Promotion Clearinghouse
Phone: 800-952-6637 (accessible in English, Spanish, or Portuguese)
TTY: 617-536-5872
Website: http://www.maclearinghouse.com/index.htm
The Massachusetts Health Promotion Clearinghouse provides free health promotion materials for Massachusetts residents and health and social service providers. Funded by DPH, the Clearinghouse develops and distributes health promotion materials. Many hard copy and downloadable materials related to nutrition are available at the site. Clearinghouse materials and services are available in accordance with federal ADA (Americans with Disabilities Act) regulations. To request materials in alternative formats, call 617-536-0501 x210.

Massachusetts Nutrition Board (MNB)
Phone: 617-624-6100 (DPH Nutrition Division)
A state advisory board established in 1974, MNB provides leadership on nutrition issues affecting Massachusetts residents. The Board represents the Commonwealth's recognition of the important role of good nutrition in establishing and maintaining good health. MNB members are leaders in the field of nutrition and health, as well as influential members of their communities. The 2004 Massachusetts Nutrition Board report, "Health of the Commonwealth: Nutritional Status of Massachusetts Residents" is available on the DPH website at http://www.mass.gov/dph/fch/nutritionboard.htm

Massachusetts Public Health Association (MPHA)
434 Jamaicaway
Jamaica Plain, MA 02130
Phone: 617-524-6696
Fax: 617-524-5225
E-mail: mpha@mphaweb.org
Website: http://www.mphaweb.org
The Massachusetts Public Health Association (MPHA) is a statewide membership organization that seeks to improve the public's health; promote the establishment of health care as a human right; and secure optimal community, personal, and environmental health. In addition to its Boston office, MPHA operates offices in Lowell, Springfield, and Worcester.

MPHA is focusing its childhood overweight and overweight prevention work on policy changes in schools, on both the local and state levels. Locally, MPHA works with school districts around the state to assist them in writing and implementing policies that will ban sodas and higher-fat and higher-calorie foods from all venues that are outside the National School Breakfast and Lunch programs. As part of this effort, the MPHA has created a toolkit that can be used by communities and school districts to initiate policy changes. This toolkit, *Community Action to Change School Food Policy: An Organizing Kit,* can be found at http://www.mphaweb.org/home_food_policy_kit.pdf

New England Dairy & Food Council
Phone: 617-734-6750 (Eastern MA) or 413-743-2345 (Western and Central MA)
E-mail: info@newenglanddairycouncil.org
Website: http://www.newenglanddairycouncil.org
New England Dairy & Food Council is a nonprofit nutrition education organization staffed by registered dietitians. Its goal is to ensure that health professionals, scientists, media, and educators have a credible body of nutrition knowledge upon which to educate or base health recommendations. Resources provided include: nutrition education teaching materials, nutrition promotion materials, and other information for school food service professionals, and health fair materials.

School Nutrition Association (SNA) of Massachusetts
258 Harvard Street PMB 283
Brookline, MA 02446
Phone: 800-351-3139 or 617-734-8822
Fax: 617-734-7772
E-mail: info@schoolnutrition.info
Website: http://www.maschoolfood.org
The SNA of Massachusetts (formerly MSFSA) is a state affiliate of the School Nutrition Association (formerly ASFSA). It brings information, services, and continuing education to school food service professionals in Massachusetts.

University of Massachusetts Extension
Nutrition Education Program
203 Chenoweth Lab
University of Massachusetts
100 Holdsworth Way
Amherst, MA 01003-9282
E-mail: nepcontact@umext.umass.edu
Website: http://www.umass.edu/umext/nutrition/index.html
The University of Massachusetts Extension Nutrition Education Program provides individuals, families, and community members with the knowledge and skills to make informed choices about healthful diets, to reduce risks of foodborne illness and chronic disease, and to efficiently manage food resources that support their physiological health and economic and social well-being. As part of the Department of Nutrition within the University of Massachusetts at Amherst School of Public Health and Health Sciences, the program extends university research and teaching to Massachusetts communities.

The Wellness Solution
Website: http://www.johnstalkerinstitute.org/wellness/about.htm
An online resource for school community members to establish, implement and share effective wellness policies for their schools. Wellness Solutions for Massachusetts is a collaborative effort involving: The Massachusetts Department of Education, Nutrition Health and Safety unit; the John C. Stalker Institute of Food & Nutrition at Framingham State College; Massachusetts Action for Healthy Kids (MAHK); and USDA, Team Nutrition.

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS (GENERAL)

Action for Healthy Kids (AFHK)
4711 West Golf Road Suite 625
Skokie, IL 60076
Phone: 800-416-5136
Website: http://www.actionforhealthykids.org
See Massachusetts Action for Healthy Kids (AFHK) Team listing above for a description of this national initiative.

Alliance for a Healthier Generation
Website: http://www.healthiergeneration.org
The Alliance is a joint initiative of the William J. Clinton Foundation and the American Heart Association, formed to address the issues that contribute to childhood overweight and to inspire all young Americans to develop lifelong healthy habits. With support from the Robert Wood Johnson Foundation, the Alliance's Healthy Schools program collaborates with schools to help them create environments that foster healthy lifestyles and ultimately prevent overweight and obesity among students. (See also Resources: Curricula and Educational Materials.)

American Dietetic Association
120 South Riverside Plaza, Suite 2000
Chicago, IL 60606-6995
Phone: 800-877-1600
Website: http://www.eatright.org
Provides food and nutrition fact sheets, daily tips, and nutrition position papers for consumers across the lifespan.

American Academy of Pediatrics (AAP)
141 Northwest Point Blvd.
Elk Grove Village, IL, 60007
Phone: 847-434-4000
Website: http://www.aap.org
Contains a multitude of information on various children's health topics as well as position papers and guidance concerning primary pediatric nutrition issues.

The American Society for Nutritional Sciences (ASNS)
9650 Rockville Pike, Suite 4500
Bethesda, MD 20814
Phone: 301-634-7050
Fax: 301-634-7892
E-mail: sec@nutrition.org
Website: http://www.asns.org
ASNS is the premier research society dedicated to improving the quality of life through the science of nutrition. It publishes *The Journal of Nutrition* and operates the publication's online site: http://www.nutrition.org.

Arkansas Children's Nutrition Center (ACNC)
University of Arkansas for Medical Sciences
Little Rock, AK
Website: http://www.acnc.uams.edu/Home.htm
ACNC is one of 6 centers in the National Human Nutrition Research Centers (HNRCs) Program funded through the Agriculture Research Service (ARS) within the USDA, and only the second to focus on pediatric nutrition.

Bright Futures Project
Georgetown University
Box 571272
Washington, DC 20057-1272
Phone: 202-784-9556
E-mail: Brightfutures@ncemch.org
Website: http://www.brightfutures.org
Provides expert guidelines, and a practical developmental approach to providing health supervision, including nutrition-related assessment and care, for children and adolescents from birth through age 21.

Centers for Disease Control and Prevention (CDC)

Division of Adolescent and School Health
Website: http://www.cdc.gov/HealthyYouth
Materials:

- *Making It Happen — School Nutrition Success Stories*. Produced as a joint project of: Team Nutrition of the Food and Nutrition Service, U.S. Department of Agriculture (USDA), CDC's Division of Adolescent and School Health, Department of Health and Human Services (DHHS), and the U.S. Department of Education. The publication tells the stories of 32 schools and school districts that implemented innovative strategies to improve the nutritional quality of foods and beverages offered and sold on school campuses. Available online at http://www.cdc.gov/HealthyYouth/nutrition/Making-It-Happen/index.htm.
- *Guidelines for School Health Programs to Promote Lifelong Healthy Eating.* These guidelines identify strategies most likely to be effective in promoting lifelong healthy eating among young people. Developed by CDC in collaboration with experts from other federal agencies, state agencies, universities, voluntary organizations, and professional associations. Available online at http://www.cdc.gov/HealthyYouth/nutrition/guidelines/index.htm
- *Ten Strategies for Promoting Physical Activity, Healthy Eating, and a Tobacco-Free Lifestyle Through School Health Programs* lists actions that schools can take to support these guidelines. Available online at http://www.cdc.gov/HealthyYouth/publications/pdf/ten_strategies.pdf
- School Health Policies and Programs Study Fact Sheets (SHPPS)
  SHPPS is a national survey periodically conducted to assess school health policies and programs at the state, district, school, and classroom levels, including those related to healthy eating. Online fact sheets based on this data include: "Food and Beverages Sold Outside of the School Meal Programs", "Food Service", and "Nutrition Services."
  http://www.cdc.gov/HealthyYouth/nutrition/index.htm#2
- Youth Risk Behavior Surveillance System (YRBSS) — Dietary Behaviors
  The YRBSS monitors behaviors that contribute markedly to the leading causes of death, disability, and social problems among youth and adults in the United States. Available online at http://www.cdc.gov/HealthyYouth/nutrition/index.htm#2

National Center for Chronic Disease Prevention and Health Promotion
Division of Nutrition and Physical Activity
4770 Buford Highway, NE, MS/K-24
Atlanta GA 30341-3717
Phone: 770-488-5820
Fax: 770-488-5473 (general) or 888-232-4674 (to obtain publications by fax)
E-mail: ccdinfo@cdc.gov
Website: http://www.cdc.gov/nccdphp/dnpa

The Division of Nutrition and Physical Activity provides science-based activities for children and adults that address the role of nutrition and physical activity in health promotion and the prevention and control of chronic diseases.

School Health Index
Website: http://apps.nccd.cdc.gov/shi/Default.aspx
The *School Health Index* is a self-assessment and planning guide for schools. It enables schools to identify strengths and weaknesses of school policies and programs for promoting health and safety; develop an action plan for improving student health and safety; and involve teachers, parents/guardians, students, and the community in improving school policies, programs, and services. Healthy eating is one of the topics on which the Index focuses.

Child Care Nutrition Resource System
Website: http://www.nal.usda.gov/Childcare
This site, sponsored by the USDA, is a useful resource for anyone who works with children. Readers will find food safety materials, recipes, growth charts, a summary of cultural and food practices of religions, and more.

Children's Nutrition Research Center
Baylor College of Medicine
USDA/ARS Children's Nutrition Research Center
1100 Bates Street
Houston, TX 77030
Phone: 713-798-6767
Fax: 713-798-7098
Website: http://www.kidsnutrition.org
One of six centers in the National Human Nutrition Research Centers (HNRCs) Program funded through the Agriculture Research Service (ARS).

Dairy Council of California — Healthy Eating Made Easier
Website: http://www.dairycouncilofca.org
Information for health professionals and educators.

HealthierUS.gov
Website: http://www.healthierus.gov
A portal to governmental information resources on nutrition, as well as physical activity, prevention, and healthy choices. Sponsored by the Executive Office of the President and the Department of Health and Human Services. Both an executive summary and the complete *Dietary Guidelines* may be accessed here.

International Food Information Council (IFIC)
1100 Connecticut Avenue NW, Suite 430
Washington, DC 20036
Phone: 202-296-6540
Fax: 202-296-6547
E-mail: foodinfo@ific.org
Website: http://www.ific.org
IFIC's mission is to communicate science-based information on food safety and nutrition to health and nutrition professionals, educators, journalists, government officials, and others providing information to consumers. IFIC is supported primarily by the broad-based food, beverage, and agricultural industries.

National Alliance for Nutrition and Activity (NANA)
Website: http://www.nanacoalition.org
NANA, which is made up of more than 300 organizations, advocates national policies and programs to promote healthy eating and physical activity to help reduce the illnesses, disabilities, premature deaths, and costs caused by diet- and inactivity-related diseases such as heart disease, cancer, high blood pressure, diabetes, and overweight. Efforts include supporting effective education programs, advocating adequate funding for programs, and promoting environmental changes that help Americans eat better and be more

active. A NANA-convened working group has developed a comprehensive set of Model Local School Wellness Policies on Nutrition and Physical Activity. The model policies are available at http://www.schoolwellnesspolicies.org.

National Institute of Child Health & Human Development (NICHD) Information Resource Center
P.O. Box 3006
Rockville, MD 20847
Phone: 800-370-2943
Fax: 301-984-1473
E-mail: NICHDInformationResourceCenter@mail.nih.gov
Website: http://www.nichd.nih.gov/publications
The National Institute of Child Health and Human Development (NICHD) is part of the National Institutes of Health, the biomedical research arm of the U.S. Department of Health and Human Services. The NICHD seeks to ensure that all children have the chance to achieve their full potential for healthy and productive lives, free from disease or disability. The NICHD Information Resource Center is a one-stop source for NICHD materials.

Oldways Preservation Trust
266 Beacon Street
Boston, MA 02116
Phone: 617-421-5500
Fax: 617-421-5511
E-mail: oldways@oldwayspt.org
Website: http://www.oldwayspt.org
Oldways is a nonprofit "food issues think tank" that translates the complex details of nutrition science into "the familiar language of food." This synthesis converts high-level science into a consumer-friendly health-promotion tool for health professionals, consumers, and the food industry.

The Physicians Committee for Responsible Medicine (PCRM)
5100 Wisconsin Avenue NW, Suite 400
Washington, DC 20016
Phone: 202-686-2210
Fax: 202-686-2216
E-mail: pcrm@pcrm.org
Website: http://www.pcrm.org
PCRM is a nonprofit organization that promotes preventive medicine through healthy nutrition and has led the way for reforms of federal nutrition policies. PCRM has reviewed the National School Lunch Program on the basis of how well the program promotes healthy eating habits.

School Nutrition Association (formerly American School Food Service Association)
700 South Washington Street, Suite 300
Alexandria, VA 22314
Phone: 703-739-3900
Fax: 703-739-3915
E-mail: servicecenter@schoolnutrition.org
Website: http://www.schoolnutrition.org
School Nutrition Association strives to see that all children have access to healthful school meals and nutrition education. The primary activities of the association are: providing education and training; setting standards through certification and credentialing; gathering and transmitting regulatory, legislative, industry, nutritional, and other types of information related to school nutrition; and representing the nutritional interests of all children. Information on local school wellness policies may be found at the following location: http://www.schoolnutrition.org/Index.aspx?id=1075.

Society for Nutrition Education (SNE)
7150 Winton Drive, Suite 300
Indianapolis, IN 46268

Phone: 800-235-6690 or 317-328-4627
Fax: 317-280-8527
Website: http://www.sne.org
Provides a forum for sharing innovative strategies for nutrition education, expressing a range of views on important issues, and disseminating research findings.

Team Nutrition
3101 Park Center Drive, Room 632
Alexandria, VA 22302
Phone: 703-305-1624
Fax: 703-305-2549
Website: http://www.teamnutrition.usda.gov
Team Nutrition is an initiative of the USDA Food and Nutrition Service to support the Child Nutrition Programs through training and technical assistance for food service, nutrition education for children and their caregivers, and school and community support for healthy eating and physical activity. Team Nutrition has developed a number of resources to help foster healthy school nutrition environments:

- *Changing the Scene — Improving the School Nutrition Environment* can be used at state and local levels to educate decision makers about the role school environments play in helping students meet the Dietary Guidelines.
- *Making it Happen! School Nutrition Success Stories* includes stories from 32 schools and school districts that have improved the nutritional quality of foods and beverages offered and sold on school campuses, outside the school meals programs.
- School Wellness Policy information: An online compilation of existing resources for developing and implementing a Local Wellness Policy that promotes healthy eating and physical activity (http://www.fns.usda.gov/tn/Healthy/wellnesspolicy.html).

U.S. Department of Agriculture (USDA)
Food and Nutrition Information Center
National Agricultural Library, Room 105
10301 Baltimore Avenue
Beltsville, MD 20705-2351
Phone: 301-504-5719
Fax: 301-504-6409
TTY: 301-504-6856
E-mail: fnic@nal.usda.gov
Website: http://www.nal.usda.gov/fnic/
A staff of nutritionists is available at the e-mail address above to help answer questions, locate resources, and provide master copies of government nutrition information. The food and human nutrition materials at the National Agricultural Library consist of books, journals, and audiovisuals covering a broad range of topics. The website offers a comprehensive index of Internet food and nutrition sites, as well as many other resources.

RESOURCES: SPECIFIC TOPICS

Eating Disorders

The Alliance for Eating Disorder Awareness
P.O. Box 13155
North Palm Beach, FL 33408-3155
Phone: 866-662-1235 or 561-841-0900
Fax: 561-881-0380
E-mail: info@eatingdisorderinfo.org
Website: http://www.eatingdisorderinfo.org
Disseminates educational information to parents/guardians and caregivers about the warning signs, dangers, and consequences of anorexia, bulimia, and other related disorders.

Eating Disorder Videos
Website: http://www.eatingdisordervideos.com
Videos and DVDs that deal with eating disorders and body image. Specializes in the rare, out of print, and hard to find.

Massachusetts Eating Disorder Association (MEDA)
92 Pearl Street
Newton, MA 02458
Phone: 617-558-1881
Website: http://www.medainc.org/
MEDA is a non-profit organization dedicated to the prevention and treatment of eating disorders and disordered eating.

National Eating Disorders Association
603 Stewart Street, Suite 803
Seattle, WA 98101
Phone: 206-382-3587
Fax: 206-382-3587
E-mail: info@NationalEatingDisorders.org
Website: http://www.nationaleatingdisorders.org
Dedicated to expanding public understanding of eating disorders and promoting access to quality treatment for those affected, along with support for their families through education, advocacy, and research. Has developed 2 prevention programs and curricula: The GO GIRLS!™ program (Giving Our Girls Inspiration and Resources for Lasting Self-esteem) and The Healthy Body Image curriculum (see Resources: Curricula and Educational Materials).

Food Allergies

The Food Allergy & Anaphylaxis Network (FAAN)
11781 Lee Jackson Highway, Suite 160
Fairfax, VA 22033
Phone: 800-929-4040
Fax: 703-691-2713
E-mail: faan@foodallergy.org
Website: http://www.foodallergy.org
Operates websites for kids and teens: Food Allergy News for Kids (http://www.fankids.org) and Food Allergy News for Teens (http://www.fanteen.org).

Massachusetts Department of Education
Child Nutrition Programs
Phone: 781-338-6480
Fax: 781-338-3399
E-mail: nutrition@doe.mass.edu
Website: http://www.doe.mass.edu/cnp/
Publication: *Managing Life Threatening Food Allergies in Schools*

National Digestive Diseases Information Clearinghouse
2 Information Way
Bethesda, MD 20892-3570
Phone: 800-891-5389
Fax: 703-738-4929
E-mail: nddic@info.niddk.nih.gov
Website: http://digestive.niddk.nih.gov/ddiseases/pubs/lactoseintolerance_ez/
The Clearinghouse provides information about digestive diseases to people with digestive disorders and to their families, health care professionals, and the public. Information about lactose intolerance is available here.

Hunger

Center on Hunger and Poverty
The Heller School for Social Policy and Management
Brandeis University
Mailstop 077/ P.O. Box 549110
Waltham, MA 02454-9110
Phone: 781-736-8885
Fax: 781-736-3925
E-mail: hunger@brandeis.edu
Website: http://www.centeronhunger.org/
The Center on Hunger and Poverty promotes policies that improve the lives of low-income children and families. Center activities include research and policy analysis, public education initiatives, and assistance to policy makers and organizations across the country on poverty- and hunger-related issues.

Food Research and Action Center (FRAC)
1875 Connecticut Avenue NW, Suite 540
Washington, DC 20009
Phone: 202-986-2200
Fax: 202-986-2525
E-mail: webmaster@frac.org
Website: http://www.frac.org
A nonprofit and nonpartisan research and public policy center that conducts research to document the extent of hunger and its impact on low-income families with children and serves as a national clearinghouse of information and analyses about hunger and anti-hunger programs. FRAC also works closely with groups across the country to expand programs which help children grow and learn, particularly the School Breakfast Program, the Summer Food Service Program for Children, the WIC Program, and programs which provide meals and snacks to children in before- and after-school programs.

Project Bread
145 Border Street
East Boston, MA 02128-1903
Phone: 617-723-5000
Fax: 617-248-8877
Websites: http://www.projectbread.org and http://www.meals4kids.org
Features resources, data, and information regarding direct services to combat hunger in Massachusetts.

Multicultural Populations

EatEthnic.com
Website: http://www.eatethnic.com
Provides information, resources, recipes, and materials about food practices and customs, religious dietary practices, and more, on multiple ethnic and cultural groups.

Food and Nutrition Information Center
National Agricultural Library, Room 105
10301 Baltimore Avenue
Beltsville, MD 20705-2351
Phone: 301-504-5719
Fax: 301-504-6409
TTY: 301-504-6856
E-mail: fnic@nal.usda.gov
Website: http://www.nal.usda.gov/fnic/
The National Agricultural Library (NAL) collection includes many materials concerning ethnic and minority nutrition and dietary practices, as well as cross-cultural nutrition education. Lending and copy service information can be found at http://www.nal.usda.gov/fnic/general/lending.html.

National Center for Nutrition and Dietetics Bibliography on Ethnic Food Habits
American Dietetic Association
Website: http://www.eatright.org/bibethnic.html
A selected bibliography of books and articles.

Nutrition Education Page
Oregon State University Extension Family and Community Development
Website: http://osu.orst.edu/dept/ehe/nutrition.htm
Provides resources, tips, and skill-building for those working with low income, culturally diverse audiences.

Overweight

American Obesity Association
1250 24th Street NW, Suite 300
Washington, DC 20037
Phone: 202-776-7711
Fax: 202-776-7712
E-mail: executive@obesity.org
Website: http://www.obesity.org/subs/contactus.shtml
Focuses on public policy issues related to obesity.

Center for Weight and Health
College of Natural Resources
University of California
101 Giannini Hall #3100
Berkeley, CA 94720-3100
Phone: 510-642-2915
Fax: 510-642-4612
Website: http://www.cnr.berkeley.edu/cwh/index.html
Site offers links, data, and a selection of published literature on nutrition, physical activity, and weight.

Massachusetts Department of Public Health
Massachusetts Overweight Prevention and Control Initiative
Publication: *Resource Guide for Pediatric Overweight Treatment Services In Massachusetts* (2004). A resource developed to help providers and parents/guardians locate overweight treatment programs across Massachusetts. Available through the Massachusetts Health Promotion Clearinghouse (http://www.maclearinghouse.com).

North American Association for the Study of Obesity (NAASO)
8630 Fenton Street, Suite 918
Silver Spring, MD 20910
Phone: 301-563-6526
Fax: 301-563-6595
Website: http://www.naaso.org/contact.asp
Publication: *Obesity Research:* The Official Journal of NAASO
Boston Medical Center
560 Harrison Avenue, Suite 501
Boston, MA 02118
Website: http://www.obesityresearch.org/

Shape Up America!
P.O. Box 149
Clyde Park, MT 59018
Phone: 406-686-4844
Fax: 406-686-4424

Website: http://www.shapeup.org
Shape Up America! is a nonprofit organization, founded by former Surgeon General C. Everett Koop to promote healthy weight and increased physical activity in America. It involves a broad-based coalition of industry, medical/health, nutrition, physical fitness, and related organizations and experts. The organization offers a pediatric BMI assessment tool, which permits calculation of BMI and plotting of BMI percentiles on the CDC growth charts for children aged 2–20. Up to 6 sets of data can be entered for a single individual, and the graph can be printed out for filing.

Weight-control Information Network
1 Win Way
Bethesda, MD 20892-3665
Phone: 202-828-1025 or 877-946-4627
Fax: 202-828-1028
E-mail: win@info.niddk.nih.gov
The Weight-control Information Network is an information service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). It provides the general public, health professionals, the media, and Congress with up-to-date, science-based information on weight control, obesity, physical activity, and related nutritional issues.

ShapeDown
Website: http://www.shapedown.com/index.htm
Family-based weight management program for children and adolescents.

Office of the Surgeon General
Website: http://www.surgeongeneral.gov/topics/obesity
Provides access to The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity and other documents related to public health and weight issues.

School Food Service

Action for Healthy Kids (AFHK)
4711 West Golf Road Suite 625
Skokie, IL 60076
Website: http://www.ActionForHealthyKids.org
A public-private partnership of more than 50 national organizations and government agencies representing education, health, fitness and nutrition, Action for Healthy Kids addresses the epidemic of overweight, sedentary, and undernourished youth by focusing on changes in schools to improve nutrition and increase physical activity. The local (Massachusetts) phone number for AFHK is: 617-734-6750

FDA Center for Food Safety & Applied Nutrition
Website: http://www.foodsafety.gov
This site is an assembly of links that connect readers to credible food safety advice from the FDA, USDA, CDC, and some state and local health agencies.

Food Safety Project — Iowa State Extension Service
Website: http://www.extension.iastate.edu/foodsafety/
Information and resources for consumers, health professionals, and educators.

Food Safety Website — North Carolina Cooperative Extension Service
Website: http://www.ces.ncsu.edu/depts/foodsci/agentinfo
Information on all facets of food safety, organized in a user-friendly way by food category. Hot Topics section discusses pesticides and additives.

Food Safety Research Information Office (FSRIO)
National Agricultural Library
10301 Baltimore Ave., Room 303
Beltsville, MD 20705-2351

Phone: 301-504-7374
E-mail: yalonso@nal.usda.gov
Website: http://www.nal.usda.gov/fsrio
Provides an online database for food safety research and policy planning.

Foodborne Illness Education Information Center
Website: http://www.nal.usda.gov/fnic/foodborne/index.html
This site, sponsored by *USDA and FDA*, is a compilation of food safety advice for professionals, teachers, and consumers developed by universities, private industries, and government agencies.

The Healthy School Meals Resource System (HSMRS)
Website: http://schoolmeals.nal.usda.gov/index.html
HSMRS is developed by the National Agricultural Library's Food and Nutrition Information Center and the University of Maryland Department of Nutrition and Food Science, in collaboration with USDA's Food and Nutrition Service. It provides information to persons working in USDA's Child Nutrition Programs.

School Nutrition Association (SNA) of Massachusetts
258 Harvard Street PMB 283
Brookline, MA 02446
Phone: 800-351-3139 or 617-734-8822
Fax: 617-734-7772
E-mail: info@schoolnutrition.info
Website: http://www.maschoolfood.org
The SNA of Massachusetts (formerly MSFSA) is a state affiliate of the School Nutrition Association (formerly ASFSA). It brings information, services, and continuing education to school food service professionals in Massachusetts.

National Food Service Management Institute (NFSMI) Information Services
The University of Mississippi
6 Jeanette Phillips Drive
P.O. Drawer 188
University, MS 38677-0188
Phone: 800-321-3054
Fax: 800-321-3061
E-mail: nfsmi@olemiss.edu
Website: http://www.olemiss.edu/depts/nfsmi/Information/Services.html
NFSMI's Information Services provides all types of information or referrals about any Child Nutrition Program, free of charge. It answers questions, identifies information, and works in conjunction with the National Agricultural Library (NAL) to lend materials. A staff of school meals specialists are on call to answer child nutrition questions. Information is available on: planning healthy meals, nutrient analysis, recipes, computer applications, procurement, food production, meal service equipment, facility design, quality assurance, and more.

New England Dairy & Food Council
Phone: 617-734-6750 (Eastern Massachusetts)
or 413-743-2345 (Western and Central Massachusetts)
E-mail: info@newenglanddairycouncil.org
Website: http://www.newenglanddairycouncil.org
Nutrition promotion materials and other information for food service professionals.

School Nutrition Association (formerly American School Food Service Association)
700 South Washington Street, Suite 300
Alexandria, VA 22314
Phone: 703-739-3900
Fax: 703-739-3915
E-mail: servicecenter@schoolnutrition.org
Website: http://www.schoolnutrition.org

Offers a vast amount of information concerning nutrition in the school setting, including sample local school wellness policies.

University of Massachusetts Extension
Nutrition Education Program — Food Safety Education
Website: http://www.umass.edu/umext/nutrition/programs/food_safety/resources/index.html
The Food Safety Education program provides training and resources on safe food handling to food producers and processors; food workers; regulatory officials; educators and volunteers serving children; the elderly; and other vulnerable groups. Programs and resources focus on sources of contamination and ways to prevent foodborne illness. Basic food safety concepts include good personal hygiene, time and temperature control, and prevention of cross-contamination. (Full address and information about other aspects of the Nutrition Education Program are included under general listings for Massachusetts Agencies and Organizations.)

U.S. Department of Agriculture (USDA)
Food Quality Assurance Staff (FQAS)
Website: http://www.ams.usda.gov/fqa/fqmis.htm
The goal of FQAS is to assist interested parties in buying their food as efficiently and economically as possible, while taking advantage of the innovations and efficiencies of the commercial marketplace. It manages Commercial Item Descriptions (CIDs) for food items and establishes quality assurance policies and procedures applicable to the procurement of food.

Team Nutrition
3101 Park Center Drive, Room 632
Alexandria, VA 22302
Phone: 703-305-1624
Fax: 703-305-2549
Website: http://www.fns.usda.gov/tn/team.html
As part of the United States Department of Agriculture's Food and Nutrition Service, *Team Nutrition* is an integrated, behavior based, comprehensive plan for promoting the nutritional health of the Nation's children.

Special Health Care Needs

Dysphagia Research Society
4550 Post Oak Place, Suite 342
Houston, Texas 77027
Phone: 713-965-0566
Fax: 713-960-0488
Website: http://www.dysphagiaresearch.org
Organized for charitable, educational, and scientific purposes, the society aims to enhance and encourage research pertinent to normal and disordered swallowing and related functions as well as to foster new methodologies and instrumentation in dysphagia research and its clinical applications

Dysphagia Resource Center
Website: http://www.dysphagia.com
Resources related to swallowing and swallowing disorders.

National Food Service Management Institute
The University of Mississippi
6 Jeanette Phillips Drive
P.O. Drawer 188
University, MS 38677-0188
Telephone: 800-321-3054 or 662-915-7658
Fax: 800-321-3061
Website: http://www.nfsmi.org
Offers Fact Sheets on the following topics:

- Diabetes Fact Sheet for Child Nutrition Professionals

- Allergy Fact Sheet for Child Nutrition Professionals
- Lactose Intolerance Fact Sheet for Child Nutrition Professionals
- Swallowing Fact Sheet for Child Nutrition Professionals

U. S. Department of Agriculture Food and Nutrition Service
Website: http://www.fns.usda.gov/cnd/Guidance/special_dietary_needs.pdf
Provides access to *Accommodating Children with Special Dietary Needs in the School Nutrition Programs: Guidance for School Food Service Staff*, a 54-page document produced in 2001.

Vegetarianism

Vegetarian Resource Group
P.O. Box 1463, Dept. IN
Baltimore, MD 21203
Phone: 410-366-VEGE (8343)
E-mail: vrg@vrg.org
Website: http://www.vrg.org
Substantive, well-organized, and balanced material providing news, recipes, nutrition information, links, and ideas for those interested in eating a vegetarian diet.

Food and Nutrition Information Center
Vegetarian Nutrition Resource List
National Agricultural Library/USDA
10301 Baltimore Avenue, Room 304
Beltsville, MD 20705-2351
Website: http://www.nal.usda.gov/fnic/pubs/bibs/gen/vegetarian.htm
A compilation of resources on vegetarian nutrition for the consumer.

REFERENCES

Alaimo, K., Olson, C. M. & Frongillo, E. A., Jr. (2002). Family food insufficiency, but not low family income, is positively associated with dysthymia and suicide symptoms in adolescents. *Journal of Nutrition, 132*(4), 719–725.

Alaimo, K., Olson, C. M. & Frongillo, E. A., Jr. (2001). Food insufficiency and American school-aged children's cognitive, academic, and psychosocial development. *Pediatrics, 108*(1), 44–53.

Alan Guttmacher Institute. (2006, updated). *U.S. teenage pregnancy statistics: Overall trends, trends by race and ethnicity and state-by-state information*. Retrieved in 2007 from http://www.guttmacher.org/pubs/2006/09/12/USTPstats.pdf.

American Academy of Pediatrics, Committee on Nutrition, Policy Statement (1999). Calcium requirements of infants, children, and adolescents. *Pediatrics*, *104*(5), 1152–1157. Available online at http://www.aap.org.

American Academy of Pediatrics, Committee on Nutrition. (2003). Prevention of pediatric overweight and obesity. *Pediatrics*, *112*(2), 424–430. Available online at http://www.aap.org.

American Academy of Pediatrics, Committee on School Health. (2004). Soft drinks in schools. *Pediatrics*, *113*(1), 152–154. Available online at http://www.aap.org.

American Dietetic Association. (2004). Providing nutrition services for infants, children, and adults with developmental disabilities and special health care needs. *Journal of the American Dietetic Association, 104*(1), 97–107. PMID: 14702592.

American Dietetic Association, Society for Nutrition Education & American School Food Service Association. (2003). Nutrition services: An essential component of comprehensive school health programs. *Journal of the American Dietetic Association, 103*, 505–514.

Bartlett C. F. (2004). You are what you serve: Are school districts liable for serving unhealthy food and beverages to students? *Seton Hall Law Review*, *34*(3), 1053–1091. PMID: 15168710.

Barlow, S. E. & Dietz, W. H. (2002). Management of child and adolescent obesity: Summary and recommendations based on reports from pediatricians, pediatric nurse practitioners, and registered dietitians. *Pediatrics*, *110*, 236–238.

Barrett, J. C., Goodwin, D. K. & Kendrick, O. (2002). Nursing, food service, and the child with diabetes. *Journal of School Nursing, 18*(3), 150–156.

Bauer, K. W., Yang, Y. W. & Austin, S. B. (2004). ‘How can we stay healthy when you're throwing all of this in front of us?’ Findings from focus groups and interviews in middle schools on environmental influences on nutrition and physical activity. *Health Education & Behavior, 31*(1), 34–46. PMID: 14768656.

Bendelius J. (2005). Label reading 101. Can reading labels help children make healthier food choices? *School Nurse News. 22*(1), 19–20. PMID: 15743059.

Bendelius J. (2004). Vending machines in schools: What are we to do? *School Nurse News, 21*(4), 20–21.

Been, K. (2004). Hot potato in the school cafeteria. *The School Administrator* (web version), September. Retrieved in 2006 from http://65.213.205.4/publications/sa/2004_09/beem.htm.

Berkey C. S., Rockett, H. R. H., Field A. E. et al. (2004). Sugar-added beverages and adolescent weight change. *Obesity Research, 12*, 778–788.

Bhattacharya, J., Currie, J. & Haider, S. (2004). Poverty, food insecurity, and nutritional outcomes in children and adults. *Journal of Health Economics, 23*(4), 839–862.

Black, S. (2004). Beyond baby fat: Childhood obesity is a serious health problem — and one that schools can help address. *American School Board Journal*, *191*(1).

Briggs, M., Safaii, S. & Beall, D. L. (2003). Position of the American Dietetic Association, Society for Nutrition Education, and American School Food Service Association — Nutrition services: An essential component of comprehensive school health programs. *Journal of the American Dietetic Association*, *103*(4), 505–514. PMID: 12669016.

Brown, L. & Pollitt, E. (1996). Malnutrition, poverty and intellectual development. *Scientific American 274*(2), 38–43.

Burniat, Walter et al. (2002). *Child and adolescent obesity: Causes and consequences, prevention and management*. New York: Cambridge University Press.

Busch, C. R., Taylor, H. A., & Kanarek, R. B. (2005). The acute effects of meals on cognitive performance. *Nutritional Neuroscience.* New York: Taylor and Francis.

Center on Hunger, Poverty and Nutrition Policy. (1995). *Statement on the link between nutrition and cognitive development in children*. Medford, MA: Tufts University School of Nutrition.

Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Adolescent and School Health. (2006). Nutrition and the health of young people. Author. Retrieved in 2006 from http://www.cdc.gov/HealthyYouth/nutrition/facts.htm.

Centers for Disease Control and Prevention. (2002). Youth risk behavior surveillance — United States 2001. *Morbidity and Mortality Weekly Report, 51*(SS04), 1–64.

Centers for Disease Control and Prevention. (2001–2002). *National health and nutrition examination survey*. Retrieved in 2006 from http://www.cdc.gov/nchs/about/major/nhanes/nhanes01-02.htm.

Centers for Disease Control and Prevention. (1996). Guidelines for school health programs to promote lifelong healthy eating. *Morbidity and Mortality Weekly Report, 45*(RR-9),1–33.

Center on Hunger and Poverty. (2002). The consequences of hunger and food insecurity for children: Evidence from recent scientific studies. Waltham, MA: Center on Hunger and Poverty. Retrieved in 2007 from http://www.centeronhunger.org/pdf/ConsequencesofHunger.pdf.

Center on Hunger and Poverty. (1998). *Statement on the Link Between Nutrition and Cognitive Development in Children*. Waltham, MA: Center on Hunger and Poverty. Retrieved in 2007 from http://www.centeronhunger.org/pubs/cognitive .html.

Cho, H. & Nadow, M. Z. (2004). Understanding barriers to implementing quality lunch and nutrition education. *Journal of Community Health, 29*(5), 421–435. PMID: 15471423.

Chomitz, Virginia et al. (2003). Promoting healthy weight among elementary school children via a health report card approach. *Archives of Pediatrics & Adolescent Medicine*, *157*, 765–772.

Clark, N. (2003). *Nancy Clark's Sports Nutrition Guidebook, Third Edition.* Champaign, IL: Human Kinetics Publishers.

Cooke, L. (2004).The development and modification of children's eating habits. *Nutrition Bulletin, 29*(1), 31–35.

Couch, S. C. & Daniels S. (2004). Diet and blood pressure elevation in children and adolescents. *Archives of Pediatric & Adolescent Medicine*, *158*, 418–419.

Crouch, D. (2004). How nurse intervention is tackling child obesity. *Nursing Times*, *100*(31), 26–27.

Cullen, K. W & Zakeri, I. (2004). Fruits, vegetables, milk, and sweetened beverages consumption and access to a la carte/snack bar meals at school. *American Journal of Public Health*, *94*(3), 463–467. PMID: 14998815.

Datar, A., Sturm, R. & Magnabosco, J. L. (2004). Childhood overweight and academic performance: National study of kindergartners and first-graders. *Obesity Research*, *12*, 58–68.

Dietz, W. H. & Gortmaker, S. L. (2001). Preventing obesity in children and adolescents. *Annual Review of Public Health*, *22*, 337–353.

Dietz, W. H. (2004). Overweight in childhood and adolescence. *New England Journal of Medicine, 350*, 855–857.

Etelson, D., Brand, D. A., Patrick, P. A & Shirali, A. (2003). Childhood obesity: Do parents recognize this health risk? *Obesity Research, 11*, 1362–1368.

Ferraro, K. F., Thorpe, R. J. Jr., Wilkinson, J. A. (2003). The life course of severe obesity: Does childhood overweight matter? *Journal of Gerontology*, *58B*(2), S110–S119.

Field A. E., Laird N., Steinberg E. et al (2003). Which metric of relative weight best captures body fatness in children? *Obesity Research, 11*, 1345–1352.

Francis L. A., Lee Y. & Birch L. L. (2003). Parental weight status and girls' television viewing, snacking, and Body Mass Indexes. *Obesity Research*, *11*, 143–151.

Freedman, D. S. (2002). Clustering of coronary heart disease risk factors among obese children. *Journal of Pediatric Metabolic & Endocrinology, 15*(8), 1099–1108.

French, S. A., Jeffery, R. W., Story, M. et al. (2001). Pricing and promotion effects on low-fat vending snack purchases: The CHIPS study. *American Journal of Public Health*, *87*, 112–117.

Gale, S. M., Castracane, V. D. & Mantzoros, C. S. (2004). Energy homeostasis, obesity and eating disorders: Recent advances in endocrinology. *Journal of Nutrition, 134*(2), 295–298.

Gordon, C. M., DePeter, K. C., Feldman, H. A. et al. (2004). Prevalence of vitamin D deficiency among healthy adolescents. *Archives of Pediatric & Adolescent Medicine*, *158*, 531–537.

Gordon, C. M. & Nelson, L. M. (2003). Amenorrhea and bone health in adolescents and young women. *Current Opinion in Obstetrics & Gynecology, 15*(5), 377–384.

Gordon-Larsen, P., Adair L. S. & Popkin B. M. (2002). Ethnic differences in physical activity and inactivity patterns and overweight status. *Obesity Research*, *10*, 141–149.

Gowers, S. & Bryant-Waugh, R. (2004). Management of child and adolescent eating disorders: the current evidence base and future directions. *Journal of Child Psychology & Psychiatry & Allied Disciplines, 45*(1), 63–83.

Graves, D. E. & Suitor, C. W. (1998). *Celebrating diversity: Approaching families through their food.* Arlington, VA: National Center for Education in Maternal and Child Health. Available from the National Agricultural Library (http://www.nal.usda.gov/fnic/ general/lending.html.), call number: RA784.G73.

Grimm, G. C., Harnack, L. & Story, M. (2004). Factors associated with soft drink consumption in school-aged children. *Journal of the American Dietetic Association, 104*(8), 1244–1249.

Haapala I. & Probart C. (2004). Food safety knowledge, perceptions, and behaviors among middle school students. *Journal of Nutrition Education and Behavior, 36*(2), 71–76. PMID: 15068755.

Henry J. Kaiser Foundation. (2004). The role of media in childhood obesity. Issue Brief. Retrieved in 2007 from http://www.kff.org/entmedia/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=32022.

Hertzler, A. A., Stadler, K. M., Lawrence, R., Alleyne, L., Mattioli, L. & Majidy, M. (1995). Empowerment: A food guidance process for cross-cultural counseling. *Journal of Family and Consumer Sciences*, *87*, 45–50.

Howell, E. (2004). Swallowing fact sheet for child nutrition professionals*. Special needs fact sheets, the National Food Service Management Institute*. Available online at http://www.nfsmi.org/Information/Newsletters/swallowingfact.html.

International Food Information Council Foundation. (2006). On today's menu: Back to school with food allergies. *Food Insight*, July/August. Retrieved online in 2007 from http://ific.org/foodinsight/2006/ja/foodallfi406.cfm.

Janega, J. B., Murray, D. M., Varnell, S. P. et al. (2004). Assessing intervention effects in a school-based nutrition intervention trial: Which analytic model is most powerful? *Health Education & Behavior, 31*(6), 756–774.

Kaufman, F. R. (2002). Type 2 diabetes in children and young adults: A "new epidemic." *Clinical Diabetes, 20*(4), 217–218.

Kavey, R. W., Daniels, S. R., Lauer, R. M., Atkins, D. L., Hayman, L. L., Taubert, K. (2003) American Heart Association guidelines for primary prevention of atherosclerotic cardiovascular disease beginning in childhood. *Journal of Pediatrics,*142(4):368–372.

Kelley, C., Krummel, D., Gonzales, E. N. et al. (2004). Dietary intake of children at high risk for cardiovascular disease. *Journal of the American Dietetic Association*, *104*(2), 222–225.

Kjelsas, E., Bjornstrom, C. & Gotestam, K. G. (2004). Prevalence of eating disorders in female and male adolescents (14–15 years). *Eating Behaviors*, *5*(1), 13–25.

Kleinman, R. E., Hall, S., Green, H., Korzec-Ramirez, D., Patton, K., Pagano, M. E. et al. (2002). Diet, breakfast, and academic performance in children. *Annals of Nutrition & Metabolism, 46*(suppl 1), 24–30.

Knol, L. L., Haughton, B. & Fitzhugh E. C. (2004). Food insufficiency is not related to the overall variety of foods consumed by young children in low-income families. *Journal of the American Dietetic Association, 104*(4), 640–644.

Kotz, K., Story, M. (1994). Food advertisements during children's Saturday morning television programming: Are they consistent with dietary recommendations? *Journal of the American Dietetic Association, 94*(11), 1296–1300.

Kronsberg, S. S., Obarzanek, E., Affenito, S. G. et al (2003). Macronutrient intake of black and white adolescent girls over 10 years: The NHLBI Growth and Health Study. *Journal of the American Dietetic Association, 103*(7), 852–860.

Kumanyika, S. K. & Krebs-Smith, S. M. (2001). Preventive nutrition issues in ethnic and socioeconomic groups in the United States. In A. Bendich and R. J. Deckelbaum (Eds.). *Primary and Secondary Preventive Nutrition.* Totowa, NJ: Humana Press. Available online from the National Agricultural Library (http://www.nal.usda.gov/fnic/ general/lending.html), call number: RM217.P75 2001.

le Grange, D., Loeb, K. L, van Orman, S. & Jellar, C. C. (2004). Bulimia Nervosa in adolescents: A disorder in evolution? *Archives of Pediatric & Adolescent Medicine, 158*, 478–482.

Long, J. D. & Stevens, K. R. (2004). Using technology to promote self-efficacy for healthy eating in adolescents. *Journal of Nursing Scholarship, 36*(2), 134–139.

Lowry, R., Wechsler, H., Galuska, D. A. et al. (2002). Television viewing and its associations with overweight, sedentary lifestyle, and insufficient consumption of fruits and vegetables among US high school students. *Journal of School Health, 72*(10), 413–421.

Lytle, L. A., Murray, D. M., Perry, C. L. et al. (2004). School-based approaches to affect adolescents' diets: Results from the TEENS study. *Health Education & Behavior, 31*(2), 270–287.

Magnus, M. H. (1996). What's your IQ on cross-cultural nutrition counseling? *The Diabetes Educator*, *22*, 57–60, 62.

Makowske, M.& Feinman, R. D. (2005). Nutrition education: A questionnaire for assessment and teaching. *Nutrition Journal, 4*(1), 2. Retrieved in 2006 from http://www.nutritionj.com/content/4/1/2.

Massachusetts Action for Healthy Kids. (2004). Massachusetts a la carte food & beverage standards to promote a healthier school environment. Author. Retrieved in 2007 from http://www.johnstalkerinstitute.org/vending%20project/healthysnacks.htm.

Massachusetts Department of Education. (2004) 2003 Massachusetts Youth Risk Behavior Survey Results. Author. Retrieved in 2005 from http://www.doe.mass.edu/cnp/hprograms/yrbs/

Massachusetts Department of Education and The Life-Threatening Food Allergies in Schools Task Force. (2002). Managing life threatening food allergies in school. Malden, MA: DOE. Retrieved in 2007 from http://www.doe.mass.edu/cnp/news02/allergy.pdf.

Massachusetts Department of Public Health, Massachusetts Department of Education & Special Dietary Needs Review Committee. (2000). Report to the Massachusetts State Senate, filed on August 14, 2000.

Maughan, R. (2002). The athlete's diet: Nutritional goals and dietary strategies. *Proceedings of the Nutrition Society. 61*(1), 87–96.

McGraw, S. A., Sellers, D., Stone, E. et al. (2000). Measuring implementation of school programs and policies to promote healthy eating and physical activity among youth. *Preventive Medicine, 31*(2), S86–S97.

McVey, G., Tweed, S. & Blackmore, E. (2004). Dieting among preadolescent and young adolescent females. *Canadian Medical Association Journal*, *170*(10), 1559–1561. PMID: 15136549.

Mehler, P. S. (2003). Bulimia Nervosa. *New England Journal of Medicine*, *349*, 1064–1075.

Metcalfe, D. D., Sampson, H. A. & Simon, R. A. (eds). (2003). *Food Allergy: Adverse Reactions to Foods and Food Additives.* Cambridge, MA: Blackwell Science.

Mitan, L.A. (2002). Eating disorders in adolescent girls. *Current Women's Health Reports*, *2*(6), 464–467.

Mizes, J. S., Heffner, M., Madison, J. K. & Varnado-Sullivan, P. (2004). The validity of subjective measures of body image disturbance. *Eating Behaviors*, *5*(1), 55–66.

Moilanen, B. C. (2004). Vegan diets in infants, children, and adolescents. *Pediatrics in Review, 25*(5), 174–176. PMID: 15121909.

Mokdad, A. H., Ford, E. S., Bowman, B. A., Dietz, W. H., Vinicor, F., Bales, V. S. & Marks, J. S. (2003). Prevalence of obesity, diabetes, and obesity-related health risk factors, 2001. *Journal of the American Medical Association, 289*(1), 76–79.

Muise, A. M., Stein, D. G. & Arbess, G. (2003). Eating disorders in adolescent boys: A review of the adolescent and young adult literature. *Journal of Adolescent Health*, *33*(6), 427–435. PMID: 14642705.

Mullin, K. (1996). Practical nutrition education: Special considerations for athletes. *Nurse Practitioner Forum, 7*(3), 106–111.

National Association of State Boards of Education. (2000). *Fit, healthy and ready to learn: A school health policy guide* (Part 1). Alexandria, VA: National Association of State Boards of Education.

National Campaign to Prevent Teen Pregnancy. (2006). By the numbers: The public costs of teen childbearing in Massachusetts. Author. Retrieved in 2006 from http://www.teenpregnancy.org/costs/pdf/fact_sheet/MA_Final.pdf.

National Food Service Management Institute. (2002). *Feeding children with special needs: An annotated bibliography*. Retrieved in 2006 from http://www.nfsmi.org/Information/bib/spneedsbib.htm.

National Institute of Child Health and Human Development (NICHD). (2001, updated 2006). Calcium crisis affects American youth. NIH News Release. Retrieved in 2007 from http://www.nichd.nih.gov/news/releases/calcium_crisis.cfm.

Neault, N., Cook, J. T., Morris, V. & Frank, D. A. (2005). The real cost of a healthy diet: Healthful foods are out of reach for low-income families in Boston. Boston, MA: Boston Medical Center Department of Pediatrics.

Neumark-Sztainer, D. (2005). *"I'm, Like, SO Fat!": Helping Your Teen Make Healthy Choices about Eating and Exercise in a Weight Obsessed World.* New York: The Guilford Press.

Neumark-Sztainer, D., Hannan, P. J., Story, M. & Perry, C. L. (2004). Weight-control behaviors among adolescent girls and boys: Implications for dietary intake. *Journal of the American Dietetic Association, 104*(6), 913–920.

Nicklas, T. & Johnson, R. (2004). Position of the American Dietetic Association: Dietary guidance for healthy children ages 2 to 11 years. *Journal of the American Dietetic Association, 104*(4), 660–677. PMID: 15054355.

Nord, M., Andrews, M. & Carlson, S. (2005). Household Food Security in the United States, 2004, U.S. Dept. of Agriculture, Economic Research Report No. 11.

Nowak-Wegrzyn, A. (2003). Future approaches to food allergy. *Pediatrics, 111*(6), 1672–1680.

Nystrom, A. A., Schmitz, K. H., Perry, C. L. et al. (2005). The relationship of weight-related perceptions, goals, and behaviors with fruit and vegetable consumption in young adolescents. *Preventive Medicine, 40*(2), 203–208.

Parker, L. (2005). *Proceedings of the round table on understanding the paradox of hunger and obesity.* Washington, DC: Food Research and Action Center (FRAC).

Patrick, K., Norman, G. J., Calfas, K. J. et al. (2004). Diet, physical activity, and sedentary behaviors as risk factors for overweight in adolescence. *Archives of Pediatric & Adolescent Medicine, 158*, 385–390.

Phillips S. M., Bandini L. G., Naumova E. N. et al. (2004.) Energy-dense snack food intake in adolescence: Longitudinal relationship to weight and fatness. *Obesity Research, 12*, 461–472.

Project Bread. (2006). Status report on hunger in Massachusetts, 2006. Author. Retrieved in 2007 from http://www.foodbankwma.org/StatusReportOnHungerInMA_2006.pdf.

Project Bread. (2005). Status report on hunger in Massachusetts, 2005. Author. Retrieved in 2007 from http://www.rideforhunger.org/media/StatusReportOnHungerInMA_2005.pdf.

Rankin J. W. (2002). Weight loss and gain in athletes. *Current Sports Medicine Reports, 1*(4), 208–213.

Roberts D. & Foehr, U. (2004). *Kids and Media in Americ*a. Cambridge, MA: University Press.

Scheier, L. M. (2005). What is the hunger-obesity paradox? *Journal of the American Dietetic Association, 105*(6), 883–886.

Shaw, H., Ramirez, L., Trost, A. et al. (2004). Body image and eating disturbances across ethnic groups: More similarities than differences. *Psychology of Addictive Behaviors*, *18*(1), 12–18. PMID: 15008681.

Sorof, J. M., Lai, D., Turner, J. et al. (2004). Overweight, ethnicity, and the prevalence of hypertension in school-aged children. *Pediatrics*, *113*, 475–482.

Sothern, M. S. (2004). Obesity prevention in children: Physical activity and nutrition. *Nutrition, 20*(7–8), 704–708.

Steffen L. M., Jacobs D. R. Jr., Murtaugh M. A. et al. (2003). Whole grain intake is associated with lower body mass and greater insulin sensitivity among adolescents. *American Journal of Epidemiology, 158*(3), 243–250.

Stein, K. (2004). Keeping up with a continuing trend in foodservice. *Journal of the American Dietetic Association, 104*(9), 1343–1344.

Story, M., Holt, K. & Sofka, D. (Eds.). (2000). *Bright futures in practice: Nutrition*. Arlington, VA: National Center for Education in Maternal and Child Health.

Taras, H. (2005). Nutrition and student performance at school. *Journal of School Health, 75*(6), 199–213.

U. S. Department of Agriculture. *Changing the scene: Improving the school nutrition environment. A guide to local action.* Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service. Retrieved in 2006 from http://www.fns.usda.gov/tn/Resources/changing.html

U. S. Department of Agriculture. (2001). *Team nutrition call to action: Healthy school nutrition environments.* Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service.

U.S. Department of Agriculture. (2001). *Foods sold in competition with school meal programs: A report to Congress*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service.

U. S. Department of Agriculture, Food and Nutrition Service. (2001). *Accommodating children with special dietary needs in the school nutrition programs: Guidance for school food service staff*. Alexandria, VA: Author. Retrieved in 2006 from http://www.fns.usda.gov/cnd/Guidance/special_dietary_needs.pdf.

U.S. General Accounting Office. (2003). *School lunch program: Efforts needed to improve nutrition and encourage healthy eating*. Washington, DC: Author.

U.S. Department of Health & Human Services & U. S. Department of Agriculture. (2005). Dietary Guidelines for Americans, 2005 (6th Edition). Washington, DC: U.S. Government Printing Office. Retrieved in 2007 from http://www.health.gov/dietaryguidelines/dga2005/document/pdf/DGA2005.pdf

U.S. Department of Health & Human Services. (2005*). A Healthier You, Based on the Dietary Guidelines for Americans.* Washington, D. C.: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and Improving Health and Objectives for Improving Health.* (2nd ed.) (2 vols.) Washington, DC: U.S. Government Printing Office.

U.S. Surgeon General. (2001). *The Surgeon General's call to action to prevent and decrease overweight and obesity*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General.

Vail, K. (2004). The obesity epidemic. *American School Board Journal*, *191*(1).

Wang, G. & Dietz, W. (2002). Economic burden of obesity in youths aged 6 to 17 years: 1979–1999. *Pediatrics, 109*, e81.

Wang, L. Y., Yang, Q., Lowry, R. & Wechsler, H. (2003). Economic analysis of a school-based obesity prevention program. *Obesity Research, 11*(11), 1313–1324.

Wechsler, H., Brener, N., Kuester, S. & Miller, C. (2001). Food service and foods and beverages available at school: Results from the School Health Policies and Programs Study 2000. *Journal of School Health, 71*, 313–324.

Wechsler, H., Devereaux, R. S., Davis, M. & Collins, J. (2000). Using the school environment to promote physical activity and healthy eating. *Preventive Medicine, 31*(2), S121–S137.

Wehling Weepie, A. K. & McCarthy, A. M. (2002). A healthy lifestyle program: Promoting child health in schools. *Journal of School Nursing, 18*(6), 322–328.

Weiss, C., Munoz-Furlong, A., Furlong, T.J. & Arbit, J. (2004). Impact of food allergies on school nursing practice. *Journal of School Nursing, 20*(5), 21–30.

Weiss, R., Dziura, J., Burgert, T. S. et al. (2004). Obesity and the metabolic syndrome in children and adolescents. *New England Journal of Medicine*, *350*, 2362–2374.

Whitman, C. V., Aldinger, C., Levinger, B. & Birdthistle, I. (2000). *Education For All 2000 assessment: Thematic study on school health and nutrition.* Paris: United Nations Educational, Scientific and Cultural Organization. Draft version available online at http://www2.edc.org/HHD/globalnutrition.asp.

World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO). (2003). Diet, nutrition and the prevention of chronic diseases. WHO Technical Report Series 916. Geneva: WHO. Retrieved in 2006 from http://whqlibdoc.who.int/trs/WHO_TRS_916.pdf.

Young-Hyman, D., Herman, L. J., Scott, D. L. & Schlundt, D. G. (2000). Care giver perception of children's obesity-related health risk: A study of African American families. *Obesity Research, 8*, 241–248.

Note: Articles with PMID number have been indexed by PubMed for MEDLINE.

EXHIBITS

Exhibit 9-1 Key Nutrients in Food

Exhibit 9-2 Nutritional Recommendations for Children and Adolescents

Exhibit 9-3 Fiber Content in Foods

Exhibit 9-4 Calcium Content in Various Foods

Exhibit 9-5 Sources of Dietary Iron

Exhibit 9-6 Sample Nutritional Assessment

Exhibit 9-7 Danger Signs of Disordered Eating Patterns

Exhibit 9-8 Key Nutrients Needed by Pregnant Adolescents

Exhibit 9-9 Answers to Common Nutrition-Related Questions

Exhibit 9-1 Key Nutrients in Food

Nutrients	Important Functions	Food Sources
Fat soluble		
Vitamin A	Helps keep skin clear and smooth; helps keep mucous membranes firm and resistant to infection; promotes normal vision in dim light; helps promote bone growth.	Liver, egg yolk, dark green and orange vegetables, yellowish-pink fruits such as cantaloupe or peaches, butter, margarine, milk, cream, hard cheese, ice cream
Vitamin D	Helps the body absorb calcium and phosphorus in the building of bones and teeth.	Vitamin D-fortified milk, fish liver oils, egg yolk
Vitamin E	Protects cell membranes from damage; prevents destruction of fats in the body and in food.	Meat, eggs, vegetable oils, green leafy vegetables, whole-grain cereals, wheat germ
Vitamin K	Maintains normal clotting of the blood.	Pork, liver, egg yolk, leafy green vegetables, cauliflower
Water soluble		
Thiamin (vitamin B_1)	Promotes normal appetite and digestion; keeps nervous system healthy and prevents irritability; helps the body release energy from carbohydrates and fats in food.	Liver, meat (esp. pork), fish, poultry, eggs, enriched or whole-grain breads and cereals, dried peas and beans, potatoes, broccoli, green leafy vegetables
Riboflavin (vitamin B_2)	Helps cells use oxygen; releases energy from carbohydrates and fats in foods; helps maintain good vision and smooth skin.	Dairy products, meats (esp. organ meats), fish, leafy green vegetables, broccoli, eggs, whole-grain breads and cereals
Niacin	Helps keep nervous system healthy; keeps skin, mouth, tongue, and digestive tract in healthy condition; helps body release energy from carbohydrates and fats in foods.	Peanut butter, meat, liver, fish, poultry, enriched or whole grain breads and cereals, dried beans and peas, green vegetables
Pyridoxine (vitamin B_6)	Helps nervous tissues function normally; plays role in red blood cell regeneration; involved in the metabolism of amino acids, fats, and carbohydrates.	Liver, pork, ham, salmon, soybeans, lima beans, bananas, yeast, whole-grain cereals and breads, egg yolks, vegetables
Folacin (folic acid)	Helps cure (and prevent) megaloblastic anemia; helps enzyme and other biochemical systems function normally; required for DNA metabolism; helps prevent neural tube defects in newborns.	Green leafy vegetables, lima beans, broccoli, liver, kidney, whole-grain cereals, dried beans and peas
Cobalamin (vitamin B_{12})	Assists in red blood cell formation; protects against the development of pernicious anemia; maintains healthy nerves.	Eggs, fish, liver, kidney, other meats, milk and milk products

Ascorbic Acid (vitamin C)	Helps bind cells together and make walls of blood vessels firm; promotes healing of wounds and broken bones; helps body resist infections; helps tissues such as gums and teeth stay healthy.	Citrus fruits (orange, grapefruit, lemon, lime), strawberries, cantaloupe, melons, tomatoes, green peppers, broccoli, green leafy vegetables, cabbage, potatoes
Minerals		
Calcium	Helps build bones and teeth; helps blood to clot; helps muscles, nerves, and heart to work; helps regulate the use of other minerals in the body.	Milk and milk products (but low amounts in cottage cheese), dark-green leafy vegetables, salmon, sardines, other fish with edible bones, tofu (soybean curd), soybeans, other legumes
Phosphorus	Helps build bones and teeth; helps regulate the use of other minerals in the body.	Liver, fish, poultry, eggs, milk and milk products, whole-grain cereals, nuts, dried beans and peas
Iron	Combines with protein to make hemoglobin, the red substance in the blood that carries oxygen to the cells; needed to prevent iron deficiency anemia, which impairs the ability to concentrate, increases irritability, causes fatigue, and is related to increased blood levels of lead.	Red meat, liver, kidney, poultry, oysters, dried beans and peas, other legumes, dark green leafy vegetables, prunes, raisins, dried apricots, fortified, enriched, or whole grain breads and cereals, molasses
Iodine	Helps the thyroid gland control the rate at which the body uses energy; prevents some forms of goiter.	Seafood, iodized salt
Zinc	Important for protein synthesis and growth and development.	Seafood, meat and eggs, legumes, whole grains
Other Nutrients		
Protein	Maintains existing tissue and allows for optimal growth of body tissue; builds antibodies to fight infection; part of hormones and enzymes responsible for regulating body functions such as digestion and growth.	Meat, chicken, fish, tofu, soybeans, other legumes, whole grains, nuts, milk and milk products
Carbo-hydrates	Supplies energy; carries other nutrients present in foods; provides fiber, which assists in the elimination of body waste.	Breads and cereals, potatoes, lima beans, corn, dried beans and peas, rice, pasta, dried fruits, sugar, sweets
Fats	Supplies a large amount of energy in a small amount of food; supplies essential fatty acids; carries fat-soluble vitamins A, D, E, K; needed for healthy skin.	Butter, margarine, shortenings, oils, visible fat in meats, butterfat in milk and cream, nuts and seeds, chocolate
Water	Important in all cells and body fluids; regulates body temperature; transports nutrients to cells; carries waste away.	Water, juice, milk, soups, fruits, vegetables

Exhibit 9-2 Nutritional Recommendations for Children and Adolescents

Nutrient	4–8 years	9–13 years	14–18 years (girls)	14–18 years (boys)
Protein (grams)	19	34	46	52
Iron (mg)	10	8	15	11
Calcium (mg)	800	1300	1300	1300
Vitamin A (IU)	1333	2000	2333	3000
Vitamin C (mg)	25	45	65	75
Fiber (g)	19–23	23–28 (girls) 25–31 (boys)	23	31–34
Sodium (mg)	1200–1900	1500–2200	1500–2300	1500–2300
Cholesterol (mg)	<300	<300	<300	<300
Total Fat (g)	39–62 (25%–35% of calories)	62–85 (25%–35% of calories)	55–78 (25%–35% of calories)	61–95 (25%–35% of calories)
Saturated Fat (g)	16–18 (<10% of calories)	18–22 (girls) 20-24 (boys) (<10% of calories)	22 (10% of calories)	24–27 (<10% of calories)
Calories	1400–1600	1600–2000 (girls) 1800–2200 (boys)	2000	2200–2400

Values for iron, calcium, vitamin C, and vitamin A: These values reflect the 1999–2001 Dietary Reference Intakes (DRIs) updates from the Institutes of Medicine. Source: *Dietary Reference Intakes: Vitamins and Dietary Reference Intakes: Elements,* Institutes of Medicine, 1999–2002.

Recommendations for vitamin A are also often expressed using Retinol Equivalents (RE) or micrograms (µg) of retinol (the chemical name for vitamin A). The conversion factors for these different vitamin A measurements are: 3.3 IU = 1 RE = 1 µg. Source: *Dietary Reference Intakes: Vitamins,* Institutes of Medicine, 1999–2002.

Protein: These values reflect the 2002 Dietary Reference Intakes (DRIs) updates from the Food and Nutrition Board of the National Academy of Sciences. As a point of reference, 3 ounces of lean beef, which is a serving about the size of a deck of cards, provides 30 grams of protein. A cup of milk contains 8 grams of protein.

Age	Recommended Daily Protein Intake (grams/kg body weight)
1–3 years	1.1
4–13 years	0.95
14–18 years	0.85

Source: *Dietary Reference Intakes: Macronutrients,* Institutes of Medicine, 2002.

Fiber: Based on 14 grams/1000 calories. Source: *Dietary Guidelines for Americans: Carbohydrates.*

Sodium: The higher number in each age category reflects the Upper Limit (maximum level that is likely to pose no risk of adverse effect) recommended by the Institutes of Medicine. The 2005 Dietary Guidelines recommended Americans consume less than 2,300 mg (approximately 1 tsp.) of sodium/day and point out that approximately 75% is derived from salt added by manufacturers. The average intake in the United States is between 4,000 and 5,000 milligrams of sodium per day. Source: I*OM 2004 Dietary Reference Intakes: Electrolytes and Water*. Also see: *2005 Dietary Guidelines form Americans: Sodium & Potassium*

Fat: Fat is linked to caloric intake. Recommendations recognize the difference between heart-healthy fats (such as vegetable oils) and saturated fats, which are linked to heart disease. The recommended total fat intake for children ages 1–3 is 30%–40% of total calories and, for children over the age of 3 and adults, the recommendation is no more than 25%–35% of total daily calories from fat. As a result, the values for fat and total fat in the table are based on the average caloric intakes of the youngest and oldest children within each age group. Source: *Dietary Reference Intakes for Energy, Carbohydrates, Fiber, Fat, Protein and Amino Acids (Macronutrients),* Institutes of Medicine (2002).

Saturated Fat and Cholesterol: Although humans have no nutritional need (requirement) for saturated fats (animal fats), research suggests a strong link between high intake of saturated and trans fats and cholesterol and an increased risk of cardiovascular disease. As a result, the 2005 Dietary Guidelines recommend that Americans over the age of 2 consume less than 10% of their total calories from saturated fat and less than 300 mg/day of cholesterol and keep trans fats as low as possible. See: *2005 Dietary Guidelines form Americans: Fats.*

Calories: Source: *2005 Dietary Guidelines form Americans: Adequate Nutrients Within Calorie Needs*. Chart values reflect the needs of moderately active (about 1 hr/day) children within each age range. Inactive children need somewhat fewer calories; very active children will need more calories.

To obtain a more accurate estimate of a child's energy needs, based on his/her age, gender, height, weight, and activity level, see the CNRC's Children's Energy Needs Calculator, available online at http://www.kidsnutrition.org/consumer/nyc/vol1_03/energy_calculator.htm#.

Source: These recommendations were compiled by the USDA/ARS Children's Nutrition Research Center (CNRC) at Baylor College of Medicine, using available DRI reference values and other standards.

Exhibit 9-3 Fiber Content in Foods

Food	Average Amount of Fiber (in grams)
Legumes (cooked, ½ cup)	5
Whole grain cereal (1 oz.)	4
Fruits (1 medium)	2.5
Whole grain bread (1 slice)	2
Vegetables (cooked, ½ cup)	2
Nuts and seeds (e.g., 5 peanuts)	1

Exhibit 9-4 Calcium Content of Various Foods

Food	Serving Size	Calcium content (mg)
Milk, yogurt Cheese Cottage cheese Cream cheese Ice cream	1 cup 1 oz. 1 cup 1 Tbsp. 1 cup	300 200 240 10 220
Collards, kale Other vegetables	½ cup ½ cup	100 20–40
Fruits	½ cup or 1 medium	20–40
Legumes (cooked) Meat, poultry, fish Eggs	1 cup 3 oz. 1	140 10–20 30
Breads Cereals Macaroni, spaghetti	1 slice 1 oz. ½ cup	25 15 15

Exhibit 9-5 Sources of Dietary Iron

Heme Food Sources	Serving Size (oz.)	Iron (mg)
Beef, corned	3.0	2.5
Beef, lean ground (10% fat)	3.0	3.9
∗Beef, round	3.0	4.6
∗Beef, chuck	3.0	3.2
∗Beef, flank	3.0	4.3
Chicken, boneless breast	3.0	0.9
Chicken, leg w/bone	2.0	0.7
Chicken, liver	3.0	7.3
Chicken, thigh w/bone	2.3	1.2
Cod, broiled	3.0	0.8
Flounder, baked	3.0	1.2
∗Pork, lean ham	3.0	1.9
Pork, loin chop	3.0	3.5
Salmon, pink canned	3.0	0.7
Shrimp: 10, 2 ½”	1.1	0.5
Tuna, canned in water	3.5	1.0
Turkey, dark meat	3.0	2.0
Turkey, white meat	3.0	1.2

∗ Lean, trimmed of separable fat

non-Heme Food Sources	Serving Size	Iron (mg)
Almonds, raw	10–12 pieces	0.7
Apricots, dried, medium-size	10 pieces	1.7
Bagel	1 whole	1.5
Baked beans, canned	½ cup	2.0
Bread, white	2 slices	1.4
Bread, whole wheat	2 slices	1.7
Broccoli, cooked	½ cup	0.6
Broccoli, raw	1 stalk	1.1
Dates	10 pieces	1.6
Kidney beans	½ cup	3.0
Lima beans	½ cup	1.8
Macaroni, enriched, cooked	1 cup	1.9
Molasses, blackstrap	1 Tbsp.	2.3
Peas, frozen and prepared	½ cup	1.3
Prune juice	½ cup	1.5
Raisins, not packed	¼ cup	1.0
Rice, brown, cooked	1 cup	1.0
Rice, white enriched, cooked	1 cup	1.8
Spaghetti, enriched, cooked	½ cup	2.0
Vitamin supplements	varies	varies

Exhibit 9-6 Sample Nutritional Assessment

Growth Measurements

- Is the BMI *at or above* the 95th percentile?
- Is the BMI *at or above* the 85th percentile?
- Is the BMI *at or below* the 5th percentile?
- Is there an abnormal growth pattern (e.g., no increase in weight, no increase in height, decrease or increase of more than 2 major percentiles, flattened growth curve)?
- Is the student failing to thrive?

Health Status

- Does the student have a congenital anomaly that impairs feeding or utilization of nutrients?
- Is the student developmentally delayed or does she or he have a disability that causes feeding difficulties?
- Does the student have a food allergy or food intolerance?
- Is the student experiencing GI disturbances (e.g., constipation, diarrhea, bloating, stomach pain, vomiting)?
- Does the student have a medical condition that affects nutritional status or whose treatment includes diet modification (e.g., diabetes, hypertension, AIDS/HIV, TB, hyperlipidemia, cystic fibrosis)?
- Has the student been on prolonged use of a medication that interferes with nutrient absorption or has an effect on appetite?
- Does the student have a disordered eating pattern or an eating disorder such as anorexia nervosa or bulimia?
- Is the student physically active at least 60 minutes each day?

Biochemical

- Does the student have low blood iron status or anemia?
- Does the student have an elevated blood lead level?
- Does the student have high blood cholesterol levels?
- Are there other biochemical indicators or clinical signs of malnutrition?

Psychosocial

- Does the student have a disordered eating pattern or an eating disorder such as anorexia nervosa or bulimia?
- Is the student or family experiencing problems accessing food?
- Do they have inadequate facilities for food preparation or food storage?
- Who is responsible for purchasing and preparing food in the household?
- What are their skills with regard to selection and preparation of healthy foods?
- What is their knowledge with regard to proper storage and handling of foods to avoid foodborne illnesses?
- Does the student know about available community food resources (WIC, Food Stamps, or Share our Strength program)?
- Is the student experiencing stress at home (e.g., family illness, death, marital problems)?

Eating Patterns

- Does the student have a disordered eating pattern or an eating disorder such as anorexia nervosa or bulimia?
- What is the student's typical daily/weekend food intake?
- Does he or she follow the dietary guidelines?
- Is the student regularly eating foods too high in fat, sugar, or salt?

- Is the student practicing unhealthy weight loss or gain methods (e.g., diuretics, purging, smoking, steroids, laxatives)?
- Is the student on a restrictive diet (e.g., intake of limited foods, vegan diet)?

Pregnant and Parenting Teen

All of the above questions apply to the pregnant teen. In addition, the following questions should be considered:

- Is the student gaining sufficient weight/too much weight?
- Does the student smoke/take drugs?
- Is the student experiencing specific discomforts which affect her ability to take in adequate food?
- Does the student need breastfeeding counseling or support?
- Is the student knowledgeable about appropriate feeding recommendations for her child?

Exhibit 9-7 Danger Signs of Disordered Eating Patterns

Common Behaviors Associated With Disordered Eating	Danger Signs
Avoidance of meals	Abruptly stops joining family at dinner; constantly has an excuse to leave the table; regularly avoids meals; gradual but constant weight loss; frequent loss of appetite.
Exercises obsessively	Forces oneself to endure rigorous workouts on a regular basis; becomes extremely anxious at the thought of a missed exercise session.
Preoccupation with food	Discusses food at the exclusion of any other subject of interest; cooks a lot for others but not for self.
Hiding food or stealing money	Consumes food in such large quantities that he/she feels compelled to conceal behavior; resorts to thievery to buy food; may be bingeing and purging.
Low self esteem	Becomes overly critical of self: "I'm too fat" or "I never do anything right."
Striving for perfection	Places excessive demands on self to excel in all areas, from attaining the "perfect" body to excelling in recreational activities and school work.
Hiding weight loss	Wears large, layered clothing; may conceal heavy objects in pockets if to be weighed.
Drug use for weight control	Uses diuretics, laxatives, ipecac syrup to induce vomiting, or uses diet pills.

Exhibit 9-8 Key Nutrients Needed by Pregnant Adolescents

Nutrient	Amount	Special Considerations
Vitamin A	800 mg/day	Adolescent females often have low dietary intake of vitamin A due to lack of intake of fruits and vegetables.
Folacin (folic acid)	550 µg/day for 11 to 14-year-old; 580 µg/day for 15 to 18-year-old	Important for DNA and RNA synthesis. Essential during periods of increased cell replication and growth. Research has revealed that folic acid helps to decrease the risk of delivering a baby with neural tube defects such as spina bifida.
Vitamin B_6	2.2 mg/day	Often lacking in adolescent diets.
Riboflavin	1.6 mg/day	Helps cells use oxygen.
Ascorbic acid (vitamin C)	70 mg/day; 100 mg/day for smokers	Enhances the absorption of dietary iron by 2–4 times when both are taken at the same time.
Calcium	1600 mg/day if still in growing phase; 1200 mg/day if beyond growing phase	These amounts can be met by drinking 3–4 8-oz. cups of milk per day. Calcium is needed to meet fetal bone mineralization requirements and to prevent depletion of pregnant adolescents' calcium stores. Many African Americans, Asians, Native Americans, Hispanics, and Middle Easterners are unable to digest milk products, indicating the need for calcium supplements.
Iron	30–60 mg/day	Iron needs increase as pregnancy progresses. It is needed for growth of fetal tissue and maternal circulating hemoglobin mass. Due to the difficulty in meeting iron needs, it is recommended that all pregnant adolescents take a supplement of 30–60 mg/day of elemental iron.
Zinc	15 mg/day	Often lacking in adolescent diets, it is important for protein synthesis and growth.
Protein	54–56 g/day	Most adolescent females meet the RDA for protein. However, certain conditions may predispose a pregnant adolescent to be at risk for inadequate intake: low socioeconomic status, poor intake of total energy (if not enough calories are eaten, protein is catabolized for energy), or strict vegetarianism (exclusion of all animal products may limit the amount of protein intake).
Energy (calories)	+300 kcal/day during 2nd and 3rd trimester	The primary dietary requirement is to ensure adequate intake of vitamins, minerals, and protein. Additional calories may be required if still growing or has depleted body reserves; best indicator of adequate caloric intake is adequate weight gain.

Exhibit 9-9 Answers to Common Nutrition-Related Questions

Why is calcium so important for a child's growth and development?

Calcium plays a role in the proper functioning of the heart, muscles, and nerves and in maintaining blood flow. In children, calcium is largely used in building bone mass in order to support physical activity throughout life and to reduce the risk of bone fracture, especially that due to osteoporosis, the weakening of bone that can occur late in adulthood.

According to the National Institute of Child Health and Human Development (NICHD), positive calcium balance — taking in more than is lost throughout childhood, adolescence, and young adulthood — will allow bones to develop to their maximum density. It is during the teen years that bones grow and incorporate calcium most rapidly. By age 17, approximately 90% of adult bone mass is established.

Research sponsored by the NICHD has shown that a "window of opportunity" exists to add to the reserve of bone mass during the teen years. NICHD researchers have found that supplementing the daily diets of girls ages 12–16 with an extra 350 mg of calcium produced a 14% increase in their bone density. For every 5% increase in bone density, the risk of later bone fracture declines by 40%. Exhibit 9-4 lists the calcium content of certain foods.

How much milk should children drink?

The recommendation is 3–4 servings of dairy a day depending on age. There are 300 mg calcium in 1 cup of milk. Children ages 4–8 need 800 mg of calcium daily; those 9–18 require 1300 mg. While adequate calcium consumption is essential, excessive milk intake can interfere with the body's absorption of iron and lead to iron deficiency.

Dairy products have the highest concentration of calcium per serving, along with additional nutrients, such as vitamin D, to help the body better absorb calcium. (See Exhibit 9-4 for information about the calcium content of various foods.) Along with calcium, milk provides other essential nutrients, including vitamin D, potassium, and magnesium, all essential for optimal bone health and human development. Low fat or skim milk is preferable to whole milk for children over the age of 2.

As children become older, they often substitute soft drinks or juice drinks for milk; this is of special concern because the adolescent period is a critical time for bone formation. Most soft drinks contain the mineral phosphorus, which interferes with the body's ability to absorb calcium.

Other dairy products, including milk and cheese, are also excellent sources of calcium. Calcium-fortified products and calcium supplements can boost calcium intake for children who are unable or unwilling to consume dairy products.

Are some types of fat worse than others?

Fat is essential for many body processes, including hormone production and vitamin absorption. However, eating excessive amounts of fat is not healthy. School-age children should follow the dietary guidelines, which recommend that no more than 30% of calories be from fat and no more than 10% from saturated fat. Fats in foods contain some combination of 4 types of fatty acids: monounsaturated, polyunsaturated, saturated, and trans.

Both monounsaturated fats and polyunsaturated fats reduce blood cholesterol levels and thus lower the risk of heart disease when they replace saturated fats in the diet. Monounsaturated fats are found mainly in olive, peanut, and canola oils. Polyunsaturated fats are found mainly in safflower, sunflower, corn, soybean, and cottonseed oils and in some fish.

Saturated fats, found primarily in animal and dairy products and in some vegetable fats (e.g., coconut, palm, and palm kernel oils), have been shown to raise blood cholesterol levels in many people, thereby increasing their risk for heart disease.

Partially hydrogenated vegetable oils, such as those used in many margarines and shortenings, contain a particular form of unsaturated fat known as trans fatty acids. Trans fatty acids have physical properties generally resembling saturated fatty acids. Studies show that trans fatty acids act like saturated fat in the body, causing a rise in low density lipoproteins (LDL), the "bad" cholesterol, and a decrease in high-density lipoproteins (HDL), the cholesterol that protects against heart disease. Trans fatty acids are often found in cookies, crackers, dairy products, meats, and fast food. Because they are not essential and provide no known health benefit, there is no safe level of trans fatty acids; individuals should eat as little of them as possible, while consuming a nutritionally adequate diet.

Should we worry about children and cholesterol?

Excessive consumption of dietary cholesterol, a fatlike substance present in all animal foods (i.e., meat, poultry, fish, milk and milk products, egg yolks), can influence the body's level of serum cholesterol and increase the risk of coronary heart disease. Children should limit their intake of foods high in cholesterol as well as their intake of saturated fats and trans fats, which have also been shown to increase serum cholesterol.

It is estimated that at least one-quarter of children and adolescents have borderline or high serum cholesterol levels. Studies have shown children as young as 7 years old have fatty streaks on the walls of their blood vessels, representing the first stage of coronary heart disease. Children and adolescents with a significant family history of coronary heart disease or high lipid levels should be screened for elevated serum cholesterol. (For information on cholesterol screening, see Chapter 5.)

Is sugar harmful to children's health?

Current recommendations suggest that added sugars be limited in children's diets. Distinguished from natural sugars, such as lactose found in milk and fructose found in fruits, added sugars are those incorporated into foods and beverages during production. Major sources include candy, soft drinks, fruit drinks, pastries, and other sweets. Too much sugar intake increases calorie intake, which, combined with the fact that foods high in sugar are also often high in fat, can contribute to overweight. Sugar is strongly associated with tooth decay (see Chapter 15 on oral health). There is also evidence that people whose diets are high in added sugars have lower intakes of essential nutrients. Although excess sugar consumption should be avoided for all the reasons just stated, there is no evidence to support the common belief that there is a link between sugar and hyperactivity.

Should children give up salt?

High-salt diets may affect the development of hypertension (high blood pressure), especially in people with a family background of this condition. Nearly one in four Americans has high blood pressure, which increases risk for heart attack, stroke, and kidney disease. (See Chapter 5 for information on blood pressure assessment.) Excessive salt intake may also increase the amount of calcium lost in the urine and thus increase the body's need for calcium. Even though some sodium is essential to health, most Americans consume far too much. Health authorities recommend that children's sodium intake be 300–400 mg less than the recommended maximum adult amount of 2,300 milligrams a day.

Is fiber something children need to be concerned about?

Because young children often have constipation, ensuring an adequate intake of fiber is important. Fiber absorbs water, makes stools softer, and makes elimination easier. Some types of fiber have been shown to lower blood cholesterol. The Institute of Medicine has set an Adequate Intake (AI) level for fiber of 14 grams per 1,000 calories consumed.

Children who are not accustomed to eating a high-fiber diet should increase their fiber intake in small amounts to avoid the gas, diarrhea, or bloating which may result from adding too much fiber too quickly. Fluids should also be increased when increasing fiber intake. Exhibit 9-3 shows the amount of dietary fiber in various foods.

Are vegetarian diets approved for children?

A well-planned vegetarian diet can provide all the nutrients a child needs for growth and activity. Vegetarian diets (avoiding meat or fish but allowing dairy and eggs) have many positive health benefits. They are often high in fiber and low in cholesterol and saturated fat.

Of greater concern are children consuming vegan diets (avoiding any animal products, including dairy and eggs). Unless carefully constructed, a vegan diet may not provide enough of the necessary vitamins, minerals, and energy that a growing child/adolescent needs. Potential nutrient deficiencies include vitamins B_2 (or riboflavin), B_{12}, and D and the minerals calcium, iron, and zinc. B_{12} supplementation may be necessary because it is found naturally only in animal products. Children and adolescents on strict vegan regimens should have their diets analyzed by a qualified nutritionist to ensure they are getting all the nutrients necessary for proper growth and development.

Most vegetable protein is considered incomplete because it lacks one or more of the essential amino acids. This can be a concern for someone who does not eat meat or milk products. However, people who eat a vegetarian diet can still get all their essential amino acids by eating a wide variety of protein-rich vegetable foods which provide complementary amino acids. For example, peanuts alone do not provide all the necessary amino acids, but peanuts or peanut butter on whole-grain bread do, as do red beans and rice.

Should children take vitamin supplements?

Children who eat a well-balanced diet should have no need for vitamin supplements. Relying on vitamins instead of a balanced diet eliminates many other important constituents of foods, such as the fiber and disease-fighting phytochemicals found in fruits and vegetables. The American Academy of Pediatrics has identified the following groups for whom vitamin supplementation could be appropriate:

- abused or neglected children or those otherwise living in deprived circumstances;
- children with anorexia, bulimia, poor or eccentric appetites, or poor eating habits, and those who are on regimens to manage overweight;
- pregnant teenagers; and
- children who consume vegan diets.

Chapter 10

PHYSICAL FITNESS AND SPORTS

Overview of Physical Fitness and Sports

Scope of the Problem

National Guidelines

Legal/Regulatory Issues

Policy Implications for Schools

Age-Appropriate Fitness Activities

Components of Fitness

Sports Programs

Health Issues in Exercise and Sports

Sample Policies and Screening Tools

Summary

Resources: Coaching Education Programs

Resources: Curricula and Teaching/Fitness Promotion Materials

Resources: Massachusetts Agencies and Organizations

Resources: National Agencies and Organizations

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 10

PHYSICAL FITNESS AND SPORTS

OVERVIEW OF PHYSICAL FITNESS AND SPORTS

Physical fitness is important throughout life, but it is particularly crucial during childhood and adolescence.

A sedentary lifestyle is a major risk factor across the spectrum of preventable diseases that lower the quality of life and result in higher morbidity and mortality. The U.S. Department of Health and Human Services estimates that physical inactivity contributes to 400,000 preventable deaths (17% of total deaths) a year in the United States.

The President's Council on Physical Fitness and Sports (http://www.fitness.gov/hbpa.htm) reports that the risks associated with physical inactivity begin early. Among children and adolescents, physical inactivity is a strong contributor to overweight, and youth who are overweight are at heightened risk for type 2 diabetes, high blood pressure, high cholesterol, orthopedic problems, premature physical development, low self-esteem, asthma, sleep apnea, and gallstones.

Regular physical activity not only helps to protect children and teens from these overweight-associated problems, but also yields many additional benefits over the short and long term. Physical activity has been shown to improve emotional well-being by increasing self-esteem and reducing anxiety, stress, and depression (Fox, 1999). There is also growing evidence that regular physical activity enhances learning and school achievement. Children who engage in daily physical activity have shown better academic performance, improved attitudes toward school, higher concentration, and improved classroom behavior. Schools that offer intense physical activity programs have reported positive effects on academic achievement, including increased concentration and memory and improved test scores in mathematics, reading, and writing. These benefits were observed even when time spent on physical activity reduced time for academics (Strong et al., 2005; Shephard, 1997). There is also some evidence to suggest that physical fitness produces an overall cognitive benefit. In California, research covering 3 separate grade levels found a significant correlation between individual scores on standardized achievement tests and scores on a state-mandated fitness test (NASPE, 2004).

Maintaining regular physical activity throughout the school years also greatly increases the likelihood that an individual will continue to be active and physically fit as an adult, which may increase life expectancy and assist in the prevention and management of coronary heart disease, hypertension, diabetes, osteoporosis, overweight, and mental health problems. Both the habit of exercise and the physical capability are best formed during youth. Recent research indicates that for individuals to be *physically able* to exercise in adulthood, muscles need to be "activated" in childhood (Pennington Biomedical Research Center, 2005).

SCOPE OF THE PROBLEM

The percentage of children and teens in the United States who are overweight has tripled over the past 2 decades. Nearly one-third of children and adolescents are overweight or at risk of becoming overweight (Centers for Disease Control and Prevention). Experts agree that, while poor eating habits contribute to overweight among children and adolescents, much of the problem is attributable to lack of exercise. Television, video games, and computers now occupy much more of children's time — time that could otherwise be directed toward sports and other active pursuits.

Facts and figures collected by the U.S. Department of Health and Human Services, as well as the 2003 Massachusetts Youth Risk Behavior Survey (YRBS) conducted by the Massachusetts Department of Education among students in grades 9–12, document an increasingly sedentary lifestyle among young Americans. These facts are available in *Physical Activity and the Health of Young People,* a fact sheet compiled by CDC's Division of Adolescent and School Health, at http://www.cdc.gov/HealthyYouth/physicalactivity/facts.htm. YRBS results dating from 1995 through 2005 may be found at http://www.doe.mass.edu/cnp/hprograms/yrbs. The 2005 YRBS data are now available and indicate a continuation of the trend of decreasing physical activity with increasing age and grade level.

Despite mounting concerns about overweight in children and adolescents, as well as substantial evidence pointing to a positive correlation between physical fitness and academic performance, schools have been deemphasizing physical activity — cutting back on physical education classes and recess periods — in order to spend more time on academics. This is particularly true in middle, junior, and high schools: Only 17% of middle and junior high schools and 2% of senior high schools in the United States require daily physical activity for all students.

NATIONAL GUIDELINES

One objective established in Healthy People 2010 is to increase the proportion of the public and private schools that require *daily* physical education for all students, by 47% for middle and junior high schools and 150% for senior high schools. Other Healthy People 2010 objectives for increasing physical activity in children and adolescents include:

- increase by 35% the proportion of adolescents who engage in moderate physical activity for at least 30 minutes per workout and at least 5 days a week;
- increase by 85% the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness at least 20 minutes per workout and at least 3 days a week; and
- increase by 50% the proportion of adolescents who spend at least 50% of school physical education class time being physically active.

In 2004, the National Association for Sport and Physical Education (NASPE) published updated physical activity guidelines for children aged 5–12, increasing the recommended amount of daily physical activity to *at least* 60 minutes and up to several hours of age-appropriate physical activity on all or most days of the week. Since then, 60 minutes or more of moderate to vigorous physical activity every day for school-age youth has essentially become a national consensus standard, embedded in the Dietary Guidelines for Americans and reaffirmed in the physical activity recommendations for school-age youth developed by the expert panel convened by CDC's Division of Nutrition and Physical Activity and Division of Adolescent and School Health.

Other recommendations contained in the NASPE guidelines for children aged 5–12 include:

- Children should participate in several sessions of physical activity lasting 15 minutes or more each day.
- They should participate each day in a variety of age-appropriate physical activities designed to achieve optimal health, wellness, fitness, and performance benefits.
- Extended periods (i.e., 2 hours or more) of inactivity are discouraged for children, especially during the daytime hours.

In 2004, NASPE also issued an update to its 1996 national standards for physical education. The standards, outlined in the document *Moving into the Future: National Standards for Physical Education, 2nd Edition,* were revised in many ways to reflect both current research and current health concerns. One major change was the integration of issues related to diversity into all the standards.

The American Public Health Association's *Toolkit for Intervention of Overweight Children and Adolescents* (2003) places increasing daily physical activity among children and adolescents, through active promotion and protection of regular activity, at the top of its list of recommended interventions. The *Toolkit* makes the following suggestions for national/state/local education policy:

- Ensure daily PE classes for all students in grades K–12.
- Strengthen PE programs by improving teacher training and, hence, teacher qualifications. In particular, equip instructors with the knowledge and awareness they need to help students build self-confidence and self-esteem, in addition to lifelong physical activity skills.
- Foster communication and sharing of methods and results among different school communities, districts, and states — organize conferences, forums, and online discussions.

LEGAL/REGULATORY ISSUES

Wellness Policy Requirements

In the Child Nutrition and WIC Reauthorization Act of 2004 (Section 204 of PL 108-265), Congress established a new requirement that all school districts with a federally funded school meals program develop and implement wellness policies that address nutrition and physical activity by the start of the 2006–2007 school year (see also Chapter 9).

Physical Activity and Physical Education

The legal basis for health education in Massachusetts public schools is M.G.L. c.71, s.1, which states, in part: *"Instruction in health education shall include, but not be limited to: consumer health, ecology, community health, body structure and function, safety, nutrition, fitness and body dynamics, dental health, emotional development, and training in the administration of first aid, including cardiopulmonary resuscitation."*

Although M.G.L. c.69, s.1D directs the board of education and commissioner of education to develop academic standards for core academic subjects, which do not include health, the statute does include the following provision: *"Standards may provide for instruction in the issues of nutrition, physical education, AIDS education, violence prevention, and drug, alcohol and tobacco abuse prevention. The Board may also include the teaching of family life skills, financial management and consumer skills."* In 1999, the Massachusetts Department of Education (DOE) outlined such standards in the Massachusetts Comprehensive Health Curriculum Framework. The Framework, which incorporates health education, physical education, and family and consumer sciences, provides guidelines to schools for developing or adopting K–12 curricula.

M.G.L. c.71, s.3 states:

> *"Physical education shall be taught as a required subject in all grades for all students in the public schools for the purpose of promoting the physical well being of students. Instruction in physical education may include calisthenics, gymnastics and military drill; but no pupil shall be required to take part in any military exercise if his parent or guardian is of any religious denomination conscientiously opposed, and the school committee is so notified in writing; and no pupil shall be required to take part in physical education exercises if a licensed physician certifies in writing that in his opinion such physical education exercise would be injurious to the pupil."*

Laws Prohibiting Discrimination in School Sports

Massachusetts laws and DOE regulations at Chapter 603 CMR 26.06, as well as Title IX, provide that no student shall be denied the opportunity, in any implied or explicit manner, for participation in extracurricular activity because of race, color, sex, religion, national origin, or sexual orientation. Under limited circumstances, in accordance with 603 CMR 26.06(5) and (6), schools may establish separate teams for males and females.

Measures to Protect the Health of Student Athletes

M.G.L. c.71, s.57, and DPH regulations 105 CMR 200.200 require children planning to participate in competitive athletics to have an annual physical examination by a physician prior to such participation.

In addition, the Massachusetts Interscholastic Athletic Association (MIAA) requires that all students participating in interscholastic sports pass a physical examination within 13 months of the start of each season. Physical examinations must be performed by a duly registered physician, physician's assistant, or nurse practitioner (MIAA Rules and Regulations Governing Athletics, "The Blue Book," July 1, 2005 – June 30, 2007).

M.G.L. c.71, s.54A requires assignment of a physician or person trained in emergency medical care, as provided in M.G.L. c.111c, s.6, to interscholastic football games played by teams representing public secondary schools.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

POLICY IMPLICATIONS FOR SCHOOLS

School-based physical education programs may be the only opportunity for children and teens to get any exercise or learn about important health and wellness issues that can positively impact the rest of their lives. As one report puts it: "A quality, daily physical education program that reaches all children is simply the most cost-effective delivery system in the country to combat our childhood obesity epidemic" (PE4Life, 2004). However, sorting out state and federal laws, as well as national objectives, guidelines, and recommendations, into a working reality at the school level can be somewhat daunting. This section attempts to organize and present guidance in key areas,

including a discussion of a coordinated approach to physical activity, details about Massachusetts curriculum standards, and what to include in physical education programs and recess.

A Coordinated Approach to Physical Activity

School health programs are most effective in helping youth develop healthy lifestyles when all components are coordinated and when they reinforce each other. Active physical education classes and instruction in concepts and skills of physical activity and fitness should be reinforced and supplemented throughout the school day. The Massachusetts Coordinated School Health Model (CSH) (see Chapter 1) provides a template for how this can be accomplished.

Incorporating Physical Education and Physical Activity into the CSH Model

Health Services: Include physical activity in any health messaging by the school nurse or health center. Encourage students who opt out of physical education for medical reasons to seek alternate means of incorporating physical activity into their day.

Physical Education: Ensure physical education class time is well utilized and that programs meet the needs of all students, regardless of athletic ability or skill level.

Health Education: Include the benefits of physical activity as part of a regular health education curriculum.

Counseling, Psychological, and Social Services: Encourage exercise as a means of decreasing stress and anger. Be aware of and address the social stigmas that “nonathletic” students may face in physical education classes.

Family and Consumer Sciences Education: Teach students the importance of nutrition for optimal health and performance while exercising. Show students how to choose nutritious foods.

Parent/Community Involvement: Encourage students and parents to walk or bike to school (if safe). Ask the community to evaluate its open spaces to maximize benefit of physical activities. Ask parents to support physical activity at home and at school.

Health Promotion for Staff: Encourage school staff to set a positive example through actions such as participating in walking groups, exercising with students, and incorporating physical activity into regular classroom time. Encourage schools to open any available facilities both before and after school to accommodate busy schedules.

Food and Nutrition Services: Provide nutritious foods, including school meals. Include breakfast as part of school food services. Eliminate nonnutritive snacks for optimum performance in physical education class, athletics, and intramural sports. Teach students to make healthy food choices.

Safe and Healthful School Environment: In physical education class, maintain safe equipment and provide room for all students to participate. Encourage the use of mediation, negotiation, and stress-management skills.

Teachers, school nurses, and coaches can help students understand the importance of fitness to health, as well as the long-term benefits of being physically fit. Close coordination between physical education programs and health services helps to ensure that physical examinations required for sports are completed and that injuries are properly identified, referred, and documented so that preventive strategies can be implemented.

Curriculum Standards

The *Massachusetts Comprehensive Health Curriculum Framework* discusses recommended health education content in terms of 4 separate but interrelated strands: Physical Health, Social and Emotional Health, Safety and Prevention, and Personal and Community Health. Each strand includes several PreK–12 standards that define topic-oriented content and set expectations for knowledge and skills that students should acquire from their study in health.

Physical Activity and Fitness is a standard within the Physical Health strand that addresses physical development and wellness (the combination of activity and fitness in a healthy lifestyle). Topics generally covered in Physical Activity and Fitness include Motor Skill Development, Fitness, and Personal and Social Competency. Students can increase their awareness of the benefits of physical activity and fitness through knowledge of how the body functions. By identifying and experiencing the relationship of exercise to overall health, applying important social and safety skills in physical activity, integrating learning movement with other modes of learning, and practicing strategies to respond to stress, students can enhance their overall health and wellness.

Measurable competencies for Standard Physical Activity and Fitness in grades PreK–5 are:

Motor Skill Development

- Apply movement concepts including direction, balance, level (high, low), pathway (straight, curve, zigzag), range (expansive, narrow), and force absorption (rigid, with bent knees) to extend versatility and improve physical performance.
- Use a variety of manipulative (throwing, catching, striking), locomotor (walking, running, skipping, hopping, galloping, sliding, jumping, leaping), and nonlocomotor (twisting, balancing, extending) skills as individuals and in teams.
- Perform rhythm routines, including dancing, to demonstrate fundamental movement skills.

Fitness

- Identify physical and psychological changes that result from participation in a variety of physical activities.
- Explain the contributions of physical fitness to good health and an active lifestyle.
- Identify the major behaviors that contribute to wellness (exercise; nutrition; hygiene; rest and recreation; and refraining from using tobacco, alcohol, and other substances).

Personal and Social Competency

- Demonstrate responsible personal and social conduct used in physical activity settings.

Measurable competencies for Standard Physical Activity and Fitness in grades 6–8 are:

Motor Skill Development

- Use combinations of manipulative, locomotor, and nonlocomotor skills to develop movement sequences and patterns, both individually and with others.
- Demonstrate developmentally appropriate basic manipulative and advanced specialized physical skills, including throwing and catching different objects with both accuracy and force, hand and foot dribbling while preventing an opponent from challenging, and accurate striking proficiency.
- Perform a rhythm routine that combines traveling, rolling, balancing, and weight transfer into smooth flowing sequences with intentional changes in direction, speed, and flow.

Fitness

- Apply basic principles of training and appropriate guidelines of exercise to improve immediate and long-term physical fitness.
- Participate in activities that promote physical fitness, decrease sedentary lifestyle, and relieve mental and emotional tension.
- Explain the personal benefits of making positive health decisions, and monitor progress towards personal wellness.

Personal and Social Competency

- Apply advanced movement concepts and beginning game strategies to guide and improve individual and team performance.
- Demonstrate strategies for inclusion of all students in physical activity settings related to strength and speed.
- Describe the purpose and benefits of sports, games, and dance in modern society.

Measurable competencies for Standard Physical Activity and Fitness in grades 9–12 are:

Motor Skill Development

- Demonstrate developmentally appropriate competence (basic skills, strategies, and rules) in many, and proficiency in a few, movement forms and motor skills (team sports, aquatics, individual/dual sports, outdoor pursuits, self-defense, dance, and gymnastics).
- Demonstrate activities for warming up and cooling down before and after aerobic exercise.
- Apply concepts about sequential motor learning and development, biomechanics, exercise physiology, and sports psychology.

Fitness

- Demonstrate exercises in strength training, cardiovascular activities, and flexibility training.
- Identify the components of physical fitness and the factors involved in planning and evaluating fitness programs for individuals at different stages of life.
- Conduct a personally developed physical activity program.
- Meet developmentally appropriate health-related fitness benchmarks.

Personal and Social Competency

- Identify life-management skills and protective factors that contribute to achieving personal wellness health goals, including researching, evaluating, and implementing strategies to manage personal wellness, monitor progress, and revise plans.
- Understand how activity participation patterns are likely to change throughout life, and identify strategies to deal with those changes, including a plan for lifelong wellness.
- Apply safe practices, rules, procedures, and sportsmanship etiquette in physical activity settings, including how to anticipate potentially dangerous consequences and outcomes of participation in physical activity.
- Define the functions of leadership in team sports (increasing motivation, efficiency, and satisfaction).

Selected examples of how this standard may translate into activities may be viewed online at http://www.doe.mass.edu/frameworks/health/1999/physical.html#fitness.

In addition, elements of the Consumer Health and Resource Management Standard within the Personal and Community Health Strand relate to decisions about allocation of time for physical

fitness. For details about this standard, see http://www.doe.mass.edu/frameworks/health/1999/manage.html.

Local Selection of Health Education Curricula

In Massachusetts, health education curricula and textbooks are chosen locally. Most school districts have established processes to review and select texts and curricula. Ideally, this process involves a school health advisory committee, team, or work group that includes health education specialists, curriculum specialists, physical education and family/consumer sciences teachers, school nurses, school physicians, school counselors, school administrators, food service administrators, students, parents, and community representatives. (See Chapter 2 for a discussion of the school health advisory committee.) By reviewing the entire scope and sequence of the curriculum under consideration, the team can ensure that it addresses essential knowledge and skills, that there are no gaps or unnecessary redundancies in topic coverage, and that skills and concepts introduced at earlier grades are reinforced in later grades. Including parents and community members in curriculum review teams is important to ensure that the curriculum addresses health topics of local concern and is consistent with community values.

Recently, several curricula or school programs focused on healthy eating and physical activity have also shown evidence of effectiveness (Gortmaker et al., 1999a and 1999b). See the section "Resources: Curricula and Teaching/Fitness Promotional Materials" for some examples.

Physical Education Programs

Physical education programs should include a range of activities and concepts in the areas of conditioning and physical fitness: individual and dual sports, team sports, gymnastics, rhythm and dance, track and field, aquatics, and outdoor activities. These programs must be planned, sequential, and implemented in ways that maximize the goals of physical education *and* ensure the health and well-being of all students.

Performed with the proper duration, frequency, and intensity, a program of fitness can:

- promote sensory stimulation for the development of cognitive function;
- improve the functioning of the central nervous, skeletal, muscular, cardiovascular, and metabolic systems;
- enhance self-concept, self-esteem, and social competence;
- improve psychosocial functioning; and
- prevent some diseases.

CDC's *Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People* (1997) identifies the following measures as essential to the effectiveness of school-based physical education programs:

- Require physical education for all students from kindergarten through 12th grade on a daily basis.
- Increase the amount of time that students are active in physical education classes.
- Eliminate or sharply reduce the practice of granting exemptions for physical education classes.
- Emphasize enjoyable participation in lifelong physical activity.
- Offer a diverse range of competitive and noncompetitive activities that are appropriate for different ages and abilities.
- Develop student skills and confidence to participate in physical activity.

The National Association for Sport and Physical Education (NASPE) defines a high-quality physical education program as one that includes opportunity to learn, meaningful content, and appropriate instruction, as defined below:

- **Opportunity to Learn** includes:
  - instructional periods totaling 150 minutes per week (elementary) and 225 minutes per week (middle and secondary school);
  - a qualified physical education specialist providing a developmentally appropriate program; and
  - adequate equipment and facilities.
- **Meaningful Content** includes:
  - instruction in a variety of motor skills that are designed to enhance the physical, mental, and social/emotional development of every child;
  - fitness education and assessment to help children understand, improve, and/or maintain physical well-being;
  - development of cognitive concepts about motor skill and fitness;
  - opportunities to improve emerging social and cooperative skills and gain a multicultural perspective; and
  - promotion of regular amounts of appropriate physical activity throughout life.
- **Appropriate Instruction** includes:
  - full inclusion of all students;
  - maximum practice opportunities for class activities;
  - well-designed lessons that facilitate student learning;
  - out-of-school assignments that support learning and practice;
  - no physical activity for punishment; and
  - regular assessment to monitor and reinforce student learning.

Additional detail on each of these areas is available in NASPE's quality physical education (QPE) documents: *National Standards for Physical Education; Appropriate Practice Documents; Opportunity to Learn Documents;* and *Assessment Series.* These documents are available at http://www.aahperd.org/naspe.

What Schools Can Do

NASPE has also created simple forms that schools can use to assess their current physical education programs and to plan improvements. These forms can be found at http://www.aahperd.org/NASPE/pdf_files/2004PEchecklist.pdf.

The American Public Health Association (APHA) *Toolkit for Intervention of Overweight Children and Adolescents* (2003) suggests that schools consider limiting class size to facilitate teacher-student interaction. It also advises keeping lessons exciting and relevant to the ever-changing cultural norms of children, "tweens" (ages 9–12), and teenagers. This can best be accomplished, the organization suggests, by involving students as well as parents, caregivers, and PE teachers in evaluation and improvement of the physical education curriculum. (The online resources Gateway to Education Materials (GEM), sponsored by the U.S. Department of Education, and PE Central, which collects lesson ideas from physical education teachers across the country, may be helpful starting points for such efforts. See Resources section "Curricula and Teaching/Fitness Promotion Materials.") Additional suggestions from APHA's Toolkit include:

- **Target students' unique interests, skills, and needs.** Design lesson plans sensitive to specific ages, genders, ethnicities, and cultures, and have every student set personal, attainable goals, which can be used to chart progress, build commitment, and boost confidence. Help adolescents develop personal fitness programs they can adhere to during after-school hours.

- **Avoid intimidating or marginalizing students who are unskilled in a sport, afraid of competition, or self-conscious about their athletic abilities.** Expose students to a diverse mix of physical activity approaches, including team-oriented challenges, individual fitness activities, structured and unstructured games, sports competitions, performance, and play.
- **Improve access to, and quality of, school PE facilities, including fields, courts, tracks, pools, gymnasiums, and exercise/weight rooms.** If applicable, extend hours of operation, renovate old facilities, and purchase new technology/equipment for students.
- **Supplement PE with a strong health education program that teaches students about their bodies and the connection between exercise, body, mind, and health.** Integrate lessons about physical activity into traditional school subjects, such as math, science, biology, history, and language arts. Most important, help teachers help students to understand the mind-body connection: Move your body, move your mind.

The complete APHA Toolkit may be found online at http://www.apha.org/ppp/obesity_toolkit/.

Physical educators are increasingly focusing on relevance rather than tradition, and participation rather than competition. The current national trend is to teach activities that prepare children for a lifetime of health, with emphasis on teaching noncompetitive team sports skills. For example:

- A basketball skills class may be taught with a basketball for every student, thus eliminating waiting in line. If students learn backyard basketball games involving 2 to 4 people, such as knockout, hot shot, or 2 on 2, they never have to wait for the opportunity to play in a full-court game. Playing with 2 basketballs simultaneously adds an aerobic component.
- Participation in volleyball class may be enhanced by modifying the rules to use unlimited hits, 2 serves, or a softer ball. Students can aerobicize volleyball by playing 2 on 2, 3 on 3, or 4 on 4.
- Traditional large-group games popular with younger students, such as “capture the flag,” can be altered to remove the elimination factor and increase the aerobic factor. Instead of sending the students to “jail” or out of a game, students can be required to jog a distance and immediately return to play.

Regardless of the activities offered in a physical education curriculum, health-related fitness is the underlying theme. Students should understand fitness concepts and be able to apply them to their own lives.

Fitness Reports

Providing periodic, private reports to students and parents, along with encouraging individual goal setting, promotes ongoing improvements in fitness levels. Conducting periodic fitness tests provides students with feedback and data for development of individual fitness goals (see section “Sample Policies and Screening Tools”). Some states mandate fitness testing. As part of an ongoing physical education program, children are physically prepared in each fitness component so they can safely complete the assessments (Council on Physical Education for Children, 2000).

Recess

Over the past decade, a combination of factors, including safety concerns and a desire to improve academic performance, have led many school districts in Massachusetts and across the country to cut back or eliminate time allotted for recess periods. In 1999, according to estimates, approximately 40% of school districts nationwide had either reduced or abolished recess. Recent research on the physical, social, emotional, and academic importance of unstructured play and exercise, along with growing awareness of the health problems resulting from lack of activity, argues strongly against such policies.

The 2000 Report to the President from the Secretary of Health and Human Services and the Secretary of Education, *Promoting Better Health for Young People Through Physical Activity and Sports,* made a case for the importance of recess. A comprehensive review of research found unequivocal evidence that recess benefits elementary schoolchildren in a variety of ways that no other single outlet, including structured physical education classes, can provide. Documented benefits include health and physical development; brain development; learning, social, and emotional development; and language development (Waite-Stupiansky, 2001).

Both the American School Health Association (ASHA) and NASPE's Council on Physical Education for Children (COPEC) specifically recommend against treating structured physical education classes as a substitute for recess. ASHA's position statement on this subject may be found at http://www.ashaweb.org/pdfs/resolutions/recess.pdf. The COPEC position paper, titled *Recess, An Essential Component,* is available at http://www.aahperd.org/naspe/pdf_files/pos_papers/current_res.pdf.

What Schools Can Do

In the position paper mentioned above, COPEC makes a number of specific recommendations, including:

- Schools should develop schedules that provide for supervised, daily recess in pre-kindergarten through grades 5 or 6.
- Recess should not be viewed as a reward but as a necessary educational support component for all children. Students should not be denied recess as a means of punishment or as a way to make up work.
- Periods of moderate physical activity should be encouraged and facilitated, while also recognizing that recess should provide opportunities for children to make choices.
- Schools should provide the facilities, equipment, and supervision necessary to ensure that the recess experience is productive, safe, and enjoyable. Developmentally appropriate equipment, as outlined in the NASPE *Guidelines for Facilities, Equipment and Instructional Materials,* should be made available. (See also Chapter 4 for safe playground guidelines and Chapter 13 for injury prevention.)

Additional Measures to Encourage Physical Activity Among Students

In addition to providing quality physical education programs and recess, schools can promote physical activity in a variety of other ways. One possibility is to encourage physical education teachers and classroom teachers to collaborate on development of brief aerobic activities that can be used to break up the school day (CDC, 1997; Summerfield, 1998).

Many experts suggest keeping school gymnasiums and other facilities open and accessible, particularly during the late-afternoon and early-evening hours — a time when children and adolescents can be active but often are not, and a time when students who are home alone are most likely to take part in juvenile crime, violence, drug abuse, and other high-risk behaviors.

Even better than simply making facilities available, schools can also develop — or encourage teachers, parents, and other community volunteers to establish — developmentally appropriate "active" after-school and weekend programs such as dance classes, aerobics, kickboxing, nature/hiking clubs, biking clubs, and traditional team and intramural sports. Funding for extracurricular activities can be obtained from school fundraisers or by soliciting financial support from local community centers and health departments. In Massachusetts, the state Action for Healthy Kids team is working with schools and students toward the goal of adequate cocurricular physical activity programs, including fully inclusive intramural programs and physical activity clubs.

For more information, visit the program website, http://actionforhealthykids.org/state_profile.php?state=MA.

What Else Schools Can Do

Other actions schools can consider in order to promote physical activity among students include:

- allowing use of school facilities by community agencies that sponsor physical activity programs;
- facilitating training programs for volunteer youth coaches;
- providing a listing of community physical activity resources to students and/or parents;
- sponsoring parent-child activity programs at school; and
- encouraging walking and/or bicycling to school, if safety permits. (CDC has developed *Kids Walk-to-School,* a guide that encourages individuals and organizations to work together to identify and create safe walking routes to school.)

See Exhibit 10-1 for Tips for Teachers on Supporting Physical Fitness through Creative Play, which lists a variety of ways that teachers can help children to get more physical activity into each day.

AGE-APPROPRIATE FITNESS ACTIVITIES

Elementary School

For the elementary schoolchild, success in work or play is influenced by the ability to move effectively and efficiently. In this age group, movement is one of the most important means of nonverbal communication, expression, and learning. Because children's metabolic systems are ideal for short bursts of vigorous activity followed by periods of low-level activities or rest, the recommended minimum physical activity of 60 minutes per day can be accumulated in multiple short sessions of activity (15 minutes minimum) rather than the continuous exercise periods appropriate for adults. Long periods of inactivity are discouraged (Corbin, 2003).

Aerobic activities that have been identified by the Pennington Biomedical Research Center as ideally suited for children include:

Kite flying	Freeze tag	Trampoline
Running	Hacky sack	Biking
Softball	Hopscotch	Football
Tag	Ping-Pong	Frisbee
Basketball	Jumping rope	Hiking
Bowling	Swimming	Kickball
Catch	T-Ball	

Initially, the primary focus of a child's program should be on developing proper technique and learning the exercises. Effective strategies for teaching and motivating children to exercise are available at the American Council on Exercise website, http://www.acefitness.org.

Middle School

For the middle school student, regular physical activity and successful participation in physical education class can enhance self-esteem. Students at this level need instruction in the relationship between health and fitness concepts and physical activity. Variety in programming, interdisciplinary connections, a noncompetitive environment, relevance to healthy lifestyle choices, and enjoyment are characteristics of a successful middle school experience.

High School

At the high school level, students must also be prepared to solve their own fitness problems. Learning opportunities should include situations that encourage students to create their own exercise programs. Senior high students can design and evaluate their own workouts, as well as create and evaluate dietary plans. To become responsible for their own fitness, students must learn how to set realistic goals and evaluate them, how to apply fitness knowledge, and how to assess their own fitness status.

NASPE has developed a set of booklets that describe appropriate physical education practices for elementary, middle, and high school. These materials include guidelines for curriculum design, learning experience, fitness activities, fitness testing, assessment, participation levels, forming groups, competition, and more. These Appropriate Practice documents may be found at http://www.aahperd.org/naspe/template.cfm?template=peappropriatepractice/index.html.

COMPONENTS OF FITNESS

According to the American Heart Association, an effective fitness program focuses on 4 fitness elements: muscle strength, muscle endurance, flexibility, and cardiovascular endurance. These elements can be pursued not only through traditional sports but also through individual activities, such as skating and jumping rope, and everyday activities, such as gardening and climbing stairs. There are 3 basic types of structured exercise:

- **Aerobic exercise:** Also called endurance or cardiovascular exercise, aerobic exercise is any exercise that increases breathing rate and heartbeat. The fitness level of the cardiovascular system is probably one of the most important measures of general fitness, because it is an indication of how effectively the heart and lungs respond to the stress of activity. Cardiovascular fitness directly correlates with risk of heart disease. Aerobic exercise is important for the health of the heart and the skeletal system. Aerobic activities include running, bicycling, swimming, and walking.
- **Resistance exercise:** Also known as strength training, resistance exercise increases muscle strength and mass, bone strength, and metabolism. Methods include free weights, weight machines, calisthenics like push-ups or chin-ups that involve pulling against one's own body weight, and resistance tubing, a newer form of resistance exercise that utilizes an elastic band. Supervised weight lifting that emphasizes proper techniques is supported for older preteens. One set of 12 to 20 repetitions of a lighter weight is all it takes to increase muscle strength and endurance in youth. It is recommended that strength training be done every other day, with at least one day of rest between sessions to allow muscles to rebuild. Additional information on resistance/strength training, including exercises for specific age groups, is available from the American Council on Exercise at http://www.acefitness.org.
- **Flexibility or stretching exercise:** This kind of exercise focuses on "range of motion" — how the body can be safely bent and stretched. Younger people benefit from flexibility exercises because many types of sports require a flexible, limber body. Flexibility exercises include many types of stretching and floor exercises. Examples of stretching exercises for young athletes, developed by the American Academy of Orthopaedic Surgeons, may be found at http://orthoinfo.aaos.org in the sports/exercise section.

Any aerobic or resistance exercise program includes three phases:

1. **Warm-up:** A way of gradually heating up the working muscles, which reduces the risk of injury and prepares the body for exercise;
2. **Exercise:** The actual program, with a frequency, duration, and intensity appropriate to the individual's fitness level; and

3. **Cool-down:** A gradual decrease in the intensity of effort, followed by gentle stretching exercises.

Individuals are advised to consult a physician before engaging in any exercise, and all exercise programs should be of a frequency, intensity, time/duration, and type (see FITT formula below) that matches the individual's *current* ability, not the ability the individual had in the past or would like to have. Maintaining accurate exercise records is also important: A workout log of the amount of weight lifted or number of miles run or walked enables an individual to assess progress and change the program as fitness improves.

The FITT Formula
F = Frequency (days per week)
I = Intensity (how hard: easy, moderate, or vigorous)
T = Time (amount per session or day)
T = Type (ideally, a balanced program of activities)

Methods of Measuring Exercise Intensity

Exercise intensity can be measured by 4 methods:

1. **The Talk Test:** At a *light* intensity level, a person should be able to sing while performing the activity. At a *moderate* intensity level, a person should be able to carry on a conversation comfortably during the activity. An activity may be considered *vigorous* if a person is too winded to carry on a conversation.

2. **Pulse/Heart Rate:** A person can determine intensity of exercise by measuring pulse rate during physical activity. For *moderate-intensity* physical activity, a person's target heart rate is 50% to 70% of his or her "maximum heart rate," which is determined by subtracting the person's age from 220. For example, a 12-year-old's maximum heart rate would be calculated as 220 – 12 years = 208 beats per minute (bpm). The 50% and 70% levels would be:

50% level: 208 x 0.50 = 104 bpm
70% level: 208 x 0.70 = 146 bpm

Therefore, moderate-intensity physical activity for a 12-year-old will be activity that keeps the heart rate between 104 and 146 beats per minute.

Vigorous-intensity physical activity is activity that raises heart rate to 70% to 85% of maximum (146 bpm to 177 bpm for a typical 12-year-old). *Note, however, that sustaining a heart rate at 85% of maximum for prolonged periods of time is not safe or beneficial.*

Target heart rate range should be based on current fitness level and can be adjusted as fitness improves. Those at lower fitness levels should exercise at 60% to 65% of maximum, at medium fitness levels 70% to 75%, and at high fitness levels at 80% to 85%. As fitness improves, the resting pulse rate should decrease.

The pulse can be taken at the neck, wrist, or chest; many children find the neck easiest. To measure pulse at the wrist, index and middle fingers — not the thumb — should be used, with a light pressure. Beats per minute can be measured by taking a full 60-second count of heartbeats or by taking a count for 30 seconds and multiplying by 2. The count should start on a beat, which is counted as "zero."

3. **Rating of Perceived Exertion:** The Borg Rating of Perceived Exertion (RPE) is a subjective measure: An individual engaging in exercise selects a number that corresponds to how strenuous the exercise feels, combining all sensations and feelings of physical stress, effort, and fatigue.

Perceived exertion is based on the physical sensations a person experiences during physical activity, including increased heart rate, increased respiration or breathing rate, increased sweating, and muscle fatigue. Although subjective, a person's perceived exertion rating may provide a fairly good estimate of the actual heart rate during physical activity (Borg, 1998).

The Borg scale ranges from 6 to 20, where 6 means "no exertion at all" and 20 means "maximal exertion." An RPE between 12 and 14 suggests that physical activity is being performed at a moderate level of intensity. During activity, students can use the Borg scale to self-monitor how hard their bodies are working and to adjust intensity accordingly by speeding up or slowing down.

A high correlation exists between RPE times 10 and the actual heart rate during physical activity (Borg, 1998). For example, if a person's RPE is 12, then the heart rate should be approximately 12 x 10, or 120, beats per minute. Note that this calculation is only an approximation of heart rate, and the actual heart rate can vary quite a bit depending on age and physical condition. The Borg Rating of Perceived Exertion is also the preferred method to assess intensity among individuals who take medications that affect heart rate or pulse.

4. **Metabolic Equivalent (MET):** The metabolic equivalent, or MET, is a unit signifying the amount of oxygen (or energy) the body uses during physical activity (Ainsworth et al., 2000), with 1 MET equaling the energy the body uses when sitting quietly. Any activity that burns 3 to 6 METs is considered moderate-intensity physical activity; above 6 METs is considered vigorous-intensity activity.

Although certain activities are commonly characterized as light-, moderate-, or vigorous-intensity activities, many can be classified in any of the 3 categories depending on how hard a person does it. For example, a person can bicycle at intensities ranging from very light to very vigorous. CDC offers a table, titled *General Physical Activities Defined by Level of Intensity* (http://www.cdc.gov/nccdphp/dnpa/physical/pdf/PA_Intensity_table_2_1.pdf), which characterizes physical activities at different levels of effort based on METs.

It is important to note that energy expenditure per kilogram of body mass at rest or during exercise is greater in children than adults and varies with pubertal status, so the standard (adult-based) definition of a MET (or the CDC table defining intensity levels of activities) is inadequate for energy estimation in children who have not yet reached full developmental maturity (Harrell et al., 2005). Additional information on measurement of physical activity intensity is available online at http://www.cdc.gov/nccdphp/dnpa/physical/measuring/index.htm.

SPORTS PROGRAMS

Responsibly conducted sports programs in schools can help students stay physically fit and encourage healthy habits for a lifetime. Such programs can also help students develop a positive self-image, promote inclusiveness, teach the value of team effort, promote respect for rules, and encourage a constructive attitude toward competition and good sportsmanship.

Equal Opportunity

Any positive message regarding fair play is negated when opportunity is denied to a particular group of students. *Keeping Score: Girls' Participation in High School Athletics in Massachusetts,* a 2004 report from the National Women's Law Center (NWLC) and the Harvard Prevention Research Center on Nutrition and Physical Activity (HPRC), found that girls in Massachusetts high schools have faced persistent discrimination in sports participation opportunities and treatment of their teams. The report found widespread instances of discrimination that included failures to provide girls with teams, harassment of girls who played on boys' teams when no girls' teams were offered,

poor quality of facilities, lack of adequate uniforms, and scheduling of games during non-prime-time hours.

As a result of this discrimination, girls consistently lag behind boys in their participation in physical activity. All girls are affected, but participation is lowest for African American and Hispanic girls.

In addition to missing out on the social and emotional benefits of playing sports, the health costs to girls of being sidelined are considerable. Participation in physical activity has been shown to decrease overweight and obesity-related illnesses and is also associated with lower prevalence of depression, pregnancy, sexual activity, smoking, and drug use. Female student athletes also have higher grades and graduation rates than their nonathletic peers.

Title IX of the Education Amendments of 1972 prohibits sex discrimination in competitive athletics and physical education. Massachusetts state laws also provide additional protection for gender equity in athletics. The Equal Rights Amendment to the Massachusetts Constitution, the Massachusetts Anti-Discrimination Law, and the Equal Opportunity Regulations, which implement the Anti-Discrimination Law, all prohibit discrimination on the basis of sex in a range of educational activities, including athletics.

What Schools Can Do

Schools should take all necessary measures to ensure that no students are excluded from sports programs on the basis of gender, race, or disability, either overtly or through more subtle forms of harassment. Coaches should be strongly cautioned that such bias will not be tolerated.

HEALTH ISSUES IN EXERCISE AND SPORTS

Pre-Participation Physical Evaluation

DPH regulations and the Massachusetts Interscholastic Athletic Association (MIAA) both require a pre-sports physical examination. The physical examination form recommended by MIAA's Sports Medicine Committee is in the MIAA White Book, available online at http://www.miaa.net.

What Schools Can Do

In addition to the pre-sports physical exam, Georgetown University's Bright Futures project suggests the following screening and assessment measures:

- Obtain a complete medical history of the child or adolescent, including (1) history of previous injuries and hospitalizations, (2) family history of sudden cardiac death, and (3) history of dizziness or fainting during or after physical activity. Any condition affecting sports participation should be shared with the school nurse.
- Measure the adolescent's height and weight, and plot these on a standard growth chart (such as the CDC Growth Charts). Deviations from the expected growth pattern (e.g., a major change in growth percentile) should be evaluated for indication of potential problems (e.g., difficulties with eating). Height and weight measurements provide reliable indicators of nutrition and health status. Changes in weight reflect an adolescent's short-term nutrition intake and serve as general indicators of nutrition status and overall health. Low height-for-age may reflect long-term, cumulative nutrition or health problems.
- If desired, use body mass index (BMI) as a screening tool to determine nutrition status and overall health (see Chapter 5: Health Assessment).
- Assess the student's general health status, including medical conditions and recent illnesses. Assess the cardiovascular, pulmonary, and musculoskeletal systems. Measure the student's blood pressure.

- Determine whether the student is taking any medications.
- Assess the student's physical maturity.
- If an adolescent girl, assess onset of menstruation.
- If a child, assess motor skill development.
- Assess level of physical activity by determining the student's weekly physical activity or by evaluating how the student's physical fitness compares to national standards (e.g., by reviewing performance on the President's Council on Physical Fitness and Sports test).

For more information, refer to the document *Bright Futures in Practice: Physical Activity,* available online at http://www.brightfutures.org/physicalactivity/mc/overview.html.

Children with Special Health Conditions

Physical activity and participation in sports benefit all children, even those with serious chronic disease. Every child should be encouraged to become as active as possible, within the limits of safety.

Most chronic health problems do not preclude participation in physical fitness activities and sports. Children with asthma, for example, can usually participate in sports, although they may have to carefully follow their doctor's guidelines for medication administration before exercising. Students with well-controlled seizure disorders can enjoy almost all sports, except those where a fall could cause a serious injury (AAP, 1999). Formal, organized sports programs and strenuous activities may present more complex issues. This topic is addressed in a 2001 policy statement from the American Academy of Pediatrics' Committee on Sports Medicine and Fitness titled "Medical Conditions Affecting Sports Participation." This statement, which includes information on medical conditions that may affect sports participation and tables classifying sports by degree of strenuousness, is available online at http://aappolicy.aappublications.org/cgi/content/full/pediatrics;107/5/1205 (see also References).

Any restrictions should be noted in the child's Individualized Health Care Plan and/or school health record, and the school nurse should fully inform physical education teachers and coaches of these restrictions (with prior consent by the parents/guardians or student, if appropriate). In addition, a pre-sports physical exam, as noted above, is required by Massachusetts law and the Massachusetts Interscholastic Athletic Association (MIAA). It may also be advisable to conduct assessment testing prior to any school-based activity program.

The Brockport Physical Fitness Test (BPFT) may be of assistance in planning an appropriate program. The BPFT is a criterion-referenced health-related test of physical fitness appropriate for use with youngsters with disabilities. BPFT was initially developed as part of the U.S. Department of Education's Project Target, which had as its goal the development of a health-related test of physical fitness for youth aged 10–17 with disabilities. BPFT recommends test items and health-related criterion-referenced standards for youngsters with mental retardation, spinal cord injuries, cerebral palsy, blindness, congenital anomalies, and amputations. It also recommends a process to develop tests appropriate for youngsters with other disabilities and health-related needs (Winnick & Short, 2004). (See next section on Sample Policies and Screening Tools for further information on fitness tests.)

In addition to following medical and safety considerations, physical activities should be structured in a way that allows a student with limitations to participate successfully and without frustration while developing muscle strength and coordination.

Heat-Related Illness

Teachers, coaches, and parents should be aware of the dangers of heat stress on children and adolescents, which include dehydration (see below) and heat-related illnesses including heat cramps, heat exhaustion, and heatstroke. According to the Committee on Sports Medicine and Fitness of the American Academy of Pediatrics, children produce more heat than adults, relative to body mass, for the same exercise, and they absorb ambient heat more quickly. Children's sweating capacity is also considerably lower, reducing their ability to dissipate body heat by evaporation.

What Schools Can Do

To determine when heat and humidity make strenuous exercise inadvisable for youth, the Mayo Foundation for Medical Education and Research advises that coaches should use a device called a psychrometer to measure wet bulb globe temperature (WBGT), which is the standard index of temperature and humidity combined. The AAP's guidelines for safe outdoor activity based on WBGT are:

- **WBGT below 75° F:** All activities are allowed, but supervising adults should be alert for heat-related symptoms.
- **WBGT between 75° F and 78.6° F:** Children should take rest periods in the shade for long enough to cool off, and they should drink fluids every 15 minutes.
- **WBGT between 79° F and 84° F:** Children at risk of dehydration and heat-related illnesses should stop playing and get out of the heat.
- **WBGT 85° F and above:** Cancel all outdoor athletic activities.

The AAP recommends the following whenever children and adolescents are exercising in high heat or high humidity:

- Reduce intensity of activities that last 15 minutes or more whenever relative humidity, solar radiation, and air temperature are above critical levels.
- Limit intensity and duration of exercise at the beginning of a strenuous exercise program and gradually increase over a period of 10 to 14 days to allow acclimatization to the heat.
- Ensure that the child or adolescent is well hydrated before prolonged physical activity, and enforce periodic drinking during the activity, even if the child/adolescent does not feel thirsty. (See also discussion of dehydration in the next section.)
- Advise that clothing should be light-colored, lightweight, and limited to one layer of absorbent material to facilitate evaporation of sweat.

Note: During outdoor activities, consideration must also be given to sun safety. See Chapter 5 for further information.

Dehydration

Dehydration decreases muscle strength, endurance, and coordination while increasing the risk of cramps and heatstroke. It can lead to serious health consequences. The intensity and duration of a sports event, the environmental temperature, an individual's level of fitness, and the state of an individual's hydration prior to exercise will contribute to the extent of dehydration. Voluntary dehydration — the purposeful restriction of fluids or use of measures such as purging and diuretic use to produce weight loss — is an increasingly common and dangerous practice among athletes in weight-sensitive sports, according to the Committee on Sports Medicine and Fitness of the American Academy of Pediatrics. Repeated bouts of dehydration and rehydration, common among wrestlers who compete according to weight class, are also dangerous and may harm kidneys.

Ample consumption of fluids is recommended before and during exercise. Feelings of thirst mean that the body is already dehydrated. Nutrition specialists with Kansas State University Research and Extension recommend:

- 14 to 22 ounces of fluid about 2 hours before exercise;
- 6 to 12 ounces of fluid every 15 to 20 minutes during exercise; and
- 16 to 24 ounces of fluid after exercise for every pound of body weight lost during exercise.

Caffeinated beverages should be avoided. Plain water may be adequate, although the AAP recommends fluids that contain carbohydrates to replenish glycogen stores, as well as sodium chloride. According to the AAP, the best way to assess hypohydration (less than normal total body water) is to weigh the athlete before and after exercise. The amount of weight lost should be replaced with an equal volume of fluids before the next exercise session, since dehydration may be cumulative.

Injury Prevention

According to the National SAFE KIDS Campaign, more than 3.5 million children age 14 and under receive medical treatment for sports injuries each year. Almost one-third of all injuries incurred in childhood are sports-related. Nearly half of all sports injuries to students in middle school and high school are overuse injuries, which can result from stress on immature bones, inadequate rest after an injury, and poor training or conditioning. More than half of all sports injuries occur during practice.

What Schools Can Do

- Ensure that coaches and teachers are certified in sports first aid and cardiopulmonary resuscitation. They should also be trained in the use of automatic external defibrillators (AEDs) in schools that have these devices.
- Require that coaches and teachers be certified by the national governing body of their sport or by the National Youth Sports Coaches Association, American Coaching Effectiveness Program.
- Establish a policy compelling the coach or teacher to collaborate with the school nurse to ensure that students' pre-participation physical examinations are completed and health needs are addressed in a coordinated fashion. (See Chapter 8 for sports-related infectious diseases and chapters 6, 7, and 9 for discussion of life-threatening allergies.)
- Ensure that the coach or teacher has a written emergency plan in case of an accident, and that it been rehearsed. (See Chapter 2 for discussion of emergency planning.)
- Provide adequate liquids to keep students hydrated.
- Ensure that a first-aid box and ice are available at the site of all activities.
- Include a sports injury prevention course for students as part of the health education program.
- Require use of appropriate protective gear, including helmets, sports eyeguards, faceguards and shields, mouth guards, and padding at all games and practices. (See Chapter 13 for more information on injury prevention and protective gear and Chapter 15 for a discussion of mouth guards.)
- Provide regular pre-activity warmups, stretching, and cooldown exercises.
- Make sure students know, understand, and comply with all rules.
- Have the coach or teacher explain the conditioning program before signups so that students know what is expected of them physically.

Both general and sport-specific guidelines for minimizing the risk of injury in high school athletics are available from the National Athletic Trainers' Association at http://www.nata.org/publications/brochures/minimizingtherisks.htm.

Compulsive Exercising

Although most attention these days is concentrated on trying to motivate sedentary children and teens to exercise enough, some young people develop the opposite problem and exercise or practice sports so much that they actually begin to wear down their bodies (Gavin, 2004). Coaches, PE teachers, and school nurses need to be alert to signs of compulsive exercising.

Anyone can be affected by this condition, although it tends to be more common in athletes and teenage girls as well as those who suffer from eating disorders. Among athletes, compulsive exercising most often occurs among those involved in sports that focus on weight and appearance, although the problem may develop for other reasons. As with eating disorders, compulsive exercise may be a means of coping with anxiety, stress, depression, anger, or low self-esteem. It may offer a way, at least temporarily, to gain a sense of control over one's life. It may also result from pressure from a parent or coach to succeed at a sport

In its 2003 publication *A Comprehensive Study of Sports Injuries in the U.S.,* the research firm American Sports Data reports that "the competitive culture of most organized youth sports is now so intense, it threatens not only the morale and character development of children, but their physical safety as well." The authors note that not only are children being started on regimens of organized sports earlier — often under the age of 5 — but that it is not unusual for slightly older children to be encouraged to "play on three different soccer teams, enduring three-hour practices, year-round." The full report is available online at http://www.americansportsdata.com/sports_injury1.asp.

Health repercussions of compulsive exercise can include damage to muscles, bones, and joints; loss of muscle and bone (especially if the over-exercising child or adolescent is not eating properly); extreme fatigue; and heart damage. Girls who exercise compulsively may experience amenorrhea (cessation of menstrual periods) and increase their risk of developing osteoporosis. Excessive focus on exercise or sports practice may also lead to social withdrawal or isolation, as well as behavioral health problems such as other forms of obsession, low self-esteem, anxiety, and depression.

What Schools Can Do

The following suggestions are based (with some adaptation) on advice offered by the Virtual Children's Hospital:

- Train coaches, teachers, and school nurses to recognize signs of eating disorders and exercise disorders.
- Educate parents/guardians about the health dangers of premature and/or excessive involvement in sports.
- Encourage coaches to train students in ways that focus on health instead of weight, while strongly discouraging dangerous weight loss or exercise.
- Advise coaches, trainers, and parents/guardians to avoid putting too much pressure on athletes to succeed.
- Provide information to coaches, trainers, and parents/guardians about athletes' nutritional needs.
- Encourage collaboration between the school nurse and coaches/trainers, so the latter can seek advice if they suspect a child has an eating or exercise disorder.
- Educate students about the negative effects, on both health and athletic performance, of excessive weight loss and/or excessive exercise.
- Encourage coaches to coach in ways that build athletes' self-esteem.

SAMPLE POLICIES AND SCREENING TOOLS

Model Wellness Policies

A working group convened by the National Alliance for Nutrition and Activity (NANA) has developed a comprehensive set of Model Local School Wellness Policies on Physical Activity and Nutrition to assist local school districts as they write and implement wellness policies, in accordance with the Child Nutrition and WIC Reauthorization Act of 2004 (see also Chapter 9). Sixty health, nutrition, physical activity, and education organizations assisted with or supported the development of these model school wellness policies, available at http://www.schoolwellnesspolicies.org.

School districts are encouraged to use the model policies as a starting point from which to develop a more specialized plan that meets local needs and reflects the district's unique characteristics, including socioeconomic status of student body; school size; rural or urban location; and presence of immigrant, dual-language, or limited-English students.

A district may find it more practical to phase in wellness policies gradually than to implement a comprehensive set of nutrition and physical activity policies all at once. Compromises might be required as district decision makers consider challenges such as limited class time, curriculum requirements, and funding and space constraints.

Other Policy Development Tools

Fit, Healthy, and Ready to Learn: A School Health Policy Guide, developed by the National Association of State Boards of Education (NASBE) with CDC support, provides direction on establishing an overall policy framework for school health programs and specific policies on various topics. Designed for use by states, school districts, and individual schools, public or private, the policy guide is organized around sample policies that reflect best practices, which can be adapted to fit local circumstances. Also included are explanations of the points addressed in the sample policies, excerpts of actual state and local policies, notable quotations, and other valuable information that supporters can use to justify school health policies. Sample policies to encourage physical activity may be found on the NASBE website at http://www.nasbe.org/HealthySchools/fithealthy.html.

School Self-Assessment and Planning Tools

Tools that schools may find helpful for conducting a baseline assessment of the existing physical activity environment and for planning program improvements include:

1. NASPE's *Opportunity to Learn Standards,* for elementary, middle school, and high school physical education, addresses program elements essential to providing full opportunity for students to learn in physical education. Documents include self-evaluation checklists that can be used in planning, evaluation, program development, and advocacy efforts by anyone interested in the availability of quality physical education. These documents are available at http://www.aahperd.org/naspe/template.cfm?template=publications-nationalstandards_3.html.

2. CDC's *School Health Index* (SHI) is a multidimensional self-assessment and planning tool, consisting of 8 modules corresponding to the 8 components of the national coordinated school health program. The tool addresses 4 major health topics — physical activity, nutrition, tobacco, and safety. The online version enables schools to select the specific categories they wish to include in their evaluation without completing the whole SHI.

Although CDC believes that a comprehensive approach to school health is the most effective way to influence students' health behaviors, it recognizes that some schools will want to address only one topic or just a few topics at a time.

There is no single way to implement the SHI; each school should find the approach that best meets its needs. However, it is essential that the SHI be completed in a *coordinated* effort, and the first step in using it should be to identify a team of people involved in a variety of school areas to complete the self-assessment and planning process. This may be an entirely new team, an existing team such as the school health council, or a new subcommittee of the school health advisory committee. Broad and diverse participation is important for meaningful assessment and successful planning and implementation.

3. CDC's *Physical Activity Evaluation Handbook* provides state and local agencies and community-based organizations with tools for evaluating physical activity programs. It outlines the 6 basic steps of program evaluation and illustrates each step with physical activity program examples. Appendices provide information about physical activity indicators, practical case studies, and additional evaluation resources.
The handbook is available online at
http://www.cdc.gov/nccdphp/dnpa/physical/handbook/index.htm.

(Information on needs assessment and evaluation is also contained in Chapter 2.)

Curriculum Analysis Tools

CDC's Physical Education Curriculum Analysis Tool (PECAT) sets out useful guidelines for schools or districts that need to select, review, or develop a written physical education curriculum. PECAT provides step-by-step instructions for bringing together a curriculum review team, as well as scoring sheets for team members to use in rating the extent of topic coverage and the depth of student skills practice. This tool may be used in conjunction with Consumer Guide to Health Education Curricula, an interactive online program that contains expert analyses of critical components of health education curricula. For more information about these tools, see the home page of CDC's Division of Adolescent and School Health (DASH) at
http://www.cdc.gov/HealthyYouth.
An extensive list of recently developed assessment resources is also contained in NASPE's 2004 national standards documents, *Moving into the Future: National Standards for Physical Education,* 2nd edition. One of the tools mentioned is NASPE's own *Assessment Series for K–12 Physical Education,* but the organization notes that much work has been done in this area in recent years and that many tools exist that are compatible with its content standards. For more information, see http://www.aahperd.org/naspe/template.cfm?template=publications-nationalstandards.html.

Fitness Assessment Tools

Various organizations have developed tests to estimate current status on the various defined components of physical fitness. Two of the most commonly used assessments in the U.S. are:

- **FITNESSGRAM/ACTIVITYGRAM from the Cooper Institute.** Created more than 20 years ago by the Cooper Institute, FITNESSGRAM uses criterion-referenced standards, called Healthy Fitness Zones, to determine students' fitness levels based on what is optimal for good health. This tool is endorsed by the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD), the country's largest professional group of physical educators, as its recommended test of health-related physical fitness for school-age youngsters (http://www.fitnessgram.net).
- **The President's Challenge Physical Fitness Test and Health Fitness Test.** The Physical Fitness Test recognizes students for their level of physical fitness in 5 events: curl-ups or partial curl-ups, shuttle run, endurance run/walk, pull-ups or right angle push-ups,

and V-sit or sit and reach. The Health Fitness Test recognizes students who maintain a healthy level of fitness. It also offers schools an alternative to the traditional Physical Fitness Test. Fitness File, a free tool available to those administering the President's Challenge physical or health fitness tests, allows instructors to track student progress, calculate awards, print out reports, and make recommendations, with spreadsheets to facilitate data entry of students' information and test scores, calculation of each student's award, and production of reports to send home with students. For more information about Fitness File, call 800-258-8146 or e-mail preschal@indiana.edu.

SUMMARY

Regular physical activity, in the form of physical education, sports participation, and unstructured play, is beneficial to the health of children and adolescents now and throughout their lifetimes, helping them to maintain healthy weight, build muscle strength and bone mass, and maintain cardiorespiratory health. It also reduces anxiety and stress, builds self-esteem, and promotes learning. Schools can play an important part in promoting students' fitness by educating students about the importance of physical activity to lifelong health; by providing high-quality, safe, and inclusive physical education and sports programs; and by working with families and community groups to make exercise attractive and accessible.

RESOURCES: COACHING EDUCATION PROGRAMS

American Sport Education Program
Human Kinetics
1607 North Market Street
P.O. Box 5076
Champaign, IL 61825
Phone: 217-351-5076
Fax: 217-351-2674

National Youth Sport Coaches Association
National Alliance for Youth Sports
2050 Vista Parkway
West Palm Beach, FL 33411
Phone: 561-684-1141
Fax: 561-684-2546
Website: http://www.nays.org

Program for Athletic Coaches Education
Institute for the Study of Youth Sports
I.M. Sports Circle, Room 313
Michigan State University
East Lansing, MI 48824
Phone: 517-355-7620
Fax: 517-353-5363

RESOURCES: CURRICULA AND TEACHING/FITNESS PROMOTION MATERIALS

Action for Healthy Kids — What's Working
Website: http://actionforhealthykids.org/resources_topic.php?topic=18
Action for Healthy Kids offers profiles of successful school-based interventions, programs, and practices, each evaluated according to a set of 10 essential criteria AFHK has developed to help determine whether an approach will be successful for a particular school. For more information on criteria, the special report *Criteria for Evaluating School-Based Approaches to Nutrition and Physical Activity* is available for download.

American Heart Association
Website: http://www.americanheart.org/presenter.jhtml?identifier=3003412
This AHA webpage provides an array of physical activity lesson plans and activities by grade level.

Appropriate Practices in Movement and PE
National Association for Sport and Physical Education
Website: http://www.aahperd.org/naspe/template.cfm?template=peappropriatepractice/index.html
NASPE's Appropriate Practices booklets describe physical education practices that are most beneficial to children. They include guidelines for curriculum design, learning experience, fitness activities, fitness testing, assessment, participation levels, forming groups, competition, and many others. Titles are:

- *Appropriate Practices in Movement Programs for Young Children Ages 3–5*
- *Appropriate Practices for Elementary School Physical Education*
- *Appropriate Practices for Middle School Physical Education*
- *Appropriate Practices for High School Physical Education*

NASPE holds the copyright on the Appropriate Practice documents. One copy of the material may be downloaded for personal, noncommercial use or educational (classroom) use.

Brain Breaks: A Physical Activity Idea Book for Elementary Classroom Teachers
Michigan Department of Education
Website: http://www.emc.cmich.edu/brainbreaks
Brain Breaks is the product of a collaboration between the Michigan Department of Education; the Michigan Association of Health, Physical Education, Recreation, and Dance (MAHPERD); Albion College; Concordia College; and the University of Michigan. The booklet, available online, was developed to help increase the number of physical activities implemented in elementary classrooms. Activities address cognitive, psychomotor-skills, fitness, and psychosocial-skills domains.

Energizers
North Carolina *Physical Education is Active* Initiative
Website: http://www.ncpe4me.com/index.html
Energizers are classroom-based physical activities that integrate physical activity with academic concepts. These short (roughly 10-minute) activities, developed by East Carolina University's Activity Promotion Laboratory, are available for free download.

Everybody Move
Massachusetts Governor's Committee on Physical Fitness and Sports (MGCPFS)
Website: http://www.everybodymove.org
The MGCPFS youth initiative *Everybody Move* is a statewide public awareness campaign to educate children about the benefits of being physically fit and to encourage participation in fun activities that provide positive fitness results.

Fitness for Life
Website: http://www.fitnessforlife.org
Fitness for Life is a comprehensive program designed to help teens take responsibility for their own activity, fitness, and health and to prepare them to be physically active and healthy throughout their lives. This program includes the nation's best-selling student textbook and a complete set of integrated teacher and student resources, including Web support. *Fitness for Life* is also fully integrated with Physical Best and FITNESSGRAM/ACTIVITYGRAM. NASPE offers training workshops on using the *Fitness for Life* program.

GEM, The Gateway to Educational Materials℠
Website: http://www.thegateway.org
GEM is a nonprofit consortium effort designed to provide educators with quick and easy access to thousands of educational resources found on various federal, state, university, nonprofit, and commercial websites. The Gateway contains a variety of educational resource types in a host of areas including physical education, from activities and lesson plans to online projects and assessment items. Materials included are reviewed and evaluated for authoritativeness, quality, and availability based on criteria developed and adopted by the GEM Consortium. GEM is sponsored by Ed.gov.

Healthy Choices
Websites: http://www.mass.gov/dph/fch/nutrition/health_choice.htm
http://www.jumpupandgo.com
Healthy Choices is a school-based nutrition and physical activity program designed to promote healthy eating practices and regular physical activity of middle-school-age children. The program is a collaborative effort of Massachusetts DPH and Blue Cross Blue Shield of Massachusetts's *Jump Up and Go* Initiative (see also Chapter 9).

Healthy K.I.D.S.
Website: http://www.childrenshealthfund.org
Developed by clinicians from the Children's Health Fund's National Children's Health Project Network, the Healthy K.I.D.S. program consists of English and Spanish newsletters providing simple, accurate, and culturally relevant information on fitness and nutrition for middle-school students.

HeartPower! Online
American Heart Association

HeartPower! Online is the AHA's curriculum-based program for teaching about the heart and how to keep it healthy. Topics covered are physical activity, nutrition, living tobacco-free, and how the heart works. Material is organized by curriculum, lifestyle message, format, and grade level.

Kidnetic.com
Website: http://www.kidnetic.com
Kidnetic.com is a healthy-eating and active-living website designed for kids aged 9–12 and their families. It is also a resource for health professionals and educators to use when working with patients and students. Kidnetic.com works in partnership with the President's Council on Physical Fitness and Sports and America On The Move™.

MyPyramid Plan
U. S. Department of Agriculture
Website: http://www.mypyramid.gov/mypyramid/index.aspx
Online tools that translate the principles of the 2005 Dietary Guidelines for Americans and other nutrition standards developed by the U.S. Department of Agriculture and Department of Health and Human Services. These include:

- **MyPyramid Tracker,** an online dietary and physical activity assessment tool that provides information on an individual's diet quality and physical activity status. The Food Calories/Energy Balance feature automatically calculates energy balance by subtracting energy expended through physical activity from food calories/energy intake.
- **Assess Your Physical Activity** evaluates an individual's physical activity status and provides related energy-expenditure information and educational messages. After providing a day's worth of physical activity information, a user receives an overall score that looks at the types and duration of physical activities performed and then compares this score to the physical activity recommendation for health.

Operation FitKids™ Curriculum
American Council on Exercise
Website: http://www.acefitness.org/ofk/programming.aspx
The Operation FitKids Youth Fitness Curriculum is now available at no cost to educators as a public service of the American Council on Exercise. Designed for educators interested in integrating health and fitness into classroom learning, this 7-lesson module was developed to teach students in 3rd, 4th, and 5th grades the extreme dangers of being overweight and the importance of a healthy and active lifestyle. It is available in an easy-to-download PDF format.

PE Central
P.O. Box 10262
Blacksburg, VA 24062
E-mail: pec@pecentral.org
Phone: 540-953-1043
Fax: 800-783-8124
Website: http://www.pecentral.org
A website for health and physical education teachers, parents, and students that aims to provide the latest information about developmentally appropriate physical education programs for children and youth. The site offers online activities and tools for students, as well as lesson and assessment ideas for teachers. It also provides information about adapted PE, including suggestions for modifications in sports and activities to allow fuller participation by those with health conditions.

Physical Best
Website: http://www.humankinetics.com/physicalbest/coordinated.cfm
Physical Best, a program of resources and training for K–12 physical educators, is a health-related fitness education program developed by the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) and offered through the National Association for Sport and Physical Education (NASPE). It provides teachers with materials for implementing health-related fitness education, including curriculum development and health-related fitness activities.

Planet Health
Website: http://www.hsph.harvard.edu/prc/proj_planet.html
Planet Health, an interdisciplinary curriculum from the Harvard Prevention Research Center on Nutrition and Physical Activity, focuses on improving the health and well-being of students in grades 6–8 while building and reinforcing skills in language arts, math, science, social studies, and physical education. Through classroom and physical education activities, Planet Health aims to increase activity, improve dietary quality, and decrease inactivity. It may be ordered from Human Kinetics at http://www.humankinetics.com/products/showproduct.cfm?isbn=0736031057 or 800-747-4457.

Powerful Bones. Powerful Girls. The National Bone Health Campaign™
Department of Health and Human Services' Office on Women's Health
Centers for Disease Control and Prevention
National Osteoporosis Foundation
Website: http://www.cdc.gov/powerfulbones
Located on the CDC website, this kid-friendly program offers information, games, and testimonials to encourage girls to begin thinking at an early age about the importance of strong bones.

President's Challenge Awards Program
Website: http://www.fitness.gov
A program of the President's Council on Physical Fitness and Sports, the President's Challenge Awards Program is designed to help physical educators and youth-serving organizational leaders encourage children and adolescents aged 6–17 to make a commitment to increased physical activity and a lifetime of fitness. The program strives to help children and adolescents adopt and maintain a fit and active lifestyle while receiving presidential recognition for their efforts. All children and adolescents are recognized as winners in activity and fitness.

SPARK (Sports, Play and Active Recreation for Kids) Programs
438 Camino Del Rio South, Suite 110
San Diego, CA 92108
Phone: 800-SPARK-PE or 619-293-7990
Fax: 619-293-7992
E-mail: spark@sparkpe.org
Website: http://www.sparkpe.org
SPARK's research-based physical activity/nutrition programs are designed to address specific age groups from early childhood through high school. Each program is a complete package of curricula, staff development, extensive follow-up consultation, and equipment (via SPARK Programs' corporate sponsor, Sportime). The original SPARK study was supported by the NIH's Heart, Lung and Blood Institute.

Take 10!®
International Life Sciences Institute (ILSI) Center for Health Promotion
2220 Parklake Drive, Suite 528
Atlanta, GA 30345
Phone: 770-934-1010
Fax: 770-934-7126
E-mail: take10@ilsi.org
Website: http://www.take10.net
TAKE 10!® is a classroom-based physical activity program for K–5 students created by teachers and linked to academic learning objectives. Its materials contain safe and appropriate 10-minute physical activities.

VERB Campaign
Centers for Disease Control and Prevention
Phone: 770-488-6480
E-mail: youthcampaign@cdc.gov
Websites: http://www.cdc.gov/youthcampaign/index.htm and http://www.VERBnow.com
VERB™ is a national, multicultural, social marketing campaign coordinated by CDC that encourages "tweens" (young people aged 9–13) to be physically active every day and provides resources and activity

ideas for use in classrooms, PE programs, and clubs. Materials and links are available at the CDC youth media campaign website; http://www.VERBnow.com is the site for tweens.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS

Harvard Prevention Research Center on Nutrition and Physical Activity
Harvard School of Public Health
677 Huntington Avenue, 7th Floor
Boston, MA 02115
Phone: 617-432-3840
Fax: 617-432-3875
E-mail: hprc@hsph.harvard.edu
Website: http://www.hsph.harvard.edu/prc

Harvard School of Public Health
677 Huntington Avenue
Boston, MA 02115
Phone: 617-432-3952
Website: http://www.hsph.harvard.edu

Massachusetts Action for Healthy Kids
Phone: 617-734-6750
Website: http://actionforhealthykids.org/state_profile.php?state=MA
Massachusetts Action for Healthy Kids, the state affiliate to National Action for Healthy Kids, has implemented a number of initiatives to promote healthy eating and physical activity in schools.

Massachusetts Alliance for Health, Physical Education,
Recreation, and Dance (MAHPERD)
P.O. Box 182
Attleboro, MA 02703
Phone: 774-254-4657
Fax: 508-342-7020
Website: http://www.ma-hperd.org
MAHPERD is a nonprofit, professional membership association of educators working to develop and maintain greater understanding, appreciation, and value of health, physical education, recreation, and dance in Massachusetts schools, thereby increasing cooperation and support of key agencies and individuals for quality in these essential educational programs.

Massachusetts Department of Education
School Safety, Nutrition and Health
350 Main Street
Malden, MA 02148-5023
Phone: 781-338-6480
Website: http://www/doe.mass.edu

Massachusetts Department of Public Health
Bureau of Family and Community Health
250 Washington Street
Boston, MA 02108-4619
Phone: 617-624-6060
Fax: 617-624-6062

Nutrition and Physical Activity Unit
Website: http://www.mass.gov/dph/fch/nutrition/about.htm
School Health Services
Website: http://www.mass.gov/dph/fch/schoolhealth/index.htm

MassMoves
Website: http://www.mass.gov/dph/fch/massmoves/index.htm
MassMoves, the DPH statewide initiative designed to raise awareness and encourage participation in physical activity among Massachusetts residents, is implemented in collaboration with partners across the Commonwealth.

Massachusetts Governor's Committee on Physical Fitness and Sports
P.O. Box 447
Boston, MA 02117
Phone: 617-972-1838
E-mail: info@masportsandfitness.org
Websites: http://www.govfitness.com and http://www.everybodymove.org
The Committee is a 30-member team of fitness, marketing, and medical professionals appointed by the governor to work with his administration to promote the vital role that sports and physical fitness play in the overall health and well-being of Bay State residents, particularly children.

Massachusetts Interscholastic Athletic Association
33 Forge Parkway
Franklin, MA 02038
Phone: 508-541-7997
Fax: 508-541-9888
E-mail miaa@miaa.net
Website: http://www.miaa.net/sportsmedicine/

Massachusetts on the Move (MOM)
Website: http://www.americaonthemove.org/Affiliates.asp?AffiliateID=24
MOM is a grassroots initiative coordinated by Tufts University's Friedman School of Nutrition Science and Policy to bring together businesses, hospitals, schools, local communities, and others from across the state to promote healthier lifestyle choices that will increase physical activity and improve eating habits.

Massachusetts Partnership for Healthy Weight
Massachusetts Department of Public Health
Phone: 617-624-5470
Fax: 617-624-5075
E-mail: mass.partnership@state.ma.us
Website: http://www.cdc.gov/nccdphp/dnpa/obesity/state_programs/massachusetts.htm

Massachusetts Public Health Association (MPHA)
434 Jamaicaway
Jamaica Plain, MA 02130
Phone: 617-524-6696
Fax: 617-524-5225
E-mail: mpha@mphaweb.org
Website: http://www.mphaweb.org
MPHA's Child and Adolescent Health Section, designed to increase awareness of public health issues affecting children, provides a forum for education, advocacy, and communication among public health professionals. A current priority is its Healthy Children/Healthy Schools Obesity Prevention Campaign.

Northeastern Center for the Study of Sport in Society
716 Columbus Avenue
Boston, MA 02120
Phone: 617-373-4025
Fax: 617-373-4566 or 617-373-2092
E-mail: sportinsociety@neu.edu
Website: http://www.sportinsociety.org
Sport in Society increases awareness of sport and its relation to society and develops programs that identify problems, offer solutions, and promote the benefits of sport.

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS

American Academy of Orthopaedic Surgeons
6300 North River Road
Rosemont, IL 60018-4262
Phone: 847-823-7186
Fax: 847-823-8125
Website: http://orthoinfo.aaos.org
The American Academy of Orthopaedic Surgeons offers helpful information on sports and exercise safety for youth at this informational website, including a brochure titled "Play it Safe: A Guide to Safety for Young Athletes."

American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD)
1900 Association Drive
Reston, VA 22091-1598
Phone: 703-476-3400 or 800-213-7193
Website: http://www.aahperd.org
AAHPERD is the largest organization of professionals supporting and assisting those involved in physical education, leisure, fitness, dance, health promotion, and education and all specialties related to achieving a healthy lifestyle. Member associations are: American Association for Health Education, National Association for Sport and Physical Education (NASPE), National Association for Girls and Women in Sport, National Dance Association, American Association for Leisure and Recreation, and American Association for Active Lifestyles and Fitness.

> **Publication:** The document *Appropriate Practices for Elementary School Physical Education* developed by NASPE's Council on Physical Education for Children (COPEC) provides detailed and valuable guidance on structuring an effective, inclusive, and enjoyable physical education program.

American College of Sports Medicine (ACSM)
P.O. Box 1440
Indianapolis, IN 46206-1440
Phone: 317-637-9200, ext. 138
Fax: 317-634-7817
E-mail: publicinfo@acsm.org
Website: http://www.acsm.org
ACSM advances and integrates scientific research to provide educational and practical applications of exercise science and sports medicine. *Current Comments* documents available on the website provide relevant and useful information on dozens of topics related to sports medicine and exercise science. ACSM brochures offer expert health and fitness resources in easy-to-read formats. Many titles are accessible free in PDF format.

American Council on Exercise
4851 Paramount Drive
San Diego, CA 92123
Phone: 800-825-3636 or 858-279-8227
Fax: 858-279-8064
Website: http://www.acefitness.org
ACE is the largest nonprofit fitness certification and education provider in the world. Widely recognized as "America's Authority on Fitness," ACE continually sets standards and protects the public against unqualified fitness professionals and unsafe or ineffective fitness products, programs, and trends.

American Heart Association
National Center
7272 Greenville Avenue
Dallas, TX 75231
Phone: 800-AHA-USA-1 (800-242-8721)

Website: http://www.americanheart.org
A listing of local offices in Massachusetts is available on the AHA website's Contact section.

American Public Health Association (APHA)
800 I Street, NW
Washington, DC 20001
Phone: 202-777-2742
Fax: 202-777-2534
TTY: 202-777-2500
E-mail: comments@apha.org
Website: http://www.apha.org

American School Health Association
7263 State Route 43 / P.O. Box 708
Kent, OH 44240
Phone: 330-678-1601
Fax: 330-678-4526
E-mail: asha@ashaweb.org
Website: http://www.ashaweb.org

Bright Futures Project
Georgetown University
P.O. Box 571272
Washington, DC 20057-1272
Phone: 202-784-9556
Fax: 202-784-9777
E-mail: Brightfutures@ncemch.org
Website: http://www.brightfutures.org

Publication: The guide *Bright Futures in Practice: Physical Activity (2001)* provides developmental guidelines on physical activity from infancy through adolescence, as well as current information on screening, assessment, and counseling to promote physical activity and meet the needs of health professionals, families, and communities.

Centers for Disease Control and Prevention
Division of Nutrition and Physical Activity
4770 Buford Highway NE, MS/K-24
Atlanta, GA 30341-3717
Phone: 770-488-5820
Fax: 770-488-5473 (general) or 888-232-4674 (to obtain publications by fax)
E-mail: ccdinfo@cdc.gov
Website: http://www.cdc.gov/nccdphp/dnpa
CDC's Division of Nutrition and Physical Activity provides science-based activities for children and adults that address the role of nutrition and physical activity in health promotion and the prevention and control of chronic diseases. The scope of DNPA programs includes epidemiology, applied research, public health policy, surveillance, community interventions, evaluation, and communications. The Physical Activity for Health Professionals section offers information and tools for the health professional, including key reference documents; data and surveillance resources; and information to assist with program planning and evaluation, community development, and promotion of physical activity programs.

Healthy Youth
P.O. Box 8817
Silver Spring, MD 20907
Phone: 888-232-4636
Fax: 888-282-7681
E-mail: HealthyYouth@cdc.gov
Website: http://www.cdc.gov/HealthyYouth/index.htm

Youth and school-focused resources including data, planning tools (e.g., the School Health Index), and other health education resources are available on this website.

National Center for Chronic Disease Prevention and Health Promotion
Division of Nutrition and Physical Activity
4770 Buford Hwy NE, MS/K-24
Atlanta, GA 30341-3717
Phone: 770-488-5820
Fax: 770-488-6000

Publication: The *Physical Activity Evaluation Handbook* outlines the 6 basic steps of program evaluation and illustrates each step with physical activity program examples. Appendices provide information about physical activity indicators, practical case studies, and additional evaluation resources. It may be ordered at 770-488-5820 or online at http://www.cdc.gov/nccdphp/dnpa/physical/handbook/index.htm.

Cooper Institute
12330 Preston Road
Dallas, TX 75230
Phone: 972-341-3200
Website: http://www.cooperinst.org
The Cooper Institute conducts research in epidemiology, exercise physiology, behavior change, hypertension, children's health issues, obesity, nutrition, and other health issues. FITNESSGRAM®/ACTIVITYGRAM® were developed by the Cooper Institute as a means for teachers and fitness professionals to systematically report the results of physical activity and fitness assessments to youth and their parents. FITNESSGRAM is a health-related fitness assessment and ACTIVITYGRAM is a 3-day physical activity recall assessment.

Disabled Sports USA
451 Hungerford Drive, Suite 100
Rockville, MD 20850
Phone: 301-217-0960
TDD: 301-217-0963
Fax: 301-217-0968
Website: http://www.dsusa.org
DS/USA offers nationwide sports rehabilitation programs to anyone with a permanent disability.

HealthMPowers
1655 Tullie Circle NE
Atlanta, GA 30329
Phone: 404-785-7251
Fax: 404-785-7259
Website: http://www.healthmpowers.org
HealthMPowers is a coordinated initiative designed to increase health knowledge and promote health-enhancing behaviors among Georgia youth by providing state-of-the-art programming in the school setting. Although the initiative works specifically in the state of Georgia, its website contains information and resources helpful to schools anywhere.

Human Kinetics
P.O. Box 5076
Champaign, IL 61825-5076
Phone: 800-747-4457
Fax: 217-351-1549
E-mail: info@hkusa.com
Websites: http://www.humankinetics.com and
http://www.hkeducationcenter.com (online education center)

Human Kinetics, the premier knowledge integrator in the physical activity field, produces textbooks, consumer books, software, videos, audiocassettes, journals, and distance-education courses for physical activity and health professionals.

National Alliance for Nutrition and Activity
Website: http://www.nanacoalition.org
NANA, made up of more than 300 organizations, advocates national policies and programs to promote healthy eating and physical activity to help reduce the illnesses, disabilities, premature deaths, and costs caused by diet- and inactivity-related diseases such as heart disease, cancer, high blood pressure, diabetes, and obesity. One of NANA's primary goals is to cultivate champions for nutrition, physical activity, and obesity prevention in Congress and federal agencies. Efforts include supporting effective education programs, advocating adequate funding for programs, and promoting environmental changes that help Americans eat better and be more active.

National Association for Health and Fitness (NAHF)
c/o Be Active New York State
65 Niagara Square, Room 607
Buffalo, NY 14202
Phone: 716-583-0521
Fax: 716-851-4309
E-mail: wellness@city-buffalo.org
Website: http://www.physicalfitness.org/index.html
NAHF is a nonprofit organization that exists to improve the quality of life for individuals in the United States through the promotion of physical fitness, sports, and healthy lifestyles, by fostering and supporting governors' and states' councils and coalitions that promote and encourage regular physical activity.

National Association for Sport and Physical Education (NASPE)
(See American Alliance for Health, Physical Education, Recreation, and Dance.)

National Center for Education in Maternal and Child Health (NCEMCH)
A Research Center of Georgetown University's Public Policy Institute
Georgetown University
P.O. Box 571272
Washington, DC 20057-1272
Phone: 202-784-9770
Fax: 202-784-9777
E-mail: mchlibrary@ncemch.org
Website: http://www.ncemch.org
NCEMCH connects people with information and with each other. The Center's virtual library meets the needs of a diverse maternal and child health (MCH) community. The NCEMCH website provides visitors with online access to NCEMCH initiatives, educational resources, and publications; MCH databases; bibliographies; and knowledge paths. One of the MCH library knowledge paths is Children and Adolescents and Physical Activity.

National Center on Physical Activity and Disability (NCPAD)
1640 W. Roosevelt Road
Chicago, IL 60608-6904
Phone: 800-900-8086
Fax: 312-355-4058
Website: http://www.ncpad.org
NCPAD, an information center concerned with physical activity and disability, believes that being physically active is good for *every* body. Information and resources include guidelines to consider before starting any kind of exercise program as well as fact sheets on many popular activities, games, recreational pursuits, and sports that have been adapted to allow people with disabilities to participate as fully as they wish.

National Coalition for Promoting Physical Activity (NCPPA)
Phone: 202-454-7521

Website: http://www.ncppa.org
NCPPA is a group of national organizations that independently address a host of issues pertaining to physical activity, including health/science, education, environments, population-specific outreach, and activity behavior. Lead organizations include: American Alliance for Health, Physical Education, Recreation, and Dance; American Cancer Society; American College of Sports Medicine; American Heart Association; International Health, Racquet, & Sports Club Association; National Athletic Trainers Association; National Recreation and Park Association; PE4Life; and YMCA of the USA. NCPPA's Federal Advisory Panel includes CDC, Division of Nutrition and Physical Activity, and President's Council on Physical Fitness and Sports. NCPPA has 4 strategic priorities: to champion public policies that reduce barriers to physical activity; to increase the adoption of activity-friendly community models; to promote incentives that result in greater adherence to recommended physical activity behaviors through community, schools, and worksite environments; and to influence policy and environmental changes for populations with low rates of physical activity.

National Institute for Fitness and Sport (NIFS)
250 University Boulevard
Indianapolis, IN 46202
Phone: 317-274-3432
Fax: 317-274-7408
Website: http://www.nifs.org
NIFS is dedicated to enhancing human health, physical fitness, and athletic performance through research, education, and service for people of all ages and abilities.

National Women's Law Center (NWLC)
I EXercise My Rights
11 Dupont Circle, Suite 800
Washington, DC 20036
Phone: 202-588-5180
Fax: 202-588-5185
Website: http://www.titleix.info/content.jsp?content_KEY=185&t=athletics.dwt
Founded in the same year Title IX was passed, NWLC works to expand the possibilities for girls and women in education and employment and to ensure that the nation's laws protect women's health. *I EXercise My Rights* is a public service, informational campaign designed to educate the public about the law's gender equity requirement for boys and girls in every educational program that receives federal funding.

National Youth Sports Safety Foundation (NYSSF)
One Beacon Street, Suite 3333
Boston, MA 02108
Phone: 617-277-1171
Fax: 617-722-9999
E-mail: NYSSF@aol.com
Website: http://www.nyssf.org
NYSSF is a national nonprofit, educational organization dedicated to reducing the number and severity of injuries youth sustain in sports and fitness activities. It is the only organization in the country solely dedicated to this objective.

North American Society for Pediatric Exercise Medicine (NASPEM)
Website: http://www.naspem.org
NASPEM's membership is composed of medical doctors, researchers, and students interested in pediatric exercise. Its mission is to promote exercise science, physical activity, and fitness in the health and medical care of children and adolescents. Both a searchable database of the NASPEM journal *Pediatric Exercise Science* and an online newsletter are available at the site.

Office for Civil Rights
U.S. Department of Education
400 Maryland Avenue SW
Washington, DC 20202

Phone: 800-USA-LEARN
Fax: 202-401-0689
TTY: 800-437-0833
E-mail: customerservice@inet.ed.gov
Website: http://www.ed.gov/about/offices/list/ocr/index.html?src=mr

PALAESTRA
Challenge Publications, Ltd.
P.O. Box 508
Macomb, IL 61455
Phone: 309-833-1902
E-mail: challpub@macomb.com
Website: http://www.palaestra.com
PALAESTRA offers a quarterly publication and resource on sport, physical education, and recreation for those with disabilities.

Pan American Health Organization
525 23rd Street NW
Washington, DC 20037
Phone: 202-974-3000
Website: http://www.paho.org
PAHO is an international public health agency working to improve health and living standards of the countries of the Americas. It serves as the specialized organization for health of the Inter-American System and the Regional Office for the Americas of the World Health Organization. The PAHO site contains scientific journal articles, books and book chapters, statistical information, and links related to issues of public health concern.

> **Publication:** *Youth: Choices and Change* (2005), a book written by 2 experts from PAHO's Child and Adolescent Health Unit, provides information for school staff, parents, community workers, and others on how to promote health and foster positive adolescent behavior.

Partnership to Promote Healthy Eating and Active Living (America on the Move)
44 School Street, Suite 325
Boston, MA 02108
Fax: 617-367-6899
E-mail: AOM_staff@americaonthemove.org
Websites: http://www.ppheal.org and http://www.americaonthemove.org
The Partnership is a national nonprofit organization that conducts, supports, and disseminates best-practice research focused on healthy eating and active living. With a mission to promote healthy eating and physical activity lifestyle behaviors through a public/private partnership grounded on consumer understanding, the Partnership is the moving force behind America On the Move (AOM), a national initiative dedicated to helping communities make positive changes to improve citizens' health and quality of life. AOM inspires Americans with fun, simple ways to become more active and eat more healthfully while also creating and supporting an integrated grassroots network of state affiliates. The Partnership encourages public and private partnerships at national, state, and local levels.

PE4life
810 Baltimore, Suite 100
Kansas City, MO 64105-1706
Phone: 816-472-PE4L (7345)
Fax: 816-474-7329
Website: http://www.pe4life.org
PE4life® is a not-for-profit organization dedicated to raising awareness about the physical inactivity levels of America's youth and the state of physical education across the nation while promoting quality physical education classes for children in grades K–12. PE4life operates a training institute, offering programs at centers in several states, and it recently announced plans to expand this effort to 50 states by 2011. In 2005, the organization launched the Center for the Advancement of Physical Education (CAPE), a research and public policy think tank. Extensive resources and links are available at the PE4life site.

Pennington Biomedical Research Center
6400 Perkins Road
Baton Rouge, LA 70808
Phone: 225-763-2500
Website: http://www.pbrc.edu
The Pennington Biomedical Research Center is a leading nutrition research center that promotes healthier lives through research and education in nutrition and preventive medicine. The Center's Division of Education provides education and information to the scientific community and the public about research findings, training programs, and research areas, as well as educational events for the public on various health issues.

President's Council on Physical Fitness and Sports (PCPFS)
Department W
200 Independence Avenue SW
Room 738-H
Washington, DC 20201-0004
Phone: 202-690-9000
Fax: 202-690-5211
Website: http://fitness.gov
Resources for coaches, teachers, students, and the general public about physical fitness. The site offers program information and materials for the Presidential Sports Award Program and the President's Challenge, research digests covering a variety of physical activity topics (http://fitness.gov/Reading_Room/Digests/digests.html), and an electronic newsletter.

Prevention Institute
265 29th Street
Oakland, CA 94611
Phone: 510-444-7738
Fax: 510-663-1280
E-mail: prevent@preventioninstitute.org
Website: http://www.preventioninstitute.org
Prevention Institute, a nonprofit national center dedicated to improving community health and well-being by building momentum for effective primary prevention, currently coordinates the Strategic Alliance, a coalition of dedicated organizations and individuals that is reframing the debate on nutrition and physical activity from a matter of individual choice and lifestyle to one of environmental, corporate, and government responsibility.

Tucker Center for Research on Girls and Women in Sport
University of Minnesota
203 Cooke Hall
1900 University Avenue SE
Minneapolis, MN 55455
Phone: 612-625-7327
Fax: 612-625-8147
E-mail: info@tuckercenter.org
Website: http://education.umn.edu/tuckercenter

Women's Sports Foundation
Eisenhower Park
East Meadow, NY 11554
Phone: 800-227-988 or 516-542-4700
Fax: 516-542-4716
E-mail: info@womenssportsfoundation.org
Website: http://www.womenssportsfoundation.org

REFERENCES

Ainsworth, B. E., Haskell, W. L., Whitt, M. C., Irwin, M. L., Swartz, A. M., Strath, S. J., O'Brien, W. L., Bassett, D. R. Jr., Schmitz, K. H., Emplaincourt, P. O., Jacobs, D. R. Jr., & Leon, A. S. (2000). Compendium of physical activities: An update of activity codes and MET intensities. *Medicine and Science in Sports and Exercise, 32*(Suppl.), S498–S516.

American Academy of Family Physicians, American Academy of Orthopaedic Surgeons, American College of Sports Medicine, American Medical Society for Sports Medicine, American Orthopaedic Society for Sports Medicine, & American Osteopathic Academy of Sports Medicine. (2003). Female athlete issues for the team physician: A consensus statement. *Medicine & Science in Sports & Exercise, 35*(10), 1785–1793.

American Academy of Pediatrics, Committee on Sports Medicine and Fitness. (2005). Promotion of healthy weight-control practices in young athletes. *Pediatrics, 116*(6), 1557–1564.

American Academy of Pediatrics, Committee on Sports Medicine and Fitness. (2001). Medical conditions affecting sports participation. *Pediatrics, 107* (5), 1205–1209. Retrieved in 2005 from http://aappolicy.aappublications.org/cgi/content/full/pediatrics;107/5/1205.

American Academy of Pediatrics, Committee on Sports Medicine and Fitness. (2001). Organized sports for children and preadolescents. *Pediatrics, 107*(6), 1459–1462. Retrieved in 2005 from http://aappolicy.aappublications.org/cgi/content/full/pediatrics;107/6/1459.

Andersen, J., Courson, R. W., Kleiner, D. M., et al. (2002). National Athletic Trainers' Association position statement: Emergency planning in athletics. *Journal of Athletic Training, 37,* 99–104.

Anderson, M. (2002). *Fundamentals of sports injury management.* Philadelphia: Lippincott, Williams & Wilkins.

Baumgartner, T. A. & Jackson, A. S. (2003). *Measurement for evaluation in physical education and exercise science* (7th ed.). Boston: McGraw-Hill.

Bayne-Smith, M., Fardy, P. S., Azzollini, A., et al. (2004). Improvements in heart health behaviors and reduction in coronary artery disease risk factors in urban teenaged girls through a school-based intervention: The PATH program. *American Journal of Public Health, 94*(9), 1538–1543. Retrieved in 2005 from http://www.ajph.org.

Blanchard, Y. & Darrah, J. (1999). Health related fitness for children and adults with cerebral palsy. *Current Comment*. American College of Sports Medicine.

Bogden, J. F. & Vegas-Matos, C. A. (2000). *Fit, healthy and ready to learn: A school health policy guide: Part 1, physical activity, healthy eating and tobacco use prevention*. Alexandria, VA: National Association of State Boards of Education. Retrieved in 2005 from http://www.nasbe.org/healthyschools/fithealthy.mgi.

Boreham, C. & Riddoch, C. (2001). The physical activity, fitness and health of children. *Journal of Sports Science, 19,* 915–929.

Borg, G. (1998). *Borg's Perceived Exertion and Pain Scales.* Champaign, IL: Human Kinetics.

Centers for Disease Control and Prevention. (2005). *Physical activity and good nutrition: Essential elements to prevent chronic diseases and obesity.* Atlanta, GA: National Center for Chronic Disease Prevention and Health Promotion. Retrieved in 2005 from http://www.cdc.gov/nccdphp/aag/aag_dnpa.htm.

Centers for Disease Control and Prevention. (2002). *Physical activity evaluation handbook*. Atlanta, GA: United States Department of Health and Human Services. Retrieved in 2005 from http://www.cdc.gov/nccdphp/dnpa/physical/handbook/pdf/handbook.pdf.

Centers for Disease Control and Prevention. (1997). *Guidelines for school and community programs to promote lifelong physical activity among young people*. *Morbidity and mortality weekly report,* RR-6. Retrieved in 2005 from http://www.mass.gov/dph/fch/schoolhealth/cshp/isfall02.htm.

Collins, D. R. & Hodges, P. B. (2001). *A comprehensive guide to sports skills tests and measurement* (2nd ed). Lanham, MD: Scarecrow Press.

Committee on Sports Medicine and Fitness, American Academy of Pediatrics. (2000). Climatic heat stress and the exercising child and adolescent. *Pediatrics, 106*(1), 158–159.

Corbin, C. B. & Pangrazi, R. P. (2003). *Physical activity for children: A statement of guidelines for children ages 5–12*. Reston, VA: National Association for Sport and Physical Education (NASPE).

Council on Physical Education for Children (COPEC) of the National Association for Sport and Physical Education (NASPE). (2000). *Appropriate practices for elementary school physical education: A position statement*. Reston, VA: NASPE.

Council on Physical Education for Children (COPEC) of the National Association for Sport and Physical Education (NASPE). (2001). *Recess in elementary schools: A position paper from the National Association for Sport and Physical Education*. Retrieved in 2005 from http://www.aahperd.org/naspe/pdf_files/pos_papers/current_res.pdf.

Datar, A. & Sturm, R. (2004). Physical education in elementary school and body mass index: Evidence from the early childhood longitudinal study. *American Journal of Public Health, 94,* 1501–1506. Retrieved in 2005 from http://www.ajph.org.

Dale, D., Corbin, C. B. & Dale, K. S. (2000). Restricting opportunities to be active during school time: Do children compensate by increasing physical activity levels after school? *Research Quarterly for Exercise and Sport, 71*(3), 240–248.

Denehy, J. (2002). Promoting the health of student athletes. *Journal of School Nursing, 18*(6), 309–312.

Dietz, W. H. (2005). Physical activity recommendations: Where do we go from here? *Journal of Pediatrics, 146,* 719–720.

Dowling-Sendor, B. (2004). Friday night tragedy: Just meeting the minimum standard of care might not be enough to save student athletes from crippling injury. *American School Board Journal, 191*(9), 70.

Dwyer, T., et al. (2001). Relation of academic performance to PA and fitness in children. *Pediatric Exercise Science, 13,* 225–237.

Etnier, J. L., Salazar, W., Landers, D. M., et al. (1997). The influence of physical fitness and exercise upon cognitive functioning: A meta-analysis. *Journal of Sport and Exercise Psychology, 19*(3), 249–277.

Ewart, C. K., Young, D. R. & Hagberg, J. M. (1998). Effects of school-based aerobic exercise on blood pressure in adolescent girls at risk for hypertension. *American Journal of Public Health, 88*(6), 949–951. PMID: 9618627.

Felton, G., Saunders, R. P., Ward, D. S., et al. (2005). Promoting physical activity in girls: A case study of one school's success. *Journal of School Health, 75*(2), 57–62.

Franklin, B. A., Whaley, M. H., Howley, E. T. & Balady, G. J. (2000). *ACSM's guidelines for exercise testing and prescription* (6th ed.). Philadelphia: Lippincott Williams & Wilkins.

Fox, K. R. (1999). The influence of physical activity on mental well-being. *Public Health Nutrition, 2*(3A), 411–418.

Gavin, M. L. (Updated, 2004). Compulsive exercise. Retrieved in 2006 from http://www.kidshealth.org/parent/emotions/behavior/compulsive_exercise.html.

Gortmaker, S., Cheung, L., Peterson, K., et al. (1999). Impact of a school-based interdisciplinary intervention on diet and physical activity among urban primary school children: Eat well and keep moving. *Archives of Pediatric and Adolescent Medicine, 153,* 975–983.

Gortmaker, S., Peterson, K., Wiecha, J., et al. (1999). Reducing obesity via a school-based interdisciplinary intervention among youth: Planet Health. *Archives of Pediatric and Adolescent Medicine, 15,* 409–418.

Harrell, J. S., McMurray, R. G., Baggett, C. D., et al. (2005). Energy costs of physical activities in children and adolescents. *Medicine & Science in Sports & Exercise, 37*(2), 329–336.

Harris, S. S. (2000). Readiness to participate in sports. In J. A. Sullivan & S. J. Anderson (Eds.), *Care of the Young Athlete* (pp. 19–34). Rosemont, IL: American Academy of Orthopaedic Surgeons and American Academy of Pediatrics.

Hichwa, J. (1998). *Right fielders are people too: An inclusive approach to middle school physical education.* Champaign, IL: Human Kinetics Publishers.

Keays, J. & Allison, R. (1995). The effects of regular moderate to vigorous physical activity on student outcomes: A review. *Canadian Journal of Public Health, 86,* 62–66.

Kelly, L. E. (1995). *Adapted physical education national standards: National consortium for physical education and recreation for individuals with disabilities*. Champaign, IL: Human Kinetics Publishers.

Kimm, S. Y. S., Glynn, N. W., Kriska, A. M., et al. (2002). Decline in physical activity in black girls and white girls during adolescence. *New England Journal of Medicine, 347,* 709–715.

Kogut, S. P. (Ed.). (2004). *Beyond activities: Learning experiences to support the national physical education standards, elementary.* Reston, VA: National Association for Sport and Physical Education.

Jarrett, O. S. (2003). *Recess in elementary school: What does the research say?* (Report No. EDO-PS-02-5). Champaign, IL: University of Illinois. Retrieved in 2005 from http://www.ericdigests.org/2003-2/recess.html.

Lavallee, M. (2002). Strength training in children and adolescents. *Current Comment*. Indianapolis, IN: American College of Sports Medicine.

Lieberman, L. J. & Houston-Wilson, C. (2002). *Strategies for inclusion: A handbook for physical educators.* Champaign, IL: Human Kinetics Publishers.

Lock, L. F. & Lambdin, D. (2003). *Putting research to work in elementary physical education: Conversations in the gym*. Champaign, IL: Human Kinetics Publishers.

Luckstead, E. F. & Patel, D. R. (2002). Catastrophic pediatric sports injuries. *Pediatric Clinics of North America, 49,* 581–591.

Massachusetts Department of Education. (2004). *2003 Massachusetts youth risk behavior survey results.* Malden, MA: Department of Education.

Massachusetts Department of Education. (1999). *Massachusetts comprehensive health curriculum framework.* Malden, MA: McManis, D.

Miller, D. K. (2002). *Measurement by the physical educator: Why and how* (4th ed.). Boston, MA: McGraw-Hill.

National Association for Sport and Physical Education. (2004). *Moving into the future: National standards for physical education* (2nd ed.). Retrieved in 2005 from http://www.aahperd.org/naspe/template.cfm?template=publications-nationalstandards.html.

National Association of State Boards of Education. (2000). *Fit, healthy and ready to learn: A school health policy guide. Part 1: Physical activity, healthy eating, and tobacco-use prevention.* Alexandria, VA.

National Women's Law Center & Harvard Prevention Research Center on Nutrition and Physical Activity, Harvard School of Public Health. (2004). *Keeping score: Girls' participation in high school athletics in Massachusetts.* Cambridge, MA.

PE4Life. (2004). *Blueprint for Change.* Kansas City, MO: Author.

Pennington Biomedical Research Center. (2005). *Pennington nutrition series: Physical activity guidelines for children.* Baton Rouge, LA: Pennington Nutrition Center. Retrieved in 2005 from http://www.pbrc.edu/publications.htm.

President's Council on Physical Fitness and Sports. (1999). Physical activity promotion and school physical education*. Physical Activity and Fitness Research Digest.* Retrieved in 2006 from http://www.fitness.gov/pcpfs_research_digs.htm.

Sallis, J. F., McKenzie, T. L., Kolody, B., Lewis, M., Marshall, S. & Rosengard, P. (1999). Effects of health-related physical education on academic achievement: Project SPARK. *Research Quarterly for Exercise and Sport, 70,* 127–134.

Schiemer, S. (2000). *Authentic assessment strategies for elementary physical education*. Champaign, IL: Human Kinetics.

Shephard, R. J. (1997). Curricular physical activity and academic performance. *Pediatric Exercise Science 9,* 113–126.

Sothern, M. & Gordon, S. (2003). Prevention of obesity in young children: A critical challenge for the medical professional. *Clinical Pediatrics, 42,* 101–111.

Stillman, L., Truslow, E. & Woods, M. (2000). *The health of our children: Who's paying attention?* Boston: Massachusetts Public Health Association.

Strong, W. B., Malina, R. M., Blimkie, C. J. R., et al. (2005). Evidence-based physical activity for school-age youth. *Journal of Pediatrics, 146,* 732–737.

Summerfield, L. M. (1998). *Promoting physical activity and exercise among children* (Report number ED416204). Washington, D.C.: ERIC Clearinghouse on Teaching and Teacher Education.

Sutherland, C. (2002). *Physical education tips from the trenches*. Champaign, IL: Human Kinetics Publishers.

Townsend, J. S., Mohr, D. J., Rairigh, R. M. & Bulger S. M. (2003). *Assessing student outcomes in sport education*. Reston, VA: National Association for Sport and Physical Education.

Trattner Sherman, R., & Thompson, R. A. (2004). The female athlete triad. *Journal of School Nursing, 20*(4), 197–202.

Troiano, R. P. (2002). Physical inactivity among young people. *New England Journal of Medicine, 347,* 706–707.

Trusty, J. M., Beinborn, D. S. & Jahangir, A. (2004). Dysrhythmias and the athlete. *AACN Clinical Issues, 15*(3), 432–448.

Waite-Stupiansky, S. & Findlay, M. (2001). The fourth R: Recess and its link to learning. *Educational Forum, 66*(1), 16–24.

Ward, C. W. (2004). Teens' knowledge of risk factors for sports injuries. *Journal of School Nursing, 20*(4), 216–220.

Wilk, B. & Bar-Or, O. (1996). Effect of drink flavor and NaCl on voluntary drinking and rehydration in boys exercising in the heat. *Journal of Applied Physiology, 80,* 1112 –1117.

Winnick, J. P. & Short, F. X. (2004). Introducing health-related physical fitness. Chicago, IL: National Center on Physical Activity and Disability. Retrieved in 2005 from http://www.ncpad.org/exercise/fact_sheet.php?sheet=102.

Young, J. C. (2003). Does your P.E. meet today's needs? *Principal* (NAESP), January/February.

Zabinski, M. F., Saelens, B. E., Stein, R. I., et al. (2003). Overweight children's barriers to and support for physical activity. *Obesity Research, 11,* 238–246.

Note: Articles with PMID number have been indexed by PubMed for MEDLINE.

EXHIBITS

Exhibit 10-1 Tips for Teachers on Supporting Physical Fitness through Creative Play

Exhibit 10-1 Tips for Teachers on Supporting Physical Fitness through Creative Play

There are a variety of ways that teachers can help children to get more physical activity into each day. Here are some tips on how they can be supported to reach the goal of 60 minutes of physical activity a day through active play.

- Have kids track their daily activities, such as by using ideas found on http://www.VERBnow.com.
- Use incentives such as fun contests and activity-inspiring prizes (e.g., jump ropes) for setting and reaching activity goals.
- Ask students to name a VERB they would like to try, and help them develop a plan to make it happen.
- Ask students to skip every other line as they write out their daily schedules from morning to bedtime. Then have them go back and find five places where they can insert a VERB to total 60 minutes or more of physical activity they enjoy.
- Have students get in groups to invent a new game by combining aspects of different sports, dances, or games. Then have each group teach the class how the new activity is done, and do it!
- Generate activity ideas for after school, such as engaging in two VERBs that start with the letter “R.”
- Ask students to come up with new “rules” for how to play old games or sports. For example, set up multiple goals made out of common objects for soccer or field hockey, such as two plastic garbage cans. Assign different points for scoring between each of the goals.
- Have students create a physical activity skit or play charades that lets them act out the VERBs they like. Create teams of four or five students and ask them to make their own list of VERBs to use in the game.
- At the start of class, have students take a quick stretch break or do a VERB. The break helps to rejuvenate the students and is a great opportunity to learn about different muscles — and VERBs!
- Ask students to bring in an object that reflects their favorite VERB (such as a ball or running shoe). Have students pair up and exchange “how to” instructions for their favorite VERB and describe when and where others can play and do that activity.
- Many cultures have a strong tradition of being active. Ask students to do some investigative research to uncover ways that different cultural groups play games, play sports, or live actively, and then to present their findings to the class.
- Have students clip articles and ads that relate to physical activity. Ask them to create collages based on themes (by sport/activity, indoor/outdoor activities, or season, for example). Keep the collages in your class for display and as reminders to play actively daily.
- Organize a mapmaking activity of free and low-cost physical activity areas nearby to share with the students’ families.
- Invite a representative from a local sports group or youth organization to demonstrate an activity to the class in which students showed an interest. Have the guest then lead the kids in the activity (e.g., martial arts, dance moves, or dribbling a basketball).

Source: National Association for Sport and Physical Education and CDC. Retrieved online in 2006 from http://www.aahperd.org/NASPE/pdf_files/tipforteachers.pdf.

Chapter 11

MENTAL HEALTH

Scope of the Problem

Legal/Regulatory Issues

Policy Implications for Schools

Prevention

Screening and Identification

Intervention and Referral

Follow-Up

Signs and Symptoms

Selected Mental Health Conditions

Screening Tools

Summary

Resources: Information About Evidence-Based Curricula and Interventions

Resources: Massachusetts Agencies and Organizations

Resources: National Agencies and Organizations

Resources: Sources of Mental Health Books for Children

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 11

MENTAL HEALTH

SCOPE OF THE PROBLEM

One in 5 young people between the ages of 9 and 17 experiences symptoms of mental health problems, and one in ten children and adolescents has a mental illness severe enough to impair functioning, yet in any given year only about one-fifth of children and adolescents in need of mental health services actually receive them (U.S. Surgeon General's Conference on Children's Mental Health, 2000). The most seriously affected children are defined, under federal regulations, as having "serious emotional disturbance" (SED), that is, a diagnosable disorder that severely disrupts social, academic, and emotional functioning. According to the President's New Freedom Commission on Mental Health, it is likely that there are "one or two kids with serious emotional problems in virtually every classroom" (NFCMH, 2003). The situation is particularly extreme in large urban schools, many of which report that well over 50% of their students manifest significant learning, behavior, and emotional problems (Center for Mental Health in Schools, Rev. 2005).

The lifelong impact of these problems and associated impairments on children and adolescents is considerable. In general, children with emotional and behavioral problems are at a much greater risk of dropping out of school and of failing to fully function in adulthood (U.S. Surgeon General's Conference on Children's Mental Health, 2000). Research supported by the National Institute of Mental Health (NIMH) has found that half of all lifetime cases of mental illness begin by age 14 and that there is frequently a long delay, sometimes decades, before treatment is sought and received. Such delays can lead to a more severe, more difficult to treat illness, and to the development of co-occurring mental illnesses (Kessler et al., 2005). Many mental health issues coexist with or are related to substance abuse and intentional injury. Refer to Chapter 13 (Injury Prevention) and Chapter 14 (Substance Abuse) for further discussion of these subjects.

Schools have become the major provider of mental health services to children, routinely dealing with a spectrum of issues from social adjustment difficulties to significant behavior problems and serious developmental and psychiatric disorders. George Washington University's Center for Health and Health Care in Schools estimates that, among those children who receive mental health services, up to 80% receive this care at school. A national survey of 83,000 public elementary, middle, and high schools conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA) during 2002–2003 found that, despite widespread budget cuts, more than 80% of schools provided assessment for mental health problems, behavior management consultation, and crisis intervention, as well as referrals to specialized programs. A majority also provided individual and group counseling, and case management. Virtually all schools reported having at least one staff member responsible for providing mental health services to students. The most common types of school mental health providers were school counselors, followed by school nurses, school psychologists, and social workers. School nurses spent one-third of their time providing mental health services.

Although schools are devoting considerable resources to meeting students' mental health needs, evidence indicates that many problems are not being detected or treated. A 2004 survey of more than 1,400 public school professionals, conducted by the Annenberg Public Policy Center (APPC), as part of the Annenberg Foundation Trust at Sunnylands' Initiative on Adolescent Mental Health, found, for example, that although depression and other mental health conditions are major risk factors for high-school-age youth, only 34% of high school professionals reported that their school had a "clearly defined and coordinated process for identifying students who may have a mental health condition." Although two-thirds of high schools do have well-organized processes for *referring* students with mental health conditions to appropriate providers, it is clear that, in the absence of a process for identifying students in need of help, many are being missed. When respondents were asked to estimate what percentage of students who might need counseling or treatment actually receive such services, only 7% said that all do, and only 31% said that most do.

The situation is somewhat better, although only marginally so, in middle schools. Despite major problems with bullying (82%) and depression (57%), under half (42%) of the middle school professionals responding to the Annenberg survey said their schools had a well-defined and coordinated system for identifying mental health issues in students.

LEGAL/REGULATORY ISSUES

Enabling Legislation

The No Child Left Behind (NCLB) Act, P.L. 107–110, allows schools the flexibility to provide or expand counseling and mental health services and support for students, teachers, and families. School districts seeking to improve or expand mental health prevention and counseling services have the opportunity to make use of federal funds and competitive grants. Information about the NCLB provisions (allowable use of available funds for mental health and counseling services, and how to strengthen community collaboration of services among education, health, mental health, and law enforcement agencies) is available from the National Association of School Psychologists at http://www.nasponline.org/pdf/SchoolMentalHealthProvisions.pdf.

School-Based Health Centers

Many schools provide mental health services to students either as part of special education services or through school-based health centers (SBHCs) funded by DPH. DPH's SBHC quality standards, adopted in 1995, state:

> The center must provide mental health and substance abuse services, either onsite or through referral arrangements that offer:
> - immediate response to emergency/crisis situations;
> - urgent appointments, whenever possible within the same day and no later than 3 calendar days after the request for service is made; and
> - non-urgent appointments within 7 calendar days.

If the center provides mental health or substance abuse treatment services directly, these services must meet DPH licensure regulations. If the center contracts with an outside agency for the provision of these services, the contracted agency must have experience in providing care to children and adolescents and must be duly licensed. Contracted personnel should also agree through a memorandum of agreement/understanding to meet with the school's student support team and consult with school professionals as needed.

Confidentiality

Both schools and SBHCs must provide services in a manner that ensures the privacy of students and their families. Subject to 603 CMR 23.00, authorized school personnel are allowed access to the student records of students when such access is required in the performance of official duties, without obtaining consent of the eligible student or parent/guardian. It is not permissible, however, to give a third party access to any information from a student record without the specific, informed, written consent of the student or parent/guardian. The law further states:

> "When granting consent, the eligible student or parent shall have the right to designate which parts of the student record shall be released to the third party. A copy of such consent shall be retained by the eligible student or parent and a duplicate placed in the temporary record. Except for information described in 603 CMR 23.07(4)(a), personally identifiable information from a student record shall only be released to a third party on the condition that he/she will not permit any other third party to have access to such information without the written consent of the eligible student or parent."

See Chapter 2 for additional information about regulations governing confidentiality of health records and communications. See also student record regulations, 603 CMR 23.00, available at http://www.doe.mass.edu/lawsregs/stateregs.html.

Discrimination

M.G.L. c.71B (Children with Special Needs) stipulates: "The term 'emotional impairment' shall be defined pursuant to 34 CFR 300.7(c)(4), the definition of 'emotional disturbance' contained in federal regulations implementing the Individuals with Disabilities Education Act in effect on January 1, 2000." The law explicitly states that the word *disability* should not be used to provide a basis for labeling or stigmatizing the child or defining the needs of the child, and it should in no way limit the services, programs, and integration opportunities provided to such child:

> "No school committee shall refuse a school-age child with a disability admission to or continued attendance in public school without the prior written approval of the department, and without complying with state and federal requirements for disciplining students with disabilities, where applicable. During the pendency of administrative or judicial proceedings, a court of competent jurisdiction shall have the authority to change a child's educational placement, including removing the child from school, in any circumstances when the school committee shows that the child's behavior poses a substantial likelihood of injury to himself or others; provided, however, that the foregoing shall not be construed to abrogate any authority concerning discipline for such a child which is available to a school committee under said regulations and procedures or any other law. No child who is so refused or removed shall be denied an alternative form of education approved by the department, as provided for in section 10, through a tutoring program at home, through enrollment in an institution operated by a state agency, or through any other program which is approved for the child by the department."

The law further states that no child shall be determined to be a student with a disability solely because the child's behavior violates the school's disciplinary code.

Evaluation

The child's parents/guardians must be consulted about the content of any evaluation and the evaluators being used:

> "Said evaluation shall include an assessment of the child's current educational status by a representative of the local school department, an assessment by a classroom teacher who has dealt with the child in the classroom, a complete medical assessment by a physician, an assessment by a psychologist, an assessment by a nurse, social worker, or a guidance or adjustment counselor of the general home situation and pertinent family history factors; and assessments by such specialists as may be required in accordance with the diagnosis including when necessary, but not limited to an assessment by a neurologist, an audiologist, an ophthalmologist, a specialist competent in speech, language and perceptual factors and a psychiatrist."

A suggested special education program may include family guidance or counseling services.

Medications

IDEA 2004, Public Law 108–446, Section 612(a) prohibits requiring a child to take medication as a condition of attending school, receiving an evaluation, or receiving services:

> (25) PROHIBITION ON MANDATORY MEDICATION—
> (A) IN GENERAL — The State educational agency shall prohibit State and local educational agency personnel from requiring a child to obtain a prescription for a substance covered by the Controlled Substances Act (21 U.S.C. 801 et seq.) as a condition of attending school, receiving an evaluation under subsection (a) or (c) of section 614, or receiving services under this title.
> (B) RULE OF CONSTRUCTION — Nothing in subparagraph (A) shall be construed to create a Federal prohibition against teachers and other school personnel consulting or sharing classroom-based observations with parents or guardians regarding a student's academic and functional performance, or behavior in the classroom or school, or regarding the need for evaluation for special education or related services under paragraph (3).

Licensing of School Mental Health Professionals

Guidance counselors, psychologists, and social workers/adjustment counselors working in schools are licensed by the Massachusetts Department of Education (DOE) according to the regulations set forth in 603 CMR, s.7.11 (Professional Support Personnel Licenses). Licensing requirements for these positions may be found at http://www.doe.mass.edu/lawsregs/603cmr7.html?section=11.

The above listing of laws is not intended to be comprehensive. Additional references to laws and regulations that relate to specific situations are mentioned within the text of this chapter. Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

POLICY IMPLICATIONS FOR SCHOOLS

Schools are being challenged to radically rethink their role in caring for students' mental health. Recent research provides compelling evidence that, despite schools' considerable efforts to provide appropriate mental health services, many students continue to struggle with serious untreated and undetected social, emotional, and behavioral problems that impede their ability to

learn. As a result, schools are being asked both to shift the definitional framework of mental health policy and practice and to restructure their processes.

The 2003 report of the President's New Freedom Commission on Mental Health, which included a recommendation to improve and expand school mental health programs, added momentum to existing efforts to broaden the mental health mandate of schools. It recommends that school mental health programs:

- extend the overall focus from individual referral and/or treatment to promotion of healthy emotional and behavioral development and removal of barriers to learning for the whole student population;
- concentrate attention on prevention, strengthening of protective factors, and early intervention; and
- expand school programs through the creation of partnership networks that include community mental health and health agencies and, where warranted, juvenile justice and social service agencies.

A report titled, *The Current Status of Mental Health in Schools: A Policy and Practice Analysis,* from UCLA's Center for Mental Health in Schools (Adelman & Taylor, 2006), outlines in greater detail what many mental health, public health, and education experts believe school mental health programs should do, beyond providing or connecting students in crisis to counseling and therapy:

- provide programs to (a) promote social-emotional development, (b) prevent mental health and psychosocial problems, and (c) enhance resiliency and protective buffers;
- provide programs and services to intervene as early after the onset of learning, behavior, and emotional problems as is feasible;
- enhance the mental health of families and school staff;
- build the capacity of all school staff to address barriers to learning and promote healthy development;
- address systemic matters at schools that affect mental health, such as high-stakes testing (including exit exams) and other practices that engender bullying, alienation, and student disengagement from classroom learning; and
- develop a comprehensive, multifaceted, and cohesive continuum of school-community interventions to address barriers to learning and promote healthy development.

Many schools are already taking such steps. Some have begun to direct resources to schoolwide and/or curriculum-based programs intended to reach the broader student population. Early intervention by mental health staff or multidisciplinary teams is gaining ground as a means to address mild psychosocial problems quickly and prevent unnecessary entry into special education. Over half of schools nationwide have agreements with community mental health providers to provide services to their students, and a significant proportion participate in team meetings with these community providers (SAMHSA, 2005).

As part of the effort to expand mental health in schools beyond individual-centered referral and treatment, schools are also being encouraged to recognize the significant part that environment — school climate, neighborhood safety, and family dynamics — plays in emotional and behavioral problems. While a student who is manifesting problems may, in fact, require some special assistance, schools should consider the student's environment before asking "What is wrong with this person?" (Center for Mental Health in Schools at UCLA, 2003). Chapter 13 (Injury and Violence Prevention) contains an exhibit (Exhibit 13-1) that contains information about a number of tools that can be used to evaluate a school's social and emotional climate.

PREVENTION

Prevention has now developed to a point that reducing the risk for developing a mental disorder, preventing early onset of such problems, and intervening early enough to minimize impact are all realistic possibilities (U.S. Department of Health and Human Services, 1999). Prevention activities may be multilayered and may address the entire population, as well as at-risk groups and those already showing signs of a disorder.

Reducing Biological Risk

The initial level of prevention is to reduce the risk of developing a mental disorder. In addition to environmental risk factors such as poverty, abuse, neglect, unsatisfactory relationships, and exposure to traumatic events, the 1999 Surgeon General's report cited above identified the following biological risk factors for developing a mental disorder or experiencing problems in social-emotional development:

- prenatal damage from alcohol, illegal drugs, and tobacco;
- low birth weight; and
- difficult temperament or an inherited predisposition to a mental disorder.

Positive changes in the behavior of pregnant women in such domains as prenatal care, nutrition, and substance use during pregnancy reduce the likelihood of neurobehavioral complications in newborns that can lead to mental disorders. School nurses and other health personnel can be involved in developing and teaching curricula related to teen health, healthy parenting, and child rearing (see Chapter 12, Reproductive Health). In addition, they may provide guidance to pregnant and parenting teen groups to promote healthful practices during pregnancy.

Promoting Healthy Emotional Development

Promoting mental health in children, adolescents, families, schools, and communities is of paramount importance. School personnel are encouraged to:

- create a supportive, emotionally healthy school climate in which all students feel safe and respected;
- foster a sense of self-worth in students;
- promote school connectedness, which has been found to be a protective factor against both emotional/behavioral problems and risk behaviors;
- educate all students about mental health and mental health problems;
- identify vulnerabilities and risk behaviors in students; and
- employ comprehensive, collaborative, systemic interventions.

It is important that a joint effort be forged among schools, parents/guardians, and community mental health providers. School professionals such as guidance counselors, school psychologists, school nurses, the school physician, and adjustment counselors are in a position to facilitate alliances of this kind, as well as serve as supporters and advocates for the student within the school environment.

Systemwide prevention efforts usually engage children as participants and aim both to help them develop the resources and skills necessary to cope with complex life situations and to gain a sense of competence and self-worth. The Massachusetts Comprehensive Health Curriculum Framework includes a Social and Emotional Health Strand encompassing Mental Health, Family Life, and Interpersonal Relationships. The PreK–12 Standard for Mental Health states: "Students will acquire knowledge about emotions and physical health, the management of emotions, personality and

character development, and social awareness; and will learn skills to promote self-acceptance, make decisions, and cope with stress, including suicide prevention." Topics generally covered in Mental Health include feelings and emotions, identity, and decision making. Within each topic area, learning standards are defined for grades PreK–5, 6–8, and 9–12. These standards are available at http://www.doe.mass.edu/frameworks/health/1999/mental.html.

In Massachusetts, health education curricula and textbook choice are controlled locally. A substantial number of evidence-based programs now exist that include universal programs to promote social and emotional development as well as targeted interventions to address specific mental health and behavioral problems. Two helpful resources for locating such programs are: (1) *Safe and Sound: An Education Leader's Guide to Evidence-Based Social and Emotional Learning (SEL) Programs* (2002), from the University of Illinois at Chicago's Collaborative for Academic, Social and Emotional Learning, and (2) *Preventing Mental Disorders in School-Aged Children: A Review of the Effectiveness of Prevention Programs* (2001), from the Prevention Research Center at Pennsylvania State University. (For more information about these reports and how to obtain them, see Resources: Information about Evidence-Based Curricula and Interventions, at the end of this chapter.)

In the course of evaluating the effectiveness of prevention programs for reducing mental health problems in school-age children, researchers from the Prevention Research Center at Pennsylvania State University identified a number of characteristics of effective universal prevention programs (programs addressed to broad populations of children, families, and schools). Effective programs do the following :

- focus on teaching emotional self-regulation, as well as thinking and decision-making skills that improve social and emotional competence;
- create changes in the school and family ecology that support the use and reinforcement of these new skills; and
- persist through one or more school years and are used on a regular basis.

Emotional skill-building activities can be built into classroom curricula, extracurricular clubs for all students, and targeted support groups. Exercises may address: (1) problem-solving, communication, and conflict resolution skills, (2) teaching cooperation and tolerance, and (3) specific skills such as how to respond to bullies and how to handle anger, frustration, and aggression. In the classroom, ongoing activities such as discussion circles can foster a sense of community, teach listening skills, and provide students with opportunities for emotional expression.

Creating and maintaining a behaviorally healthy culture also requires a well-established support system and early intervention teams that include, at a minimum, the school's guidance and adjustment counselors, the school nurse and physician, and the school's administrator responsible for overseeing school discipline issues. It is the school's responsibility to assist staff in maintaining currency on mental health/behavioral health issues through professional development.

Support for "At Risk" Students

Schools may provide services and supports for students at risk for behavioral or emotional disorders, keeping in mind that there are no absolute predictors of mental disorders and that most children are inherently resilient and can deal with some degree of adversity.

When the goal is simply to reduce the risk of social, emotional, or behavioral difficulties, the best support may be the simplest. One key support is the "open door" policy of school nurses. Frequently, students experiencing daily stress from any of a wide range of family and school issues will touch base with the school nurse for several minutes of reassurance and guidance. These

interactions with a caring, accessible health professional are often sufficient to enable them to return to class and focus on schoolwork. Open-enrollment programs such as social, recreational, and other enrichment programs or self-help and mutual-support programs can also be very effective in bolstering resilience. If more severe problems have begun to surface, other options such as direct instruction, psychosocial guidance and support, or psychosocial counseling may be indicated. (See Exhibit 13-4 in Chapter 13 for a checklist of early warning signs that may help to identify students at risk for violent behavior.)

Targeted intervention should be undertaken with the knowledge and agreement of the child's parents/guardians. Parents/guardians should be fully informed of and understand:

- the reason the school has identified their child for special supports;
- the specific services or supports the school is proposing;
- the expected benefit(s);
- who will provide the service, and their credentials/training; and
- the manner in which the activity will be presented to the child.

Engaging parents/guardians in this process encourages them to share their concerns and to regard the school as an ally working on the child's behalf. It is recommended that schools have protocols in place governing contact with parents/guardians in situations where communication may put the child at risk of harm, such as instances of suspected child abuse or neglect or suspected domestic violence. (See both the "Common Stressors" section later on in this chapter and Chapter 13 for additional information on child abuse and neglect and domestic violence.)

If the child is already receiving treatment outside the school setting, the school and parents/guardians may benefit from a discussion of how the school and the treating clinician can collaborate to support the child. For example, the therapist might attend an IEP meeting or review a 504 plan. (See Chapter 7 for more information on IEPs and 504 plans.)

Schools must be sensitive to the issues of stigma surrounding mental health and carefully plan how any support programs for at-risk individuals or groups will be introduced to the school community. Without careful attention to this issue, children singled out for special assistance may be on the receiving end of discrimination from other children and adults.

The goal of most anti-stigma campaigns is to promote identification and understanding of mental health issues, as well as recognition that individuals with mental health problems do and should live among the general population. They focus on the lesson that some behaviors interfere with health and success, that mental health problems are treatable, that many symptoms can be controlled, and that individuals with mental health problems can lead normal lives. The lessons also encourage those students with problems to seek help.

Massachusetts was one of 8 states selected to participate in the Elimination of Barriers Initiative (EBI), a 3-year initiative launched in September 2003 by the Substance Abuse and Mental Health Services Administration (SAMHSA) aimed at identifying effective public education approaches to counter the stigma and discrimination associated with mental illnesses. A free training package for educators, *Eliminating Barriers for Learning: Social and Emotional Factors That Enhance Secondary Education,* is available from SAMHSA by e-mailing ebiinfo@samhsa.gov. This training package is designed to:

- increase knowledge of adolescent mental health, including risks and protective factors;
- show teachers and staff how to develop an action plan to help students who need additional support;

- suggest ways to promote a mentally healthy learning environment through instructional techniques that take into account individual differences and the classroom climate; and
- help staff identify school and community resources and partnerships to promote youth mental health.

SCREENING AND IDENTIFICATION

Identification Procedures

Mental health problems may be identified by anyone (e.g., student, staff, parent). The following recommendations for facilitating problem identification and triage response are derived from a technical aid packet, *School-Based Client Consultation, Referral, and Management of Care* (2003), from UCLA's Center for Mental Health in Schools.

Ideally, schools should collaborate with school nurses and behavioral health professionals to develop a process for identification of students at risk. Forms should be developed as part of this process and kept in an easily accessible location, with an equally accessible, but secure and private, location for their submission. All staff should be informed of the existence of the forms, their location, the procedure for submission, and how the information will be processed and referred. Submitted forms should be reviewed, sorted, and directed to appropriate resources by a designated and trained triage processor on a daily basis.

If a problem requires immediate counseling to help a student/family through a crisis, the triage processor should send the identification form to the person who makes assignments to onsite counselors. All other problem identification forms should be directed to a small triage "team" (1–3 trained professionals) for further analysis and recommendations. Members of such a team may not have to meet on all cases; some could be reviewed independently, with recommendations made and passed on to the next reviewer for validation. In complex situations, however, not only might a team meeting be indicated, but it may also be necessary to gather more information from involved parties (e.g., teacher, parent, student). After a form has been reviewed, sorted, and directed, the triage processor should send a status information form to the person who identified the problem.

Role of the School Nurse

The school nurse has a unique and critical role in identifying mental health issues in the school population. As a health professional in an educational setting, the school nurse can inform educators and other staff members about factors such as physical conditions, medications, and social or environmental issues that may influence students' emotions and/or behavior. In addition, by virtue of professional training, a school nurse is well positioned to identify and refer students who need additional mental health services.

The health room is a readily accessible "walk-in clinic" where mental health problems may present directly or indirectly. Data collected from DPH's Essential School Health Service Programs (formerly Enhanced School Health Services Programs) demonstrate that many children and adolescents present in health rooms with mental or behavioral issues as their primary issue. (See Essential School Health Services Data Reports at http://www.mass.gov/dph/fch/schoolhealth/shpubs.htm.) Careful assessment of physical complaints may also uncover indications of a related emotional/mental health issue in some students. When addressing physical symptoms such as stomachaches and headaches, the nurse should be cognizant of other factors that may influence the child's presenting symptoms.

Screening

In some instances, behavioral and emotional problems within the student population may also be identified through schoolwide screening. The advisability of schoolwide screenings is currently the subject of considerable debate. At present, this practice is relatively rare; a recent nationwide survey conducted for the Substance Abuse and Mental Health Services Administration (SAMHSA). found only 15% of schools providing this service (Foster et al., 2005). More commonly, screening is used on an individual basis to obtain additional information that will aid in understanding a student's difficulties or in deciding whether a child should be referred for further evaluation. Some trusted prescreening instruments are described later in this chapter. It must be stressed, however, that the purpose of screening is the identification of possible issues, *not diagnosis.*

INTERVENTION AND REFERRAL

Effective intervention depends on appropriate assessment and treatment planning. To effectively help a child, it is extremely important that a mental health clinician understand the child's particular dynamics and social and family situation. As noted above, a number of underlying factors ranging from congenital neurological disorders to traumatic experiences may affect any given case. In addition, there may be co-occurring issues such as substance abuse or domestic violence. (See Chapter 13 for a discussion of intentional injury and Chapter 14 for a discussion of substance abuse.)

Parents or guardians should be contacted and a child referred for assessment if the child is withdrawn or overly aggressive, has significant problems interacting with peers or adults, or has serious academic problems. If staff is concerned that the student has a disability that is interfering with the student's academic progress, the student may be referred for an evaluation to determine eligibility for special education. (See Chapter 7 for further discussion of eligibility for special education and accommodations under Section 504.)

The task of diagnosis is best left to trained clinicians, who make their judgments based on extensive evaluations and information gathered from individuals who are knowledgeable about the child's behavior in the home, school, and community. Diagnosis of mental health problems in children and adolescents can be particularly difficult, because the expression of a disorder may change as a child matures, and the distinctions between diagnoses are more fluid, with less-distinct boundaries between normal and abnormal. Further complicating diagnosis is the fact that many conditions appear in combination with other diagnoses and with risk behaviors such as substance abuse**.**

Once parents/guardians have consented, in writing, to treatment, it may be provided in a number of ways. Trained school staff may provide concentrated support, counseling, and follow-up for students who are apathetic or acting out, as well as for students returning to school after hospitalization or residential treatment. Students exhibiting significant academic or social problems or extreme behaviors may need more than internal support services. If a school-based health center (SBHC) exists and is staffed with mental health providers or has contracts with mental health providers, the student may be referred there for assessment or treatment after parent/guardian consent is obtained. Otherwise, the school should work with parents/guardians to find an appropriate mental health provider. Schools may develop linkages with community mental health programs to provide the necessary expertise or services. Families may also decide to access their own care.

As the Center for Mental Health in Schools points out, a referral is not just a name and address, but an intervention that requires both careful preparation and sensitivity to the feelings, needs, and preferences of both students and their families. Some suggestions about how to make referral meetings more successful include:

- Develop a well-researched referral resource file for use in all such meetings.
- Review with the student/family the value and nature of referral options.
- In discussion with the student/family, analyze the pros and cons of potential options (including location, fees, and payment issues such as lack of insurance coverage), and if more than one option emerges as promising, rank-order them.
- Identify and explore with the student/family all factors that might be potential barriers to pursuing the most appropriate option, including financial issues, logistical issues (transportation, work schedules), and attitudinal/emotional issues (parent/guardian resistance or apathy, student anxiety).
- Take the necessary time to identify specific ways the student/family can deal with factors that are likely to interfere with follow-through.
- Provide the student/family with a written summary of what was decided. This summary should include specific information on the chosen referral; planned strategies for overcoming barriers; and other options identified as backups in case the first choice is not successful.

In all interactions with parents/guardians and children, schools must be respectful of the family's native culture and tailor language and suggestions to fit the family's perspective of mental health problems. It is often best for the school to begin by identifying the behaviors of concern, rather than defining the behaviors as a mental health disorder. In communities that see mental health problems as having spiritual or supernatural origins, treatment may need to involve local religious leaders. The local mental health center can often provide guidance about culturally sensitive approaches.

Sensitivity to differing viewpoints must also be exercised in discussions of prescription medications. While many people regard psychiatric medications in a positive light, as a means to rapidly reduce symptoms, others are concerned about the side effects of medications, and still others believe all psychiatric medications should be banned.

FOLLOW-UP

In all instances, it is critical to ensure that students and their families successfully connect with the mental health assistance to which they have been referred, and that the program or individual provider meets their needs. It may be helpful to provide the student and/or family with a form that they can use to let the school know whether the referral was successful or whether additional help is needed. It is advisable to establish a reminder system to initiate a follow-up interview after an appropriate time period to ensure that the student/family receives help in overcoming any barriers. For example, additional reassurance may be needed to overcome resistance to treatment, or a family may require assistance in making the contact or arranging transportation. If contact was made but the student or family is not satisfied with the referral, problems should be explored and a second referral offered, if appropriate.

In some situations, intensive care management may be indicated to ensure that: (1) combinations of in-school and outside interventions are appropriate and well-coordinated, (2) progress is being made, (3) any need for additional assistance is identified and met, and (4) all care participants

(including families, mental health service providers, and the school nurse) are provided with appropriate status updates on a regular basis (Center for Mental Health in Schools, 2003). In addition, if the student is reentering school following treatment, strategies for returning to school and a program of ongoing support should be planned.

SIGNS AND SYMPTOMS

Understanding Developmental Stages

An understanding of the stages of children's and adolescents' emotional and psychological development is helpful in distinguishing between typical behavior and behavior that may necessitate professional observation and treatment. Following are some very general descriptions of behaviors typical of school-age children at various stages of emotional and psychological development. However, these are only general guidelines, and children are individuals whose progress through stages of development and behaviors may differ based on gender, cultural background, and other individual characteristics. These guidelines come from *Your Child's Emotional Health* (Philadelphia Child Guidance Center, produced by The Philip Lief Group, Inc., 1993).

Ages 3 to 4 Years

- develop increasing interest and skill in controlling emotions;
- practice "manipulating" emotions of others (especially peers);
- start being concerned with gender identity, modifying emotional expression accordingly;
- may focus affection on parent of opposite sex, resulting in some degree of competitive antagonism toward parent of same sex;
- initiate discussions about emotional issues; and
- begin exhibiting strong emotional responses — positive and negative — to dreams.

Ages 4 to 6 Years

- seek specific constructive outlets for emotional tension (e.g., drawing or playing particular games) in a calm and deliberate manner;
- begin making and appreciating rational judgments about causes and effects of emotions;
- become increasingly self-reliant in terms of pleasing self and resolving emotional disturbances;
- demonstrate more and more empathy for, and curiosity about, other people (especially peers); and
- seek and respect justice in emotional conflicts.

Ages 6 to 7 Years

- tend to exhibit extremes of emotional responses (e.g., joyous delight instead of quiet joy or hysterical crying instead of simple sadness);
- are very susceptible to having hurt feelings;
- may exhibit school phobia, a fear of going to school that can lead to feigned or psychosomatic illness;
- quarrel with parents, especially mother, as a means of discharging separation anxiety associated with starting school life or of testing the parent-child relationship in this new school-oriented stage of life;
- form multiple, relatively superficial, and relatively short-lasting relationships with peers;
- engage in sex play to satisfy curiosity about genitals, may soothe with self-stimulation;

- frequently initiate sibling rivalry; and
- occasionally resort to lying or stealing as a coping mechanism or a means of rebellion.

Ages 7 to 9 Years

- exhibit much more emotional equilibrium than previously;
- experience both fear and rational concern related to possible dangers lurking in the outside world: crime, violence, catastrophe;
- become interested in sex talk and sex jokes and are curious about the mechanics of reproduction;
- develop crushes on peers;
- handle competitive play — winning and losing — relatively well;
- worry about failure in academic performance;
- assume more responsibility for own acts, instead of blaming others; and
- fear being wrong or being humiliated.

Ages 9 to 11 Years

- rely more and more on peers rather than parents for evaluation, approval, and direction;
- form “puppy love” relationships with peers;
- develop more mature relationships with siblings;
- exhibit concern over issues of justness and fairness;
- seek and develop a “best friend” relationship; and
- worry about the possibility of parents fighting, divorcing, losing their jobs, becoming ill, or dying.

Ages 11 to 13 Years

- become very self-conscious and sensitive about physical development, physical health, and sexuality;
- fear losing possessions, popularity, or status;
- develop romantic attachments with peers;
- occasionally lose patience with siblings and parents if they appear to interfere with personal, peer-related interactions and ambitions;
- seek and develop a close circle of friends for social support; and
- exhibit moodiness and irritability.

Ages 13 to 19 Years

- crave personal freedom from parents but still want and need their love;
- intensely concerned about understanding why things are the way they are;
- experiment and test the limits of pleasure and pain; may be involved in a reckless act of thrill-seeking; and
- may spend much of time at home silent and withdrawn, treat adults in general with distrust and disrespect, defy household rules and family standards, refuse to go anywhere with the family, skip school, run away, experiment with drugs, or engage in sex.

A variety of signs may point to mental health disorders or serious emotional disturbances in children or adolescents. Signs and symptoms related to common stress-producing situations and to particular diagnoses are discussed in the sections that follow. As a general guideline, however, SAMHSA’s National Mental Health Information Center suggests that attention should be paid to any of the following warning signs (Child and Adolescent Mental Health Fact Sheet CA–0004, 2003):

A child or adolescent is troubled by feeling:

- sad and hopeless for no reason (and these feelings do not go away);
- very angry most of the time (and crying a lot or overreacting to things);
- worthless or guilty (often);
- anxious or worried (often);
- unable to get over a loss or death of someone important;
- extremely fearful (or having unexplained fears);
- constantly concerned about physical problems or physical appearance; or
- frightened that his or her mind either is controlled or is out of control.

A child or adolescent experiences big changes, such as:

- showing declining performance in school;
- losing interest in things once enjoyed;
- experiencing unexplained changes in sleeping or eating patterns;
- avoiding friends or family and wanting to be alone all the time;
- daydreaming too much and not completing tasks;
- feeling life is too hard to handle;
- hearing voices that cannot be explained; or
- experiencing suicidal thoughts.

A child or adolescent experiences:

- poor concentration and inability to think straight or make decisions;
- an inability to sit still or focus attention;
- worry about being harmed, hurting others, or doing something “bad”;
- a need to wash, clean things, or perform certain routines hundreds of times a day, in order to avoid an unsubstantiated danger;
- racing thoughts that are almost too fast to follow; or
- persistent nightmares.

A child or adolescent behaves in ways that cause problems, such as:

- using alcohol or other drugs;
- eating large amounts of food and then purging or abusing laxatives, to avoid weight gain;
- dieting and/or exercising obsessively;
- violating the rights of others or constantly breaking the law without regard for other people;
- setting fires;
- doing things that can be life-threatening; or
- killing animals.

Common Stressors

Mental health problems in young people are caused by biology, environment, or both. Young people who are exposed to violence, loss of important people (e.g., through death, geographic relocation, school transition), abuse, or neglect are more likely to be at risk for mental or behavioral health problems. Other risk factors may include feeling continual rejection because of race, religion, sexual orientation, cultural tradition, family income, or nontraditional family situation.

Health, Mental Health and Safety Guidelines for Schools (Taras et al., 2004), developed by health, education, and safety professionals from more than 30 national organizations, including the American Academy of Pediatrics and the National Association of School Nurses, makes the point

that a variety of social, interpersonal, and family stresses can lead to problems with learning and school performance, as well as high-risk behavior and mental health difficulties. The guidelines recommend implementing prevention programs that focus on recognition of stressful life situations and interventions to help students deal with these stresses.

The following does not attempt to deal with all of the potential sources of stress in the lives of children and adolescents, but simply provides information on some of the more common situations that can negatively affect students' mental health.

Abuse and Witnessing Family Violence

Children who are abused and children who witness violence in the home tend to display similar emotional and behavioral effects. Both groups are at increased risk for anxiety and depression, as well as behaviors such as fighting, bullying, lying, or cheating. They may also be disobedient at home and at school, perform poorly at school, and have social competence problems. They may have few friends and may be reluctant to participate in outside activities. Child witnesses may also display inappropriate attitudes about violence as a means of resolving conflict.

Potential negative effects vary somewhat by age. School-age children may develop psychosomatic complaints such as headaches or abdominal pain and may frequent the health room. Children of this age also tend to blame themselves for abuse and violence in the home and often experience guilt and shame.

Adolescent witnesses to family violence have higher rates of interpersonal problems with other family members, especially parents/guardians. They are more likely to have a fatalistic view of the future, resulting in risky and antisocial behavior such as school truancy, early sexual activity, substance abuse, and delinquency.

A briefing paper for professionals, *Children and Domestic Violence,* (National Clearinghouse on Child Abuse and Neglect Information, 2003) cites considerable research to indicate that children's risk levels and reactions to domestic violence vary widely, with some children demonstrating enormous resiliency and others showing significant negative effects (Carlson, 2000; Edleson, 1999; Hughes, Graham-Bermann & Gruber, 2001). A number of protective factors seem to mitigate the adverse effects of exposure to family violence, including social competence, intelligence, high self-esteem, outgoing temperament, strong sibling and peer relationships, and a supportive relationship with an adult.

What Schools Can Do: Abuse

State law (M.G.L. c.119, s.51A) requires professionals whose work brings them into contact with children to notify the Massachusetts Department of Social Services (DSS) if they have reasonable cause to believe that a child is suffering physical or emotional injury from abuse or neglect, or substantial risk of harm from abuse. The following are mandated reporters: physicians, dentists, nurses, public or private school teachers, educational administrators, psychologists, psychiatrists, clinical social workers, guidance or family counselors, social workers, school attendance officers, and allied mental health and licensed human-service professionals. Schools should make sure that *all* school staff members are trained to recognize signs and symptoms of abuse and neglect and that they understand the school system's child abuse and neglect reporting protocol. See Chapter 13 for additional information on child abuse and neglect and mandated reporting.

Additional steps schools can take to safeguard children and adolescents in this situation include:

- Provide a team of psychologists/social workers/nurses/teachers/administrators that responds to individual situations of suspected abuse and neglect.
- In order to encourage faculty and staff confidence about reporting abuse, make counselors available to hear anonymous cases. Faculty and staff may suggest ways for the child to be seen by the counselor or nurse in a confidential, safe, and sensitive manner.
- Educate faculty and staff about how to respond to children who disclose that they have been abused, including how to create a school climate that supports such children.
- Help staff and parents/guardians learn how to prevent child physical and sexual abuse and neglect.

What Schools Can Do: Witnessing Family Violence

The aforementioned briefing paper *Children and Domestic Violence* suggests that decisions about services and interventions for children exposed to family violence should be based on a comprehensive assessment that includes protective factors, as well as the following considerations:

- **Nature of the violence.** Children who witness severe forms of violence and unremitting conflict may feel more distress than children who witness fewer incidents of physical violence and experience positive interactions between their caregivers.
- **Extent of coping strategies and skills.** Children with poor coping skills are more likely to experience problems than children with strong coping skills and supportive social networks.
- **Age.** Younger children appear to exhibit higher levels of emotional and psychological distress than older children. It is possible that, because they have more fully developed cognitive abilities, older children are better able to understand the violence and use coping strategies.
- **Elapsed time since exposure.** Children often have heightened levels of anxiety and fear immediately after a violent event. Fewer of these effects are seen as time passes.
- **Gender.** In general, boys exhibit more “externalized” behaviors (e.g., aggression or acting out) while girls exhibit more “internalized” behaviors (e.g., withdrawal or depression).
- **Presence of child physical or sexual abuse.** Children who witness domestic violence *and* are physically abused are at greater risk for emotional and psychological maladjustment than children who only witness violence and are not abused (Carlson, 2000; Edleson, 1999; Hughes et al., 2001).

In 2005, the Massachusetts Advocates for Children Trauma and Learning Policy Initiative, in collaboration with the Hale and Dorr Legal Services Center of Harvard Law School and the Task Force on Children affected by Domestic Violence, published a report and policy agenda entitled *Helping Traumatized Children Learn* (Cole et al., Massachusetts Advocates for Children). This resource, available from the Massachusetts Advocates for Children website at http://www.massadvocates.org/uploads/95/135/Help_Tram_Child-Med.pdf, offers guidance to schools in developing an environment in which children traumatized by violence can focus and learn.

Bullying and Victimization

Victims of bullying and harassment frequently experience low self-esteem, depression, loneliness, and anxiety. They also tend to be socially marginalized, have learning difficulties, and have difficulties getting along with classmates (Juvonen, Graham & Schuster, 2003). Recent research indicates that being subjected to bullying in middle school may result in a range of problem behaviors, such as alcohol abuse, in high school (Rusby et al., 2005)

Bullies are also likely to have both school problems and difficulty with peer relationships, but research indicates that, even if they are not liked, they are often accorded high social standing and may be encouraged by classmates, who act as passive bystanders to bullying (Juvonen, Graham & Schuster, 2003).

Victims of bullying who also bully others tend to be at particularly high risk of serious emotional and behavioral problems. These “bully-victims” are the most troubled and most closely fit the profiles of violent offenders (Juvonen, Graham & Schuster, 2003). (See Chapter 13 for more information about bullying, teasing, and harassment.)

What Schools Can Do

- Implement antibullying programs that address the role and responsibilities of bystanders in the bullying dynamic and alter social norms that reward bullying. (See Chapter 13 Resources.)
- Provide educators, health care professionals, and other staff with training on how to prevent bullying and how to intervene.
- Train teachers and other staff to work with school nurses, counselors, and mental health staff to deal with the symptoms of bullying and victimization.
- Ensure that school nurses and counselors understand the underlying dynamics of bullying and have the skills to provide necessary support and assistance to all parties.

Divorce

It is estimated that about half of all children in the United States will spend part of their lives in a single-parent family. Given this statistic, it is likely that every school will have at least some children of divorced or divorcing families in every class.

There is considerable variability in how children cope with divorce and/or separation. Following such an event, it is common for children to experience feelings of anger, grief, guilt, sadness, helplessness, and loss. Although separation or divorce may be experienced as a relief for some, especially if there has been long-term conflict or abuse, this feeling is likely to be mixed with other emotions.

Any separation or divorce creates disruption and stress for the entire family, but the impact may be more severe in some instances, such as when the breakup is accompanied by relocation, financial hardship, or restricted contact with a parent.

All of the following symptoms may be indicative of normal reactions to divorce, if they are not very severe, protracted, or numerous:

- inability to concentrate;
- diminished school performance (often extreme);
- obsession with school performance, or grades;
- crying for no apparent immediate reason;
- displays of anger, acting-out, sullenness, or rebelliousness;
- loss of enthusiasm, sense of humor, or joy;
- regression to outgrown self-comforting behaviors such as thumbsucking;
- development of tics or nervous behaviors such as nailbiting or hair pulling;
- withdrawal or isolation of self;
- loss of memory or inability to follow directions;
- development of an intense need to please;

- pervasive sadness; and
- rejection of one parent.

If these symptoms persist or become more severe, the child may need additional help from a mental health professional.

What Schools Can Do

The school represents a safe environment for the child of separating or divorcing parents. Educators, nurses, counselors, and support staff can help by being aware of the various reactions children may experience, by being alert to signs of failure to cope, and by having a plan to help children who are having difficulty as a result of parental separation or divorce. Schools and school staff can respond in the following ways to try to help children in this situation:

- Keep in touch with parents about the child's school experience. Whenever appropriate, arrange for all parents to receive information from the school and for all parents to attend conferences and other school events. (See note below.)
- If the parents or child self-disclose, explain that it is common for children to feel strong emotions as a result of parental separation and/or divorce and that these emotions may, at times, make it hard to pay attention in school or perform schoolwork as usual. Encourage the child to talk to a trusted adult if feelings become overwhelming.
- When there is concern in any way about the severity of a child's reaction, lack of signs of recovery, or any other aspects of behavior, contact parents for referral of the child to a mental health professional immediately.
- Encourage participation in a divorce support group, if appropriate and available. (Many schools offer support groups, led by a professional such as behavioral health specialist or a school nurse, for children whose families are undergoing divorce.)
- Do not presume that there are 2 biological parents in any home.
- If appropriate, become familiar with the child's schedule for seeing parents. The change in routine may be confusing for the child, and it may help him or her to know that the school is aware of the changes.

Note: Although it is always best if both parents can continue to be partners in the family-school relationship, information should not routinely be shared with the noncustodial parent without permission of the custodial parent. The school should find out which parent has custody and ask about custodial arrangements and whether the other parent is allowed to be involved in school activities. *This must be communicated to staff members involved with the child, as it is relevant to issues such as early dismissal, report cards, and progress notes.*

Note: M.G.L. c.71, s.34H, which governs the process through which schools make student records available to noncustodial parents, was amended in 2006 to bring it into compliance with federal law (the Family Educational Rights and Privacy Act (FERPA), 20 U.S.C. s.1232g). To obtain the current wording of the statute, check the Massachusetts General Laws. An unofficial version may be found online at http://www.mass.gov/legis/laws/seslaw06/sl060062.htm, but it is always advisable to refer to an official edition.

For the same reason, emergency regulations were adopted by the Massachusetts Board of Education in July 2005 to amend the Student Records Regulations concerning access to student records by noncustodial parents. These emergency regulations, 603 CMR 23.07(5), which took effect for the start of the 2005–2006 school year, state that noncustodial parents are eligible to obtain access to their children's student records *unless* the school or district has been given documentation that:

(1) the noncustodial parent has been denied legal custody based on a threat to the safety of the student or to the custodial parent, or
(2) the noncustodial parent has been denied visitation or has been ordered to supervised visitation, or
(3) the noncustodial parent's access to the student or to the custodial parent has been restricted by a temporary or permanent protective order, unless the order or any subsequent court order specifically allows access to student record information.

For the full background explaining the reason for these changes, see the advisory from the Commissioner of Education issued in November 2005, available online at http://www.doe.mass.edu/news/news.asp?id=2672. The complete text of the amended regulations concerning access to student records by noncustodial parents is available at http://www.doe.mass.edu/lawsregs/603cmr23.html.

Death of Family Member or Friend

When a child or adolescent experiences the death of a significant other, whether a family member, a friend, or a member of the school community, he or she is likely to need both support and help in understanding and coping with the resulting emotions.

A wide range of feelings may present in grieving children and adolescents, and their feelings may fluctuate frequently, since children are often not able to focus on grief for long blocks of time. Emotional reactions to grief may manifest as shock, disbelief, denial, anger, guilt, fear, anxiety, depression, insecurity, helplessness, loneliness, and sadness. Children and adolescents may also experience forgetfulness, confusion, and difficulty concentrating and completing tasks. Behavioral changes may also occur, including hyperactivity, oppositional behavior, withdrawal from family and friends, loss of interest in usual activities, acting out, developing symptoms of physical illness, and engaging in risk-taking behaviors.

Depending upon the child's age and developmental stage, he or she will understand information about death in different ways. Hospice Net offers a helpful guide to the various ways in which children and teens understand death: http://www.hospicenet.org.

What Schools Can Do

- Reach out to the student and acknowledge the loss.
- Be prepared for the possible psychological and physiological responses to grief and loss that the student may experience. Younger children may regress to outgrown behaviors, such as thumbsucking, hair twisting, or other self-comforting behaviors. Educators should support the child during this phase and prevent any teasing from other children about these behaviors.
- Anticipate that there will be both expected and unexpected triggers of grief for a student who has experienced loss, and provide support to the student.
- Maintain the usual school routines while also providing opportunities for students to express fears and be reassured. Some children may fear that they too will die or that someone else close to them may die soon.
- Encourage the students to ask questions if they have them, and remember that children may need to ask the same questions about death many times.
- Reassure students that any negative thoughts they may have had about the person who died did not cause the death.
- Collaborate with the school librarian and school counselor to help students during grief and loss by exploring literature for children such as books and poems, and activities such as journal writing, letter writing, memory books, or art therapy.

- Assist older students in establishing a plan for managing coursework. Review the student's workload and consider ways to restructure the work, such as graduated assignments, reduced homework, and extended study time.
- Establish a plan to check in with the student at regular intervals, to monitor progress and provide ongoing support.
- Amend the student's schedule to provide a degree of flexibility, providing opportunities to access the counselor and/or nurse when needed.
- Be aware that the grieving student may feel very different from his/her peers. Unless the student's peers have personally experienced loss and grief, they may be unprepared to offer support and may avoid discussing the loss with the student.
- Watch closely for warning signs of persistent uncharacteristic behavior and risk-taking behaviors such as alcohol and drug use.
- If behavioral changes occur, the school counselor, school nurse, and/or student support team should work together with the student's family to develop a plan of care for the student.

Foster Care and Adoption

A report on the mental health difficulties experienced by youth in foster care and promising strategies for treatment, *Evidence-Based Practices in Mental Health Services for Foster Youth*, (Marsenich, 2002) found that the incidence of emotional, behavioral, and developmental problems among children in foster care is *3 to 6 times greater* than that seen among other children. Externalizing disorders such as disruptive behaviors, delinquency, hyperactivity, and aggression are more common in foster children than internalizing disorders such as anxiety, fear, low self-esteem, sadness, and depression. Recent research confirms that children in foster care experience many of the same disruptive and behavioral problems as abused and maltreated children and that children adopted from foster care carry these issues with them into their new home situations.

Children adopted internationally may struggle with a different set of difficulties, including learning difficulties resulting from institutional care, inadequate early stimulation, and poor nutrition; adaptation to a new culture; the need to learn a second language; and attachment issues. Even children adopted domestically at birth or children being raised by family members other than their parents may experience problems as a result of feeling different from their peers.

What Schools Can Do

- Stress to staff the importance of not making assumptions about students' family backgrounds and of avoiding assignments such as documenting family histories, which may cause a student in foster care or an adoptive family to feel different or left out.
- Educate staff, through professional development, about the particular learning, behavioral, and emotional challenges that may confront children and adolescents in foster care or adoptive homes. (One helpful resource is the pamphlet *School Days…What Adoptive Parents Would Like Teachers to Know* (2002), available from Adoptive Families Together, Inc.)

Homelessness

Families are now the fastest growing segment of the homeless population and account for almost 40% of the nation's homeless. Frequent moves, lack of transportation, and the daily demands of locating food and shelter often result in interruption of education for homeless children. Those children who do manage to attend school must do so while coping with stressful and often traumatic events that can profoundly impact cognitive and emotional development.

A study entitled *Homeless Children: America's New Outcasts* (Bassuk et al., 1999) reported that:

- 74% of homeless children worry they will have no place to live;
- 58% worry they will have no place to sleep; and
- 87% worry that something bad will happen to their family.

Within a single year:

- 97% of homeless children move, many up to 3 times;
- more than 30% are evicted from their housing;
- 22% are separated from their family to be put in foster care or sent to live with a relative; and
- almost 25% have witnessed acts of violence within their family.

According to the National Mental Health Association, children between the ages of 6 and 17 who are homeless struggle with high rates of mental health problems. Nearly 1 in 3 children who are homeless has at least one major mental disorder that interferes with daily activities, compared to nearly 1 in 5 school-age children who are not homeless. Almost half of children who are homeless have anxiety, depression, or withdrawal, compared to less than 1 in 5 other school-age children. And more than 1 in 3 children who are homeless manifest delinquent and aggressive behavior, compared to less than 1 in 5 other school-age children. (NMHA, 2006)

Unruly behavior or emotional withdrawal is often the earliest response of young children to the crisis of homelessness (Rosenheck et al., 1998). Transience and anxiety contribute to learning disabilities in school-age children, whose education is interrupted by multiple moves and whose attention is distracted by loss of sleep, frequent illness, and hunger. The negative impact of shelter life on self-esteem, combined with lack of consistency in schools and daycare arrangements, often results in more pronounced behavior disorders and depression, further undermining academic competence and later achievement (Institute for Children and Poverty, 1999).

What Schools Can Do

The following suggestions are based, in large part, on an article "Learning about the Homeless," published by Counseling Today Online, an online publication of the American Counseling Association (Hutchinson, 2004).

- Educate staff about the problems affecting children who are homeless and about how they can provide support, consistency, and security for children in this situation.
- Be aware of the necessity for policy flexibility. For example, the federal McKinney-Vento Homeless Assistance Act of 2001 stipulates that homeless children cannot be denied entry to school for lack of immunization records. (See Chapter 8 for further discussion of immunization requirements.)
- Train staff to be aware of possible signs that a student is homeless. These may include: falling asleep during class because of chronic hunger and fatigue; coming to school without lunches or snacks; inadequate or inappropriate clothing; poor grooming; frequent absences or tardiness; and coming to school without books, supplies, completed homework assignments, or signed papers.
- Reduce stigmatization and help to normalize the school experience for homeless children by keeping a supply of spare items such as clothing, snacks, and school supplies on hand.
- Encourage classroom activities designed to increase self-esteem, social skills, awareness of diversity, and adjustment to situational stress, which may benefit all students but are likely to be particularly helpful for students dealing with homelessness.
- Offer individual and/or group counseling.
- Work with parents/guardians to develop concrete goals and objectives.

- Reach out to the community. Find services available to children and families experiencing homelessness, and establish working relationships with community agencies such as youth services, the police department, and local shelters.
- Seek opportunities for early-intervention programs that include developmentally based curriculum components on developing cognitive skills, creativity, self-expression, problem solving, and self-esteem. Such programs can promote bonds and connections that have been broken due to homelessness, helping children to excel in school and to develop positive relationships with their peers.
- Attempt to retain consistent school placement, should the family need to relocate.

Chronic Illnesses and Disabilities

Children and adolescents with physical or developmental differences may, as a result of those differences, experience teasing, bullying, isolation, and other social difficulties that can lead to low self-esteem, depression, and high-risk behaviors. Current research indicates that children with a long-lasting physical illness are twice as likely to suffer from emotional problems or disturbed behavior. This is especially true of physical illnesses that involve the brain, such as epilepsy and cerebral palsy (Royal College of Psychiatrists, 2004).

Students with chronic illnesses may also have to cope with uncomfortable treatments, restrictions in diet and activity, frequent or protracted interruptions of school attendance due to illness or medical treatments, and the prospect of further physical decline. (See also Chapter 7.) In some instances, medications may exacerbate or even cause problems such as depression. All of these factors can increase loneliness and the feeling of being different from other students and may cause school problems, including avoidance of school.

Severity of illness is not usually the primary determinant of whether a child or adolescent with a chronic illness will develop emotional or behavioral problems. The amount of stress that the condition causes for the child and the family is a much more likely indicator. Stress may result from a number of causes, but sleep deprivation is one of the most common. Exhausted parents and siblings may themselves develop psychological problems such as anger and depression.

Warning signs of distress in children with chronic illness include problems at school or in social relationships; low self-esteem, manifested as self-blame, helplessness, or hopelessness; and denial, including poor compliance with treatment (Swanston, Williams & Nunn, 2000).

Teenagers with chronic illnesses may experience particular conflict between forced dependence on parents and doctors and the natural urge for independence felt by all adolescents. Sometimes this conflict manifests as rebellion against medication regimens, with the adolescent decreasing or stopping use of prescribed medication without consulting his/her physician.

<u>What Schools Can Do</u>

- Every child with a chronic illness should have an individual health care plan (IHCP). The school nurse should develop the IHCP, collaborating closely with the student, parents/guardians, and the primary care provider. It is recommended that young people with chronic conditions be given as active a role as possible in their care and treatment (Isaacs & Sewell, 2003). The care plan should address physical health and any potential behavioral health issues so as to maximize learning while supporting a positive educational experience. See Chapter 7 for additional information on IHCPs.
- Communication with parents/guardians should be clear and have the goal of providing support and assistance to both child and family. Because the level of stress within the family can affect the emotional well-being of children and adolescents with ongoing health

problems, school nurses and counselors should be prepared to offer information about support groups and respite resources, if applicable.

Sexual Orientation

GLBT (gay, lesbian, bisexual, and transgender) and questioning youth are frequently singled out for bullying or victimization and may be targets not only of harassment but also of threats and physical or sexual violence. (See also Chapters 12 and 13 for more information about sexual orientation and violence.) In one nationwide survey, over 83% of GLBT students reported verbal harassment at school, and 74% of transgender students reported sexual harassment. Transgender students may include individuals who were assigned a gender, usually at birth and based on their genitals, but who feel that this is a false or incomplete description of themselves. A transgender individual may have characteristics that are associated with a particular gender, identify elsewhere on the gender continuum, or exist outside of it as "other " or "third." Over 21% of all GLBT youth reported being punched, kicked, or injured with a weapon at school because of their sexual orientation (Kosciw & Cullen, 2001). According to the 2003 Massachusetts Youth Risk Behavior Survey (MYRBS) conducted by the Massachusetts Department of Education, 15% of students surveyed in grades 9–12 who self-identified as gay or lesbian reported having skipped school because they felt unsafe; only 4% of their straight peers reported doing this.

GLBT youth also often lack home supports. When sexual orientation is disclosed or discovered by family, many GLBT youth are mistreated, made the focus of the family's dysfunction, or thrown out of their homes (Savin-Williams, 1994). A conservative estimate from service providers is that 25% to 40% of homeless youth may be GLBT (Ryan & Futterman, 1997).

Negative societal messages regarding sexual orientation, peer rejection and abuse, and lack of family support are often internalized by GLBT youth, causing them to suffer from self-hatred as well as social and emotional isolation. They may resort to substance use in attempts to manage stigma and shame, to deny same-sex sexual feelings, or as a defense against ridicule and violence (Ryan & Futterman, 1997). The 2003 MYRBS found that sexual-minority youth were disproportionately likely to engage in high-risk behaviors such as smoking, alcohol use and binge drinking, drug use, gang membership, and carrying weapons. These youth were also found to be at higher-than-average risk for suicidality. The Massachusetts survey results are congruent with numerous other studies that have established links between suicide attempts and gender nonconformity, early awareness of sexual orientation, stress, violence, lack of support, school dropout, family problems, homelessness, and substance use (Remafedi, 1999).

<u>What Schools Can Do</u>

- Make acceptance of differences in sexual orientation part of any sexuality education curriculum.
- Identify and counsel students who are singled out for bullying or victimization.
- Establish school support groups for GLBT youth (see Chapter 13).

Traumatic Events

The National Child Traumatic Stress Network (NCTSN) defines a traumatic event as "a sudden and unexpected occurrence that causes intense fear and may involve a threat of physical harm or actual physical harm" and notes that a traumatic experience may have a profound effect on a child's physical health, mental health, and development. Such events may include the accidental injury or death from illness of a schoolmate, a student suicide, an incident of school violence, a natural disaster, or a terrorist attack.

How students experience and process trauma can vary widely and is influenced by many factors, including differences in temperament, prior history of trauma and loss, and prior or current mental health issues. Nevertheless, there is substantial commonality of responses among age groups. The American Academy of Experts in Traumatic Stress (AAET) reports that the following are often seen as *immediate* reactions to a significant crisis:

- shock and numbness;
- denial or inability to acknowledge the situation has occurred;
- dissociative behavior — appearing dazed or apathetic, or expressing feelings of unreality;
- confusion;
- disorganization;
- difficulty making decisions; and
- suggestibility.

Ongoing emotional effects, while less severe, can be significant and potentially last for weeks or months. The NCTSN offers the following guidance about how these may manifest in various age groups:

- **Preschoolers** may lose recently acquired developmental milestones and regress to simpler speech or behaviors such as bedwetting and thumbsucking. They may become clingy and worry about the safety of parents/guardians. Children in this age group may also become more irritable with more temper tantrums and have more difficulty calming down, although occasionally the reverse effect is seen and children become very withdrawn, subdued, or even mute. Difficulties with falling asleep or staying asleep, nightmares about the event, or other bad dreams are common. Typically, preschoolers will process the event through play.
- **Elementary school children** may show signs of distress through somatic complaints such as stomachaches, headaches, and pains. They may exhibit changes in behavior such as increased irritability, aggression, and anger, and behaviors may be inconsistent. Impaired attention and concentration and school absences may affect school performance. At late elementary age, talk and questions about the event may dominate conversation.
- **Middle school and high school youth** exposed to a traumatic event often feel self-conscious about their emotional responses to the event. They often experience feelings of shame and guilt about the traumatic event and may express fantasies about revenge and retribution. For adolescents, a traumatic event may foster a radical shift in the way they think about the world. Some of these adolescents may begin to engage in self-destructive and reckless behaviors or become accident-prone. There may be a shift in their interpersonal relationships with family members, teachers, and classmates. These students may show a change in their school performance, attendance, and behavior.

A more detailed ***list of possible responses to a traumatic event by age group*** may be found in the AAET document *Teacher Guidelines for Crisis Response,* available for download at http://www.schoolcrisisresponse.com.

What Schools Can Do

The publication *Helping Children and Adolescents Cope with Violence and Disasters* (National Institute of Mental Health (NIMH), 2001) advises that school staff and administrators can play a major role in the healing process when violence or disaster affects a whole school or community. Its recommendations are:

- If possible, staff should give themselves some time to come to terms with the event before attempting to reassure the children.
- Do not try to rush back to ordinary school routines too soon. Give the children or adolescents time to talk over the traumatic event and express their feelings. Encourage

different and age-appropriate ways to express feelings (e.g., memory books, diaries, commemorative gardens, collages).
- Respect the preferences of children who do not want to participate in class discussions about the traumatic event. Do not force discussion or repeatedly bring up the catastrophic event; doing so may retraumatize children.
- Hold in-school sessions with entire classes, with smaller groups of students, or with individual students. These sessions can be very useful in letting students know that their fears and concerns are normal reactions. Many counties and school districts have teams that will go into schools to hold such sessions after a disaster or episode of violence. Involve mental health professionals in these activities if possible.
- Offer art and play therapy for young children in school.
- Be sensitive to cultural differences among children. In some cultures, for example, it is not acceptable to express certain emotions.
- Encourage children to develop coping and problem-solving skills and age-appropriate methods for managing anxiety.
- Hold meetings for parents to discuss the traumatic event, their children's responses to it, and how children can best be supported. Involve mental health professionals in these meetings if possible.

After the initial crisis, the school nurse and school physician should collaborate with other school staff, including counselors, to plan ongoing services. Most children and adolescents, if given adequate support, will recover almost completely from the fear and anxiety caused by a traumatic experience within a few weeks. However, some children and adolescents may require more help over a longer period of time in order to heal.

Children and adolescents who may require the help of a mental health professional include those who show *avoidance behavior,* such as resisting or refusing to go places that remind them of the traumatic event, and *emotional numbing,* a diminished emotional response or lack of feeling toward the event. Youth who have more common reactions such as *reexperiencing* the trauma in the form of nightmares and disturbing recollections during the day, and *hyperarousal*, including sleep disturbances and a tendency to be easily startled, may respond well to supportive reassurance from parents, nurses, teachers, and other trusted adults.

The complete NIMH booklet is available for free download at http://www.nimh.nih.gov/publicat/violence.cfm.

SELECTED MENTAL HEALTH CONDITIONS

What follows is a review of the prevalence and symptoms of some common psychological problems of school-age children and adolescents. Suggestions regarding some school-based interventions are included.

Note: The information contained in this section should not be regarded as comprehensive or definitive. Mental health research continues to yield new insights, and information regarding medications and treatments continues to evolve.

Attention-Deficit/Hyperactivity Disorder (ADHD)

ADHD, the most commonly diagnosed behavioral disorder of childhood, is estimated to occur in 3% to 5% of children in any 6-month period according to *Mental Health: A Report of the Surgeon*

General (U.S. Department of Health and Human Services, 1999). It is characterized by 2 types of behavior — inattention and hyperactivity-impulsivity — although one may be present without the other. Symptoms include fidgeting, difficulty in playing quietly, excessive talking, and inappropriate or impulsive behavior, such as not being able to wait for one's turn, interrupting others, and blurting out answers in class.

However, not all children who manifest these symptoms have ADHD. Inattention and hyperactivity are associated with many other disorders as well as with physical hunger, safety fears, and trauma flashbacks. Although many children manifest symptoms of ADHD from time to time, children diagnosed with the disorder experience the symptoms frequently and in a variety of settings, including in the home, in school, and with friends, and the symptoms interfere with their functioning. Diagnosis and recommendations for treatment, including medication, should always be left to clinicians.

ADHD is associated with the development of learning disabilities, conduct disorder or oppositional defiant disorder, and depression. Symptoms of motor hyperactivity and impulsivity tend to diminish with age, although inattention is likely to persist into adulthood.

The American Academy of Child and Adolescent Psychiatry describes the cornerstones of treatment as support and education of parents, appropriate school placement, and psychopharmacology. Pharmacological treatment with psychostimulants has been the most widely studied treatment for ADHD. Psychostimulants include methylphenidate (Ritalin and Methylin), sustained release methylphenidate (Concerta, Ritalin SR, and Metadate), dextroamphetamine (Dexedrine, Dextrostat), and dextroamphetamine and amphetamine (Adderall). These medications can reduce hyperactivity and inattention and improve behavioral control and cognitive performance. They are effective over the long term; however care must be taken to keep abreast of emerging research relating to these medications.

It should be noted that children and adolescents vary considerably in their response to stimulants, with some achieving only partial relief, and others unable to tolerate the side effects, which can include insomnia, decreased appetite, stomachaches, headaches, and jitteriness. The timing of the administration of these drugs is critical to maximize school performance and minimize interference with sleep. The school nurse, in collaboration with the student's support team and parent/guardian, should develop an Individual Health Care Plan (IHCP) and/or medication plan that supports the proper timing of the administration of prescription medications. Note that the 2004 amendments to the Individuals with Disabilities Education Act (IDEA) prohibit schools from requiring a child to take medication as a condition of attending school (see earlier section on Legal/Regulatory Issues). (Also see Chapter 6 for further discussion of prescription medications.)

Psychosocial treatments are another research-validated option for management of ADHD, particularly for children who cannot tolerate medication or who experience only partial relief of symptoms. Psychosocial intervention usually involves training parents and teachers in behavioral techniques such as use of "time-out," points systems rewarding good behavior, and contingent attention (adults reinforcing positive behavior by paying attention to it). A particular challenge of behavioral intervention is that it requires a consistent approach to dealing with the child, carried out at home by parents as well as by teachers and therapists. Research has indicated that, while behavioral techniques do not improve the core symptoms of ADHD as well as psychostimulants, these techniques can help improve targeted behaviors such as social skills or symptoms of aggression. Thus, for some children, multimodal intervention is warranted: See *Mental Health: A Report of the Surgeon General* (U.S. Department of Health and Human Services, 1999).

Education of parents, children, and teachers about ADHD and treatment options is critical. Parents may be given information about support groups, such as those run by Children and Adults with Attention Deficit/Hyperactivity Disorder (CHADD) or the Parent Professional Advocacy League (PAL), an organization for families of children with mental health problems. They should also be given the websites and/or addresses of reputable organizations such as CHADD and the Attention Deficit Disorder Association. (See Resources section for contact information for all of these organizations.)

Concerns about the treatment of ADHD have centered on: (1) possible overdiagnosis, (2) medication side effects, including potential for increased signs of depression (see the Public Health Advisory under bipolar disorder), (3) long-term effects of medication, and (4) suspected linkage to adolescent drug abuse. Although there is an often-voiced sentiment that children are being overdiagnosed with ADHD and unnecessarily medicated, recent reports have found little evidence of this. While in certain communities this situation may exist, it is more common that children with ADHD are not being diagnosed and are instead being labeled as behavior problems. Guidelines published in 2000 by the American Academy of Pediatrics for the diagnosis and management of ADHD have improved diagnostic practice (Herrerias et al., 2001).

With regard to safety, a major NIMH study of multimodal treatment of ADHD that followed children over a 14-month period showed no safety concerns (Jensen et al., 2001). Two studies reported in the January 2003 issue of *Pediatrics* (Barkley et al., 2003, Wilens et al., 2003) refuted suggestions that providing a controlled substance to children to treat behavioral problems might lead to later substance abuse. In fact, one of the studies (Wilens et al., 2003) concluded that stimulant medication treatment in childhood is associated with *decreased* risk of subsequent substance abuse in individuals with ADHD.

What Schools Can Do

- School personnel (educators, nurses, counselors) can observe the child's behavior during different activities and times of the day.
- The nurse may complete a health assessment of the child with parental input.
- If the child has what appears to be a behavior problem, staff may investigate whether other factors are involved.
- Staff should work with parents/guardians to refer a child who appears to have ADHD to the family physician or clinician, who can make a definitive diagnosis and discuss treatment options.
- Schools should make sure that nurses, educators, counselors, and other staff are trained in behavioral techniques and are alert to signs of distress that may indicate an accompanying depression.
- When a child is diagnosed with ADHD, the school nurse should work with teachers to complete regularly scheduled behavioral scales and share these with the physician, provided the parent/guardian gives permission. This feedback will assist in medical management.
- Schoolwide policies and individual 504 plans and/or IEPs can ensure that children's individual needs are met. (See Chapter 7 for more information on IEPs and 504 plans.) For example, some children need opportunities to exercise vigorously several times a day. Regular, vigorous exercise provides immediate relief for a child with ADHD and, according to emerging research, may affect the course of the disease.

Mood Disorders

The most commonly diagnosed mood disorders experienced by children and adolescents are all variants of depression: major depressive disorder, dysthymic disorder, and bipolar disorder. Everyone feels sad sometimes, and the word “depression” is used to describe a variety of experiences. Depression exists along a continuum, ranging from transient feelings to mood disorders. *Reactive depression,* the name for feelings of sadness, discouragement, and moodiness that are normal responses to loss, failure, or disappointment is the most common form of mood problem in youth and is not regarded as a mental disorder. Sad feelings may last a few hours to as long as 2 weeks and usually create few problems. By contrast, *clinical depression* is an illness in which feelings and behaviors last longer than a few weeks and are so intense that they interfere with normal developmental tasks and require treatment. Although suicide is not a mental disorder in and of itself, the presence of a mood disorder is a risk factor for suicide.

While mental health professionals continue to research and debate the exact causes of depression, onset appears to be associated with a complex mix of factors, including stress and emotional loss. One widely held theory suggests the existence of a genetic component that may predispose people to changes in body chemistry in stressful situations that may result in their becoming depressed. Divorce, death, illness, family discord, abuse, confusion about sexual identity, and neglect are examples of stressors that may make children more vulnerable to depression. *It is important to recognize, however, that no one can define a stressful event for anyone else.* Two children may react very differently to the same experience. For example, if both experience the death of a significant person, one child’s reaction may be short-lived grief, while the other may develop full-blown depression.

Medical illnesses (including cancer, injuries, infections, and chronic medical illnesses) can also trigger symptoms of depression in children and adolescents, as can drug abuse, the effects of medication or other forms of treatment, or exposure to toxins. Other mental disorders that can cause depressive symptoms must also be considered, including anxiety and bipolar disorders. Some children who go on to develop a bipolar disorder or schizophrenia present initially with major depression (Beers et al., 2006).

In the past decade, treatment for depression has included psychosocial interventions and pharmacological treatment, used individually or in combination. For treatment of adolescent depression, a combination of psychotherapy and antidepressants is the preferred modality. When treating younger children, most clinicians prefer to stick to a course of psychotherapy, unless the depression is severe or has not previously responded to psychotherapy (Beers et al., 2006). Many research studies have documented the effectiveness of cognitive-behavioral therapy, which challenges habitual thought patterns and focuses on the development of social and coping skills, assertiveness, and relaxation techniques, as a method of treatment for depression in children and adolescents (Albano & Kendall, 2002). A number of experimental studies seem to suggest, however, that it is not necessarily cognitive-behavioral therapy, itself, but the process of talking about problems in a supportive setting that is important to producing positive impacts (Child Trends, 2001).

Selective serotonin reuptake inhibitors (SSRIs) are the treatment of choice when antidepressants are indicated, because they are generally well tolerated. Secondary amine tricyclic antidepressants, especially desipramine, are also effective but may be more difficult to use because high doses are required, and adverse effects that discourage compliance may be experienced. Children receiving antidepressants should be closely monitored for the emergence of behavioral side effects, which may include disinhibition, behavioral activation or, more rarely, aggressiveness or suicidality (Beers et al., 2006). Interpersonal and cognitive-behavioral

psychotherapies are also being used with increasing frequency to combat the inertia and self-defeating attitudes that are typical of this disorder; such therapies are best combined with psychopharmacology. In October 2004, the U.S. FDA issued a public health advisory requiring that antidepressant drugs carry a label warning of the increased risk of suicidal thinking and behavior in children and adolescents treated with these drugs. In an analysis of 24 drug trials, the risk of suicidality among children and adolescents with major depressive disorder, obsessive-compulsive disorder, and other psychiatric disorders who were on those drugs was 4% compared to 2% in the placebo group, though no child died in the trials. It should be noted that the use of these drugs has not been banned, but careful monitoring is urged, particularly within the first 4 months of a child's taking these medications. Children and adolescents who are doing well on antidepressants should not be taken off them, since the risk associated with untreated depression is high (Leslie et al., 2005).

Major depressive disorder is estimated to affect 5% of children ages 9–17 (U.S. Department of Health and Human Services, 1999). Starting in adolescence and possibly with the onset of puberty, girls and women become significantly more likely than men to develop major depressive episodes at some point during their lives (American Psychiatric Association, 2000).

Key features of a Major Depressive Episode are sadness (or, in children, irritability) or loss of interest or pleasure in nearly all activities, persisting for most of the day, nearly every day, for at least 2 consecutive weeks. The individual must also experience at least 4 other persistent symptoms from a list that includes feelings of worthlessness or guilt, pessimism about life and the future (in some situations to the point of considering suicide), decreased energy and motivation, difficulty thinking, concentrating or making decisions, changes in sleep, appetite or weight (in children, failure to make expected weight gains). The episode must also be accompanied by clinically significant distress or impairment of functioning (American Psychiatric Association, 2000).

The irritability associated with childhood depression may manifest as overactivity and aggressive, antisocial behavior (Beers et al., 2006). Anxiety (such as fears of separation or of meeting new people) and somatic symptoms (such as headaches, stomachaches, and general aches and pains) are more commonly associated with major depressive disorder in youth than in adults. It is estimated that two-thirds of youth with major depressive disorder have another mental disorder such as an anxiety disorder, a disruptive or antisocial disorder, a substance abuse disorder, or dysthymic disorder, with depression beginning after the onset of the accompanying mental disorder.

Because relapse and recurrence are common, it is recommended that children and adolescents remain in treatment for at least 1 year after symptoms have remitted, and for an indefinite amount of time if there have been 2 or more episodes (Beers et al., 2006).

Dysthymic disorder, or dysthymia, which is estimated to affect 3% of children ages 9–17 (U.S. Department of Health and Human Services, 1999), is a chronic, low-grade depressed or irritable mood. Diagnosis requires that symptoms persist for at least 2 years (American Psychiatric Association, 2000), but the condition, which most typically begins during adolescence, may be ongoing for many years or even decades and may be complicated by episodes of major depression. Symptoms include habitual gloom, pessimism, humorlessness, lethargy or passivity, introversion, hypercriticality (especially in regard to self), and general negativity or complaining (Beers et al., 2006).

About 70% of children with dysthymia go on to develop major depression, and one can have both conditions simultaneously ("double depression").

In **bipolar disorder,** episodes of mania alternate with depression, *each lasting for weeks to months at a time.* Although some children and adolescents experience rapid cycling between depression and mania, this disorder usually begins in childhood or adolescence with depression. The mania may manifest months or years later. About a third of children who experience an episode of severe depression before puberty will "convert" to bipolar disorder during their adolescent or early adult years (Beers et al., 2006).

Adolescents with mania feel energetic and confident. They may start projects that they don't finish, and engage in reckless behavior. They talk a great deal, often rapidly or loudly, and will say that their thoughts are racing. Their schoolwork can be disorganized and chaotic. It should be noted that antidepressant activation, which can occur when a child takes an antidepressant medication, produces symptoms such as increased activity, irritability, insomnia, grandiosity, hypersexuality, hallucinations, and rapid speech, and is sometimes mistaken for the manic phase of bipolar disorder. There is also some controversy among professionals about the criteria to be used in diagnosing bipolar disorder. The concern is that misdiagnosis may lead to unwarranted medication or impede a youth's efforts at self-management and self-control.

Treatment of bipolar disorder includes treatment of both the mania and the depression. Youth are often treated with a mood stabilizer, sometimes in combination with an antidepressant. Most mood stabilizers have side effects that warrant regular medical monitoring. Lithium, which has been the mainstay treatment, is known to sometimes produce toxicity and the impairment of renal and thyroid functioning, and monitoring of serum lithium levels is required. The effect of other mood stabilizers on children and adolescents is currently under study.

What Schools Can Do

Children and adolescents at risk for depression and other mood disorders can be helped by consistent nurturing from trusted adults. People who survive traumatic childhood experiences often mention the crucial role that a single caring adult played in their survival. Very often, that caring adult was an educator, school nurse, counselor, athletic coach, or activities director. The following are suggestions for school personnel to help children who are at risk:

- Refer any child who exhibits symptoms of depression to the school nurse or mental health professional.
- Activate the student support team(s).
- In consultation with the child's parents or guardians, refer the child to a pediatrician, other primary care providers, and/or a behavioral health specialist for assessment.
- Implement a primary prevention program in the school that stresses the normalcy of a range of feelings following certain kinds of events, and the availability of school adults to help with those feelings.
- Provide in-service training to help all staff understand and respond appropriately to mental health issues.
- Promote awareness about stress related to traumatic events, as well as about the impact of chronic negative experiences on children and the importance of responding with concern and support.
- Ensure that the school has policies and protocols for immediate intervention, including appropriate referral for students who have suicidal ideation, gesturing, and other tendencies.

Suicidal Behaviors

Suicide attempts and suicides are devastating events for everyone in the school and community. Because a suicide of one student may lead to suicide attempts by other students in the same

school, schools need to be prepared for this possibility when there is a suicide. (See Chapter 13 for additional information.)

In the Massachusetts Department of Education's 2003 Youth Risk Behavior Survey (YRBS), 16% of Massachusetts schoolchildren reported having seriously considered suicide, 13% indicated they had actually made a plan for suicide, and 8% had attempted suicide in the past year. Three percent received medical treatment for a suicide attempt. Because the incidence of completed suicides increases dramatically above age 13, adults need to be especially responsive to signs of risk in adolescents. While girls attempt suicide more often, boys' attempts more frequently lead to death, largely because they tend to use more lethal methods. (See Exhibit 11-1: Youth Suicide Fact Sheet.)

There is no single identifiable cause of suicidal behavior, but certain factors put some youth more at risk. According to the Massachusetts 2003 YRBS, those who have experienced school victimization, dating violence, or sexual contact against their will are especially vulnerable to suicidality. Gay, lesbian, bisexual, and transgender adolescents, students in urban areas, and recent immigrants are also vulnerable to suicidality. Adolescents who were threatened, bullied, or intimidated at school or who felt so unsafe that they sometimes skipped school altogether had far higher rates of suicidality than their peers. Suicidal thinking and behavior were also associated with lower rates of academic achievement and higher rates of other risk behaviors such as substance abuse and recent sexual activity.

Triggers can include fights with parents, low school achievement, lawbreaking, death of a family member, divorce, lack of acceptance by peers, humiliation, bullying, physical abuse, sexual abuse, or relationship breakup. Many children and adolescents experience such stressors, but some are more vulnerable to feeling extremely troubled, hopeless, or anxious. They may feel that life is unbearable, that it will never get better, and that they are *powerless to do anything to change the situation.*

Children today have a much broader knowledge of the world than in earlier times. Some mental health professionals speculate that a significantly stressed family and social environment, coupled with a graphic and detailed knowledge of the state of the world, will predictably lead to a sense of helplessness and hopelessness, common complaints of the depressed suicidal person.

Indications of Risk for Suicidal Behavior

The American Psychiatric Association (APA) lists the following indicators of suicide risk:

1. Sudden drop in school performance
   - reduced class participation (sometimes withdrawing completely);
   - sudden lowering of grades in all or most subjects; and/or
   - failure to meet school expectations previously met.
2. Loss of interest in activities
   - quitting a part-time job, school activity, club, or sports group;
   - less "hanging out" with peers at usual times and locations;
   - isolating self; and/or
   - not responding to telephone calls as usual.
3. Fatigue
   - sleeping too much or too little;
   - dramatic change in energy levels (sometimes hyperactivity);
   - sleeping in class; and/or
   - appearing lethargic and apathetic in class.

4. Inability to concentrate
   - inattentiveness;
   - unable to respond when called upon; and/or
   - frequent responses of “I didn’t hear [understand] the question.”
5. Outbursts of shouting, complaining, or unexplained irritability
   - crying often and easily, sometimes for no apparent reason;
   - rebelliousness with peers and/or school personnel; and/or
   - unusual displays of irritability.
6. Expression of fear or anxiety
   - apprehension in ordinarily comfortable settings; and/or
   - concerns that others are “after” him or her.
7. Aggression, refusal to cooperate, antisocial behavior
   - breaking common, easy-to-comply-with rules;
   - messy, unclean appearance;
   - using obscenities and negative responses in everyday discussions;
   - avowed disinterest in succeeding or completing basic assignments; and/or
   - increasing absences or lateness.
8. Change in peer group
   - seems to be abandoning usual close group or type of friends; and/or
   - seeking friends in groups with bad reputations.
9. Somatic complaints
   - complaining more of illness, headaches, or stomachaches;
   - eating problems (loss of appetite or constant hunger); and/or
   - signs of injuries (self-inflicted, or resulting from risky behavior).
10. Alcohol and/or other drug abuse
    - frequent intoxication or drugged appearance (suicide attempts are often accompanied by ingestion of alcohol or other drugs);
    - appearance of objects associated with alcohol or other drug use; and/or
    - sudden need for more money (may be stealing, seeking another job, or asking others for money).
11. Recurring thoughts or statements about death or suicide
    - written or verbal statements reflecting helplessness and hopelessness;
    - acquiring a weapon, rope, pills, or other potentially lethal device;
    - talking about risky behaviors; and/or
    - fixation on a tragic theme or event (often the death of a famous person).

Any of the following indicators must be viewed as <u>very serious</u> and <u>should be responded to immediately:</u>

12. Making final arrangements and/or amends
    - giving away possessions, especially prized ones;
    - paying off old debts;
    - apologizing for past (often long past) behavior;
    - talking about desired funeral arrangements; and/or
    - sudden dramatic improvement in mood and behavior.
13. Loss
    - death of friend or relative (especially if more than one in a short time);
    - suicide of another student in the school (whether or not they knew the student);
    - breakup with boyfriend/girlfriend;
    - breakup of family;

- diagnosis of health problems in self, family member, or friend; and/or
- arrest or incarceration of self or loved one.

14. Expression of intent
    - The great majority of young people, prior to making an attempt, verbally communicate their intent directly or indirectly often to their friends (who frequently fail to realize the seriousness of the communication).
      Examples of indirect statements are:
        - "My family would be better off without me"
        - "I wish I could go to sleep and never wake up"
        - "I may not make it to graduation"

      Examples of direct statements are:
        - "I can't go on living like this"
        - "I wish I were dead"
        - "I'm going to kill myself"

Note: Any child who has made a previous attempt and is now displaying any of the above behaviors must receive help from a mental health professional *immediately*. An estimated 40% of all completed suicides have been preceded by a nonfatal attempt.

What Schools Can Do

All schools and communities need to address the seriousness of adolescent suicide. Because adolescents who are threatened, bullied, or intimidated at school are more likely to think about or attempt suicide, schools should work to foster an environment in which all students feel safe, accepted, and supported, and where all have the opportunity for social recognition and for responsible involvement in school activities. (See also Chapter 13.)

Across Massachusetts, the percentage of health classes that deal with suicide prevention has increased sharply in recent years. Unfortunately, it is also a topic on which the majority of health teachers feel inadequately trained. Effective and carefully evaluated approaches to teaching about mental health, emotional well-being, and suicide prevention need to be developed and incorporated into educator preparation and professional development programs.

Researchers have begun to identify successful school-based approaches to youth suicide prevention. Schools can address the problem of youth suicide directly using effective prevention programs that help students learn to recognize and manage the feelings of stress and depression that may lead to suicidal thinking and behavior. See the Screening Tools section later in this chapter for Signs of Suicide (SOS).

The National Strategy for Suicide Prevention includes an objective to increase the proportion of school districts and private school associations with evidence-based programs designed to address serious childhood distress and prevent suicide. A registry of fact sheets for programs determined to be evidence-based, created by the American Foundation for Suicide Prevention (AFSP), is available from the Suicide Prevention Resource Center at http://www.sprc.org/whatweoffer/ebp.asp. Additional information is available through the National Registry of Evidence-Based Programs and Practices (NREPP), under the direction of the Science to Service Office, Substance Abuse and Mental Health Services Administration at http://www.nationalregistry.samhsa.gov.

Because suicidal adolescents are not likely to seek help on their own, it is also important that school staff be trained to recognize early signs of depression and serious emotional disturbances among young people (particularly among high-risk subgroups such as sexual-minority youth and

students who have been victims of violence) and be able to direct at-risk students to appropriate mental health services. DPH's Suicide Prevention Program maintains a Speaker's Bureau of certified instructors trained in the nationally recognized suicide prevention gatekeeper's training called QPR. This model, used in many schools across the country, especially for school personnel training, teaches the skills necessary to (Q)uestion whether someone is feeling suicidal, (P)ersuade someone to get help, and (R)efer the person appropriately. Schools may request a QPR training by contacting the DPH Suicide Prevention Coordinator at 617-624-5476.

No individual teacher, school nurse, or other school professional should feel responsible for, or decide alone how to proceed with, a potentially suicidal student. School professionals should collaborate to create policies and protocols that spell out how to respond to a student's request for help, as well as how to react if other warning signs are noticed. Every school system and every school should also have a crisis protocol, a crisis team, and community resources available to deal with suicide attempts and other crisis situations. (See Chapter 2 for guidelines on the development of collaborative interdisciplinary teams to deal with such issues.) In addition, schools should have policies and protocols in place for assisting students who have survived a suicide attempt to reenter school. An excellent example is the document "Guidelines for When a Student Returns to School Following Absence for Suicidal Behavior," which may be found in the manual *Youth Suicide Prevention, Intervention & Postvention Guidelines: A Resource for School Personnel.* The manual, published by the Maine Youth Suicide Prevention Program, is available at 800-499-0027 or http://www.state.me.us/suicide/sinfores.htm.

Anxiety Disorders

Anxiety disorders as a group, including separation anxiety disorder, generalized anxiety disorder, social phobia, and obsessive-compulsive disorder, are the most prevalent mental disorders among children and adolescents, with an estimated combined prevalence of 13% for those aged 9–17.

Researchers suggest watching for signs of anxiety disorders when children are between the ages of 6 and 8. During this time, children generally grow less afraid of the dark and imaginary creatures and become more anxious about school performance and social relationships. An excessive amount of anxiety in children this age may be a warning sign for the development of anxiety disorders later in life (U.S. Department of Health and Human Services, 1999).

Children and adolescents with **separation anxiety disorder** may cling to their parents, have trouble falling asleep alone, and have so much fear about and difficulty in leaving their parents or home that they have trouble attending school or camp or staying at a friend's home. Symptoms may include dizziness, nausea, or palpitations. The causes of separation anxiety disorder are not known, nor are the precise roles of genetic and environmental factors. It sometimes occurs after a death or illness in the family, a move, or a traumatic event. The Surgeon General's 1999 Report cited above cautions that the disorder may be overdiagnosed in those who live in dangerous neighborhoods and have reasonable fears of leaving their homes. The remission rate for this disorder is high, with severity waxing and waning.

Children and adolescents with **generalized anxiety disorder** worry excessively about many things, including school performance, being on time, and what others think of them. They tend to be perfectionists and unsure of themselves. Children and adolescents with this disorder may complain to the school nurse about stomachaches, headaches, general malaise, or other discomforts that do not appear to have any physical cause.

Children and adolescents with **social phobia** have a persistent fear of being embarrassed in social situations, having to perform publicly, or eating or drinking in public. The anxiety may include

physical symptoms such as palpitations, tremors, sweating, diarrhea, blushing, or even a full-blown panic attack. Younger children may cry, have tantrums, or freeze. This anxiety may keep the child from attending school. (See “School Avoidance/Refusal” section below.)

There is relatively little research on the efficacy of psychotherapy on separation anxiety disorder, generalized anxiety disorder, or social phobia. However, contingency management, which attempts to alter behavior by shaping, positive reinforcement, and extinction, is a well-established intervention. Other techniques such as desensitization, which helps people “unlearn” fears, and cognitive-behavior therapy (CBT), which helps people recognize anxious feelings, clarify how their understanding of the situation is being distorted, and develop and then evaluate a coping plan are proving promising. Medication with selective serotonin reuptake inhibitors (SSRIs) may also prove effective.

Obsessive-compulsive disorder (OCD) is characterized by recurrent, time-consuming obsessive or compulsive behaviors, such as hand-washing, counting or arranging and rearranging objects, as well as repetitive intrusive images, thoughts, or impulses. About 2 in every 100 adolescents experience obsessive-compulsive disorder (U.S. Department of Health and Human Services, 1999). There is a strong genetic susceptibility to this disorder, and some children are thought to develop it after a certain type of streptococcal infection. SSRIs appear effective in moderating the symptoms. There is no conclusive evidence about the effectiveness of cognitive-behavior therapy (CBT) or other psychotherapies on obsessive-compulsive disorder.

School Avoidance/Refusal

Approximately 2% of school-age children exhibit a pattern of avoiding or refusing to attend school, which is distinct from truancy. In general, these children stay in close contact with their parents or caregivers and are frequently (although not always) anxious and fearful. They may become very upset or ill when forced to go to school (Paige, 1996).

Such behavior is sometimes characterized as “school phobia,” although that term is somewhat misleading, in that school avoidance or refusal is not usually considered to be a true phobia. Although some children fear school-related activities (bus ride, reading aloud in class, changing for physical education), some are anxious about home issues or about being separated from a caregiver (especially in the wake of a recent trauma such as a death, divorce, financial crisis, or move). School avoidance/refusal may also develop as a result of struggles in school with academic or social problems, teasing or bullying, the need to traverse unsafe neighborhoods, long stretches of absence due to illness or hospitalization, or stress about school transitions (elementary to middle school or middle school to high school).

Treatment depends upon the causes, which can be difficult to determine. Several treatment plans may need to be attempted. Teaching the child relaxation techniques, better coping skills, or better social skills, as well as using a contract or getting help with parenting or family issues are all examples of possible treatments.

Parents and the school need to work together to identify what is causing or maintaining this behavior and develop a comprehensive plan of intervention. Immediate intervention is key; the longer the behavior occurs, the harder it is to treat. If allowed to persist, school avoidance/refusal can result in academic deterioration, poor peer relationships, school or legal conflicts, work or college avoidance, panic attacks, agoraphobia, and adult psychological or psychiatric disorders.

Disruptive Disorders

This group of disorders, which includes oppositional defiant disorder and conduct disorder, describes a collection of behaviors rather than a coherent pattern of mental dysfunction. These serious disorders are often also found in children with ADHD, which although categorized in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (*DSM-IV) as a disruptive disorder, is much less serious and is described separately above. Children with these disorders usually show signs of them by age 4 or 5.

A child with **oppositional defiant disorder** (ODD) displays a persistent or consistent pattern of defiance, disobedience, and hostility toward authority figures. Problem behaviors include persistent fighting and arguing, short temper, and being deliberately annoying or spiteful toward others. Stubbornness and testing of limits beyond what is considered age-appropriate are common. Before puberty, ODD is diagnosed more frequently in boys, but after puberty, it occurs at equal rates in girls and boys. Marital discord, a succession of different caregivers, and unsupervised, inconsistent childrearing are thought to contribute to the condition. ODD is sometimes a precursor to conduct disorder.

Conduct disorder is characterized by aggressive behavior such as fighting, bullying, physical assault, sexual coercion, and cruelty to animals or people. Vandalism, truancy, substance abuse, poor school performance, expulsion from school, and lawbreaking are common, as are depression and suicide. Social risk factors include separation from parents, family neglect or abuse, and parental discord. Children with neurological damage, ADHD, and learning disorders are most at risk. A thorough medical assessment is required to rule out medical disorders that may be contributing to or causing the disruptive behavior.

Certain psychosocial interventions can effectively reduce antisocial behavior. These focus on training parents to reward desirable behavior and to ignore or punish problem behaviors, an approach that can be adopted by teachers as well. The earlier in a child's life such interventions are offered, the more likely they are to succeed. For their part, schools can support children with these disorders by providing help in social interactions and by offering academic support to decrease the failure rate.

No medications have proved consistently effective in treating serious disruptive behavior. While some drugs have proved effective in reducing aggressive behavior, there are side effects connected with each. Medications that are used to control a student's behavior in school may in some cases be considered "chemical restraints," which must be used in compliance with state regulations on physical restraints in schools (603 CMR 46).

What Schools Can Do

Disruptive behavioral disorders often lead to immediate difficulty for the child and others, as well as poor outcomes in adulthood. School personnel (e.g., nurses, educators, administrators, counselors) who may observe such a disorder in the classroom or on school grounds and may have to defuse a situation should be educated about these disorders, their symptoms, and the process for referring such students to specialized care. Referral for a special education evaluation is one intervention school personnel can initiate. Teachers, parents, school nurses, and mental health professionals should work together to establish a plan to manage inappropriate behavior in the classroom and school building. Because these disorders can be of serious consequence to both the student and others, they require immediate attention.

Eating Disorders

Adolescents are intensely preoccupied with physical appearance. In a culture that idealizes extreme thinness, adolescence is particularly fertile ground for development of eating disorders. **Anorexia,** characterized by a persistent unwillingness to eat, an intense fear of becoming fat, a distorted body image, and extreme weight loss, and **bulimia,** characterized by episodic binge eating followed by purging behaviors such as vomiting, laxatives, dieting, or fasting, can result in serious physical damage and even death. Although the majority of individuals with eating disorders are adolescent females, adolescent males and people of other ages are also affected. The incidence of anorexia in children as young as 8 has been steadily increasing. (See also Chapter 9 for a discussion of the impact of eating disorders on nutritional health.)

Adolescents who have a strong sense of not being in control of their lives are more likely to develop eating disorders. Low self-esteem, frustration, and intolerance are commonly found in eating-disordered children and teens, as are an impaired ability to recognize and directly express feelings (especially anger), depressive symptoms, irritability, and a deep sense of shame or guilt. Both genetic and environmental factors are thought to contribute to the development of eating disorders.

One of 2 responses can be expected from a teenager approached about an apparent eating disorder: straightforward denial of difficulties or a refusal to participate in rehabilitation. These responses reflect an overwhelming fear of letting go of the behaviors that have provided them with a powerful defense against deep-seated feelings of weakness, depression, shame, and helplessness.

What Schools Can Do

- School policies and protocols should include prevention education, a method of notification of parents/guardians of possible eating disorders, and a referral and follow-up process.
- The comprehensive health education curriculum should include learning and discussion about societal attitudes about weight and appearance.
- Annual assessments of height/weight/body mass index (BMI) may reveal students with potential eating disorders, who should be referred for further care.
- School staff who observe a student with extreme weight loss should engage the assistance of the school nurse to intervene, notify families, and initiate referrals, in compliance with school policies and protocols.
- School nurses, mental health professionals, primary care providers, and parents should collaborate closely to develop and implement a plan of care that incorporates physical and mental health components and is monitored for consistency.

SCREENING TOOLS

Schools can use a number of mental health screening tools to identify symptoms that may warrant further investigation with a trained clinician. As with treatment services, any screening must be provided with full attention to the confidentiality and privacy of children and families. Some recommended screening tools are described below.

The **Pediatric Symptom Checklist** is a psychosocial screen designed to facilitate the recognition of cognitive, emotional, and behavioral problems so that appropriate interventions can be initiated as early as possible. There are 2 versions: the PSC, which is completed by parents/guardians, and the youth self report or Y–PSC, administered to children age 11 and over. A positive score on the

PSC or Y–PSC suggests the need for further evaluation by a qualified health or mental health professional. Both false positives and false negatives occur, and only an experienced health professional should interpret a positive PSC or Y–PSC score as anything other than a suggestion that further evaluation may be helpful. Both versions of the Pediatric Symptom Checklist are available for free download from an informational website maintained by the developers (http://psc.partners.org), as well as from the website of the Bright Futures Project at Georgetown University (http://www.brightfutures.org/mentalhealth/pdf/professionals/ped_sympton_chklst.pdf).

The **Center for Epidemiological Studies Depression Scale for Children (CES–DC)** is a 20-item self-report depression inventory designed for use with children and adolescents. Possible scores range from 0 to 60, with higher scores indicating increasing levels of depression. The developers of the CES–DC have used the cutoff score of 15 as being suggestive of depressive symptoms in children. Additional information and the tool itself may be obtained from the Bright Futures website (http://www.brightfutures.org/mentalhealth/pdf/professionals/bridges/ces_dc.pdf).

Signs of Suicide (SOS) is a comprehensive training and screening program for high school students, available through the nonprofit agency Screening for Mental Health, Inc. This inexpensive suicide prevention program has been independently evaluated (Aseltine & DeMartino, 2004) and found to reduce suicidal behavior when both the training and screening components are applied. The main teaching tool of the SOS program is a video that teaches students how to identify symptoms of depression and suicidality in themselves or their friends and encourages help-seeking. The program's primary objectives are to educate teens that depression is a treatable illness and to equip them to respond to a potential suicide in a friend or family member using the SOS technique. SOS is an action-oriented approach instructing students how to ACT (**A**cknowledge, **C**are, and **T**ell) in the face of this mental health emergency. Additional information may be obtained from Screening for Mental Health, Inc. at 789-239-0071 or http://www.mentalhealthscreening.org/highschool.

Columbia University's TeenScreen® Program, a national mental health and suicide risk screening program for youth, has been designated a model screening program for youth by the President's New Freedom Commission on Mental Health. The TeenScreen program provides training, technical assistance, and consultation to middle schools, high schools, and other community-based, youth-serving organizations in the use of its tool, with the goal of developing locally operated and sustained screening programs for youth. The TeenScreen® tool is a computer-based questionnaire that identifies and refers for treatment those who are at risk for suicide or suffer from an untreated mental illness. One follow-up study found that screening in high school identified more than 60% of students who, 4 to 6 years later, continued to have long-term, recurrent problems with depression and suicidal attempts. For additional information, see http://www.teenscreen.org.

Information on additional mental health screening tools is available at http://www.schoolpsychiatry.org, a website operated jointly by the School Psychiatry Program and the Mood & Anxiety Disorders Institute Resource Center within the Department of Psychiatry at Massachusetts General Hospital.

SUMMARY

Promoting mental health has become one of the major challenges schools face today. Already the leading provider of mental health services for children and adolescents, schools are now being asked to widen their focus and place additional emphasis on preventive activities. These activities promote emotional and behavioral wellness and reduce barriers to learning for the whole student community. Through such efforts, as well as early identification and intervention for high-risk students, it is hoped that serious problems and referrals to specialized services may be reduced. In addition, schools are being asked to play a key role in the construction of an active continuum of care, built on school-based intervention and support teams and reinforced by partnerships with families, community mental health resources, local social service providers, and others.

RESOURCES: INFORMATION ABOUT EVIDENCE-BASED CURRICULA AND INTERVENTIONS

American Psychological Association
Society for Clinical Child and Adolescent Psychology
Website: http://www.effectivechildtherapy.com

Publication: *Committee on Evidence-Based Practice List* includes reviews of interventions for depression, conduct/oppositional problems, ADHD, and anxiety disorders.

Collaborative for Academic, Social and Emotional Learning (CASEL)
Department of Psychology (M/C 285)
University of Illinois at Chicago
1007 W. Harrison Street
Chicago, IL 60607-7137
Phone: 312-413-1008
Fax: 312-355-4480
E-mail: CASEL@uic.edu
Website: http://www.casel.org

Publication: *Safe and Sound: An Education Leader's Guide to Evidence-Based Social and Emotional Learning (SEL) Programs* (2002), based on a 3-year study funded by the Institute of Education Sciences (IES) and the Office of Safe and Drug-Free Schools (OSDFS) in the U.S. Department of Education, reviews 80 multiyear, sequenced SEL programs designed for use in general education classrooms. *Safe and Sound* also offers guidance to educational leaders on how to integrate normally isolated or fragmented efforts with other school activities and academic instruction by providing a framework for "putting the pieces together." The guide and companion documents may be downloaded free from the website, where hard copy versions may also be ordered.

National Registry of Evidence-Based Programs and Practices (NREPP)
United States Department of Health and Human Services
Substance Abuse and Mental Health Services Administration (SAMHSA)
Website: http://www.hrepp.samhsa.gov
Historically NREPP, a nationally recognized system overseen by SAMHSA, an agency of the U.S. Department of Health and Human Services (HHS), was designed to support informed decision-making and to disseminate timely and reliable information about interventions to prevent substance abuse. NREPP has recently broadened its scope, creating a new resource for the latest information on the scientific basis for and practicality of specific programs and interventions designed to prevent and/or treat mental and substance use disorders. The new protocols and procedures will help reduce the significant lag-time between the generation of new scientific knowledge and its application by community-based prevention and treatment programs and providers.

Prevention Research Center
Pennsylvania State University
S109 Henderson Building
University Park, PA 16802
Phone: 814-865-2618
Fax: 814-865-2530
E-mail: prevention@psu.edu
Website: http://www.prevention.psu.edu

Publication: *Preventing Mental Disorders in School-Aged Children*: *A Review of the Effectiveness of Prevention Programs* (2001) is a report of a review conducted for the U.S. Department of Health and Human Services' Center for Mental Health Services on the effectiveness of prevention programs for reducing mental health problems in school-age children. Several programs identified were found to significantly reduce

aggression, depression, and anxiety among children, as well as improve behavior and problem-solving skills. The report is available at http://www.prevention.psu.edu/publications.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS

Adoptive Families Together (AFT)
Massachusetts Society for the Prevention of Cruelty to Children (MSPCC)
99 Summer Street
Boston, MA 02110
Phone: 617-587-1500
Fax: 617-587-1582
E-mail: web@adoptivefamilies.org
Website: http://www.mspcc.org/index.cfm?fuseaction=Page.viewPage&pageId=330
Adoptive Families Together is a supportive network of adoptive parents who combine experiences and information to strengthen families and adoptions. AFT families have adopted children domestically and internationally, infants, older children, kin and children with special needs. The network hosts monthly facilitated parent groups, workshops for parents, professionals, and social work students, and a moderated online group that provides parents with a 24-hour support forum. AFT also publishes a newsletter, books and pamphlets, and a selection of recommended reading.

American Foundation for Suicide Prevention — New England Chapter
56 Broad Street
Boston, MA 02109
Phone: 800-979-AFSP or 617-439-0940
Fax: 617-439-0338
Website: http://www.afsp.org/
AFSP is a national not-for-profit organization that funds research, develops prevention initiatives, and offers educational programs and conferences for survivors, mental health professionals, physicians, and the public.

Attention Deficit Information Network (AD-IN)
58 Prince Street
Needham, MA 02492
Phone: 781-455-9895
Fax: 781-449-1332
E-mail: adin@gis.net
Website: http://www.addinfonetwork.org
The Attention Deficit Information Network is a nonprofit volunteer organization that offers support and information to families of children with Attention Deficit Disorder (ADD), adults with ADD, and professionals through a national network of AD-IN chapters. AD-IN is a community resource for information on training programs and speakers for those who work with individuals with ADD. The organization also presents conferences and workshops for parents and professionals on current issues, research, and treatments for ADD. Contact information for the network's many AD-IN chapters in Massachusetts may be found at: http://www.addinfonetwork.org/chapters/index.html.

Boston Bar Association (BBA)
Phone: 617-742-0615
Fax: 617-523-0127
Website: http://www.bostonbar.org

Publication: *The Parents' How-To Guide to Children's Mental Health Services in Massachusetts,* created by the BBA's Children's Mental Health Task Force with support from Children's Hospital Boston, introduces parents to the mental health services available for children in the state, with information about how to obtain and pay for these services as well as advocacy tips. It reflects the input of families and their advocates who have been through the Massachusetts mental health system, as well as government agencies, mental health

professionals, other providers, and payers who are part of the system. It is available at the BBA website or at 617-778-1946.

Center for Anxiety and Related Disorders at Boston University (CARD)
648 Beacon Street, Sixth Floor
Boston, MA 02215
Phone: 617-353-9610
Website: http://www.bu.edu/anxiety
CARD is an assessment and treatment center specializing in anxiety and related disorders. Its Child and Adolescent Fear and Anxiety Treatment Program offers clinical services to young people experiencing difficulty with fears, anxiety, or shyness. The program provides comprehensive evaluations and cognitive-behavioral treatment for children and adolescents between the ages of 7 and 17.

Centers for Medicare and Medicaid Services — Boston Regional Office
John F. Kennedy Federal Building, Room 2325
Boston, MA 02203-0003
Phone: 617-565-1188
Fax: 617-565-1339
Website: http://www.cms.hhs.gov/RegionalOffices/02_RO1.asp#TopOfPage
This office is the initial point of contact on any Medicare, Medicaid, or State Child Health Insurance Program (SCHIP) issue.

Center for Mental Health Services Research
Website: http://www.umassmed.edu/cmhsr/
(For contact information and description, see listing under National Agencies and Organizations below)

Child Witness to Violence Project (CWVP)
Department of Pediatrics
Boston Medical Center
91 East Concord Street, 5th Floor
Boston, MA 02118
Phone: 617-414-4244
Website: http://www.childwitnesstoviolence.org/
CWVP is a counseling, advocacy, and outreach project that focuses on the growing number of young children who are hidden victims of violence: children who are bystanders to community and domestic violence. The project counsels children and their families and implements both national and state-focused training for health care professionals, police, educators, and many other social service professionals who confront issues of children witnessing violence.

Disability Law Center (DLC)
Website: http://www.dlc-ma.org
DLC is a private, nonprofit organization responsible for providing protection and advocacy for the rights of Massachusetts residents with disabilities. DLC receives federal, state, and private funding but is not part of the state or federal government. It provides information, referral, technical assistance, and representation regarding legal rights and services for people with disabilities.

- **Main Office**
  11 Beacon Street, Suite 925
  Boston, MA 02108
  Phone: 800-872-9992 or 617-723-8455
  Fax: 617-723-9125
  TTY: 800-381-0577 or 617-227-9464

- **Western Massachusetts Office**
  32 Industrial Drive East
  Northampton, MA 01060

Phone: 800-222-5619 or 413-584-6337
Fax: 413-584-2976
TTY: 413-582-6919

The Good Grief Program
1 Boston Medical Center Place, Mat 5
Boston, MA 02118
Phone: 617-414-4005
Fax: 617-414-7915
Website: http://www.bmc.org/pediatrics/special/GoodGrief/overview.html
The Good Grief Program provides training, consultation, and crisis intervention in the area of children's bereavement. It trains adult professionals to: know what children and adolescents need in order to face loss; create an infrastructure of necessary support during a school-based crisis; and assist children as they accomplish the psychological tasks of understanding, grieving, commemorating, and moving forward with their lives after a loss.

Massachusetts Advocates for Children (MAC)
Trauma and Learning Policy Initiative (TLPI)
100 Boylston Street, Suite 200
Boston, MA 02116
Phone: 617-357-8431 or 617-357-8431 ext. 224 (hotline)
Fax: 617-357-8438
Website: http://www.massadvocates.org
MAC is an independent and effective voice for children who face significant barriers to equal educational and life opportunities. The Trauma and Learning Policy Initiative (TLPI), a partnership of MAC and Harvard Law School's Hale and Dorr Legal Services Center, works to ensure that children affected by family violence succeed in school. To reach this goal, TLPI advocates for laws and policies that create safe and supportive school environments sensitive to the needs of traumatized children. Like all MAC efforts, TLPI uses multiple strategies to achieve its goals, including outreach to parents and professionals, coalition building, policy analysis and report writing, case advocacy, and legislative and administrative advocacy.

Publication: *Helping Traumatized Children Learn* (2005) demonstrates how trauma from exposure to family and other forms of violence can help explain many educational difficulties teachers across the Commonwealth face every day. Such difficulties include the inability of children to focus, understand instructions, form meaningful relationships with peers and teachers, and control their behavior in appropriate ways. The report provides a schoolwide flexible framework and a public policy agenda for creating "trauma-sensitive schools" — environments where traumatized children and their classmates can focus, behave, and learn.

Massachusetts Association for Mental Health (MAMH)
130 Bowdoin Street, Suite 309
Boston, MA 02108
Phone: 617-742-7452
Fax: 617-742-1187
E-mail: infomamh@mamh.org
Website: http://www.mamh.org
MAMH provides education, advocacy, leadership, and information to agencies, individuals, and families on national, state, and local mental health issues.

Massachusetts Coalition for Suicide Prevention
E-mail: info@MassPreventsSuicide.org
Website: http://www.Masspreventssuicide.org

Massachusetts Department of Mental Health
Central Office

25 Staniford Street
Boston, MA 02114
Phone: 800-221-0053 or 617-626-8000
TTY: 617-727-9842
Website: http://www.mass.gov/dmh
Massachusetts DMH provides information on and access to mental health programs and services.

Area Offices:

- **Central Massachusetts Area**
  Worcester State Hospital
  305 Belmont Street
  Worcester, MA 01604
  Phone: 508-368-3838
  Fax: 508-363-1500
  TTY: 508-752-0127

- **Metro Boston Area**
  85 East Newton Street
  Boston, MA 02118
  Phone: 617-626-9200
  Fax: 617-626-9216
  Child/Adolescent TTY: 617-626-9252

- **Metro Suburban Area**
  Westborough State Hospital
  P.O. Box 288 — Lyman Street
  Westborough, MA 01581
  Phone: 508-616-3500
  Fax: 508-616-3599
  TTY: 508-616-3533

- **Northeast Massachusetts Area**
  P.O. Box 387
  Tewksbury, MA 01876-0387
  Phone: 978-863-5000
  Fax: 978-863-5091
  TTY: 978-640-1193

- **Southeastern Massachusetts Area**
  165 Quincy Street
  Brockton, MA 02302
  Phone: 508-897-2000
  Fax: 508-897-2024
  TTY: 508-897-2224

- **Western Massachusetts Area**
  P.O. Box 389
  Northampton, MA 01061-0389
  Phone: 413-587-6200
  Fax: 413-587-6205
  TTY: 413-586-6592

Massachusetts Department of Education
350 Main Street
Malden, MA 02148

- **Legal/Regulatory Information**
  Website: http://www.doe.mass.edu/lawsregs/stateregs.html

- **Licensing of Support Personnel**
  Website: http://www.doe.mass.edu/educators/e_license.html

- **Special Education Planning and Policy Development Office (SEPP)**
  E-mail: mailto:specialeducation@doe.mass.edu
  Website: http://www.doe.mass.edu/sped/
  SEPP develops special education policy and plans for statewide programs in related areas. The website provides recent administrative advisory information, information on guides to the IEP, and other technical assistance guides developed by the Department of Education. Publications may also be obtained in hard copy by calling 781-338-3375.

- **Youth Risk Behavior Survey**
  Website: http://www.doe.mass.edu/cnp/hprograms/yrbs/

Massachusetts Department of Public Health
250 Washington Street
Boston, MA 02108

- **Bureau of Substance Abuse Services**
  Phone: 617-624-5111
  Fax: 617-624-5185
  TDD: 617-536-5186
  E-mail: questions.bsas@state.ma.us
  Website: http://www.state.ma.us/dph/bsas/BSAS.htm

- **Coordinated School Health Program**
  Bureau of Family and Community Health
  Phone: 617-624-5537
  Fax: 617-624-6062
  TTY: 617-624-5992
  Website: http://www.mass.gov/dph/fch/schoolhealth/cshp.htm

- **School Health Services**
  Bureau of Family and Community Health
  Phone: 617-624-6060
  Fax: 617-624-6062
  TTY: 617-624-5992
  Website: http://www.mass.gov/dph/fch/schoolhealth/

- **Suicide Prevention Program**
  Injury Prevention and Control Program
  Massachusetts Department of Public Health
  250 Washington Street 4th Floor
  Boston, MA 02108-4619
  Phone: 617-624-5413
  Fax: 617-624-5075
  TTY: 617-624-5992
  Website: http://www.state.ma.us/dph/fch/injury/index.htm

Massachusetts Department of Social Services
24 Farnsworth Street
Boston, MA 02210
Phone: 617-748-2000

Child-at-Risk Hotline: 800-792-5200 (to report suspected neglect or abuse)
Fax: 617-261-7435
Website: http://www.mass.gov/dss
DSS is dedicated to the safety, permanency, and well-being of children who have been abused and neglected in family settings or by recognized caretakers.

Massachusetts Mental Health Services Programs for Youth (MA–MHSPY)
Website: http://www.mhspy.org/
The Massachusetts Mental Health Services Program for Youth (MA-MHSPY) is for children and teens in Cambridge, Somerville, Malden, and Everett who are having problems at home, at school, or in the community. MA-MHSPY offers coordinated, individualized, family-focused, and community-based care to these children and their families so that children can live at home, stay in school, grow, and learn. MA-MHSPY is a collaborative project of the state departments of medical assistance, social services, youth services (juvenile justice), mental health, and education, and Neighborhood Health Plan.

Massachusetts Society for the Prevention of Cruelty to Children (MSPCC)
99 Summer Street
Boston, MA 02110
Phone: 617-587-1500
Fax: 617-587-1582
Website: http://www.mspcc.org
MSPCC is one of the largest outpatient Medicaid mental health treatment providers in Massachusetts. MSPCC's Family Counseling Centers are licensed outpatient clinics that provide mental health services in families' homes, schools, and other community settings. MSPCC has demonstrated expertise in child psychiatry, medication evaluations, and working with children and families who have suffered trauma. MSPCC's Project Connect program is a family-centered program serving children and adolescents with severe emotional disturbance and their families.

MEDA (Mentor, Empower, Develop, Assist)
92 Pearl Street
Newton, MA 02458
Phone: 617-558-1881
MEDA is a nonprofit organization dedicated to the prevention and treatment of eating disorders and disordered eating. MEDA's mission is to prevent the continuing spread of eating disorders through educational awareness and early detection. MEDA serves as a support network and resource for clients, loved ones, clinicians, educators, and the general public.

Mental Health Legal Advisors Committee (MHLAC)
Phone: 617-338-2345
Website: http://www.mass.gov/mhlac/
MHLAC provides advocacy information for people with mental health issues in Massachusetts. Its legal staff provides legal referrals, information, and advice to individuals, lawyers, mental health professionals, and the general public. MHLAC reviews new developments in mental health, housing, family, and disability civil rights law through its legal journal, the *Advisor,* and publications such as the *Mental Health Law Guide* and the *Managed Care Packet*.

M-POWER
98 Magazine Street
Roxbury, MA 02119
Phone: 877-769-7693 (statewide) or 617-442-4111
Fax: 617-442-4005
E-mail: webmaster@m-power.org
Website: http://www.m-power.org
M-POWER is a consumer-run organization that advocates for political and social change within the mental health system, community, city, and state. It provides information about mental health and other support services.

National Alliance for the Mentally Ill (NAMI) of Massachusetts
400 West Cummings Park, Suite 6650
Woburn, MA 01801
Phone: 800-370-9085 (statewide) or 781-938-4048
Fax: 781-938-4069
E-mail: namimass@aol.com
Website: http://www.namimass.org
NAMI's primary functions are: (1) support, education, and advocacy for individuals with brain disorders and their families, (2), research and services, and (3) the education of all professionals, providers, and the general public.

National Center on Family Homelessness
181 Wells Avenue
Newton Centre, MA 02459
Website: http://www.familyhomelessness.org
(For complete contact information and description, see listing under National Agencies and Organizations below.)

National Empowerment Center
599 Canal Street
Lawrence, MA 01840
Website: http://www.power2u.org
(For complete contact information and description, see listing under National Agencies and Organizations below.)

Parent Professional Advocacy League (PAL)
59 Temple Place, Suite 664
Boston, MA 02111
Phone: 866-815-8122 or 617-542-7860
Fax: 617-542-7832
E-mail: info@ppal.net
Website: http://www.ppal.net
PAL is the statewide organization of the Federation of Families for Children's Mental Health. PAL provides support, education, and advocacy around issues related to children's mental health, working in partnership with families whose children and adolescents have emotional, behavioral, and neurological needs, and with professionals who develop policy and provide services to children and their families. PAL operates a separate toll-free telephone line, Parent Resource Network (PRN), available to professionals and parents to help them navigate the state system, including the special education system, and to deal with insurance around mental health issues.

The Samaritans of Greater Boston
654 Beacon Street, 6th Floor
Boston, MA 02215
24-hour Crisis Line: 877-870-HOPE or 617-247-0220
Teen Line: 800-252-8336

Schoolpsychiatry.org
E-mail: info@schoolpsychiatry.org
Website: http://www.schoolpsychiatry.org
Schoolpsychiatry.org is a joint project of the School Psychiatry Program and the Mood & Anxiety Disorders Institute (MADI) Resource Center, both of the Department of Psychiatry at Massachusetts General Hospital (MGH). Schoolpsychiatry.org is committed to enhancing the education and mental health of every student in every school.

Suicide Prevention Resource Center (SPRC)
Education Development Center, Inc.
55 Chapel Street
Newton, MA 02458-1060
(For complete contact information and description, see listing under National Agencies and Organizations below.)

The Wellness Community — Greater Boston
1039 Chestnut Street
Newton Upper Falls, MA 02464
Phone: 617-332-1919
Website: http://www.wellnesscommunity.org
The Wellness Community offers support programs for children who have a parent diagnosed with cancer or who have lost a parent to cancer. It also offers school consultation on how to create a supportive environment for children in these situations and an annual workshop for educators.

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS

About Our Kids
New York University Child Study Center
577 First Avenue
New York, NY 10016
Phone: 212-263-6622
E-mail: research@AboutOurKids.org
Website: http://www.aboutourkids.org
The New York University Child Study Center is dedicated to advancing the field of child mental health through evidence-based practice, science, and education. Its site provides scientifically-based child mental health and parenting information through practical and accessible articles, based on the latest research in child psychiatry, psychology, and development.

American Academy of Child & Adolescent Psychiatry (AACAP)
3615 Wisconsin Avenue NW
Washington, DC 20016-3007
Phone: 202-966-7300
Fax: 202-966-2891
Website: http://www.aacap.org
AACAP's website provides information on child and adolescent psychiatry and fact sheets for parents and caregivers.

American Academy of Experts in Traumatic Stress
368 Veterans Memorial Highway
Commack, NY 11725
Phone: 631-543-2217
Fax: 631-543-6977
E-mail: info@aaets.org
Website: http://www.aaets.org or http://www.schoolcrisisresponse.com

Publication: *A Practical Guide for Crisis Response in Our Schools* conveys critical information to assist schools in responding effectively to "everyday crises" as well as school-based disasters. It is a valuable resource for administrators, support personnel, and faculty. Ordering information and downloadable documents are available at the website.

American Association of Suicidology (AAS)
5221 Wisconsin Avenue NW
Washington, DC 20015
Phone: 202-237-2280
Fax: 202-237-2282
Website: http://www.suicidology.org
AAS is a nonprofit organization dedicated to the understanding and prevention of suicide. Its site is designed as a resource for anyone concerned about suicide.

American Foundation for Suicide Prevention (AFSP)
120 Wall Street, 13th Floor
New York, NY 10005
Phone: 888-333-AFSP or 212-363-3500
Fax: 212-363-6237
E-mail: inquiry@afsp.org
Website: http://www.afsp.org
(See description under Massachusetts Agencies and Organizations.)

American Psychological Association (APA)
750 First Street NE
Washington, DC 20002-4242
Phone: 800-374-2721 or 202-336-5500
TDD/TTY: 202-336-6123
Website: http://www.apa.org

American Society for Adolescent Psychiatry (ASAP)
P.O. Box 570218
Dallas, TX 75357-0218
Phone: 972-686-6166
Fax: 972-613-5532
E-mail: info@adolpsych.org
Website: http://www.adolpsych.org
Focusing on teen, adolescence, and young adult issues, ASAP acts both as a professional network for its members and a specialized community dedicated to education development and advocacy of adolescents and the adolescent psychiatric field.

Anxiety Disorders Association of America (ADAA)
8730 Georgia Avenue, Suite 600
Silver Spring, MD 20910
Phone: 240-485-1001
Fax: 240-485-1035
Website: http://www.adaa.org
A national, nonprofit membership organization that promotes the early diagnosis, treatment, and cure of anxiety disorders, ADAA provides educational information and resources on anxiety disorders and treatment providers.

Attention Deficit Information Network
(See listing under Massachusetts Agencies and Organizations.)

Bazelon Center for Mental Health Law
1101 15th Street NW, Suite 1212
Washington DC 20005
Phone: 202-467-5730
Fax: 202-223-0409
Website: http://www.bazelon.org

The Bazelon Center is the leading national legal advocate for adults and children with mental disabilities. Its mission is to protect these individuals' rights to exercise meaningful life choices and to enjoy the social, recreational, educational, economic, political, and cultural benefits of community life. The staff uses a coordinated approach of litigation, policy analysis, coalition-building, public information, and technical support for local advocates to end the segregation of children and adults with mental disabilities and assure them of opportunities to access needed services and supports.

Publication: *Suspending Disbelief: Moving Beyond Punishment to Promote Effective Interventions for Children with Mental or Emotional Disorders* is available on the Bazelon Center's website.

Bureau for At-Risk Youth
135 Dupont Street
P.O. Box 9120
Plainview, NY 11803-9120
Phone: 800-99-YOUTH
Fax: 800-262-1886
E-mail: info@at-risk.com
Website: http://www.at-risk.com/
The Bureau for At-Risk Youth is a supplier of guidance and prevention materials for K-12 schools, youth service, and juvenile justice organizations.

Center for Adolescent and Family Studies (CAFS)
Eigenmann Hall, 5th Floor, Room 509
1900 East 10th Street
Bloomington, IN 47408
Phone: 812-855-2355
Fax: 812-855-1847
E-mail: cafs@indiana.edu
Website: http://www.indiana.edu/~cafs/
CAFS is a research center at the School of Education at Indiana University.

Centers for Disease Control and Prevention
Mental Health Work Group
E-mail: ccdinfo@cdc.gov
Website: http://www.cdc.gov/mentalhealth/

Center for Effective Collaboration and Practice (CECP)
American Institutes for Research
1000 Thomas Jefferson Street NW, Suite 400
Washington, DC 20007
Phone: 888-457-1551 or 202-944-5400
E-mail: center@air.org
Website: http://cecp.air.org
Funded by the U.S. Department of Education's Office of Special Education Programs, CECP supports and promotes a reoriented national preparedness to foster the development and adjustment of children with or at risk of developing serious emotional disturbance. The Center is organized to identify promising programs and practice, promote the exchange of useful and useable information, and facilitate collaboration among stakeholders and across service system disciplines.

Center for Health and Health Care in Schools
Mental Health Services in Schools
2121 K Street NW, Suite 250
Washington, DC 20037
Phone: 202-466-3396
Fax: 202-466-3467
Website: http://www.healthinschools.org/mentalhealth.asp

The Center provides background information, resources, and tools useful in building school-based health programs, community and state information, financing issues, and links.

Center for Mental Health in Schools
UCLA School Mental Health Project
University of California at Los Angeles
Department of Psychology
P.O. Box 951563
Los Angeles, CA 90095-1563
Phone: 866-846-4843 or 310-825-3634
Fax: 310-206-8716
E-mail: smhp@ucla.edu
Website: http://www.smhp.psych.ucla.edu
One of two national centers funded in part by the Office of Adolescent Health, Maternal and Child Health Bureau, Health Resources and Services Administration, the Center aims to enhance access to resources for improving and advancing mental health in schools, the capacity of systems/personnel, and the role of schools in addressing mental health, psychosocial, and related health concerns. The site offers a wide range of resources and downloadable materials to assist with policy and program development, staff training, and family and community connections, as well as links to relevant online resources.

Center for Mental Health Services Research
Department of Psychiatry
55 Lake Avenue North
Worcester, MA 01655
Phone: 508-856-5498
Fax: 508-856-8700
E-mail: CMHSR@umassmed.edu
Website: http://www.umassmed.edu/cmhsr/
The Center conducts research on the nature, structure, effectiveness, and regulation of services for individuals with mental health conditions, developing and disseminating knowledge to improve the lives of these individuals, their families, and other community members.

Center for Research on Child Wellbeing
Wallace Hall
Princeton University
Princeton, NJ 08544
Phone: 609-258-5894
Fax: 609-258-5804
E-mail: crcw@opr.princeton.edu
Website: http://crcw.princeton.edu/

Center for School-Based Mental Health Programs
Department of Psychology
Miami University
Oxford, OH 45056
Phone: 513-529-2450
Fax: 513-529-2420
Website: http://www.units.muohio.edu/csbmhp/
An important goal of the Center is to build collaborative relationships with schools and community agencies to address the mental health and school success of children and adolescents through multifaceted programs. The intent is to promote the development and implementation of *effective* programs to enhance healthy psychological development of school-age students and reduce mental health barriers to learning.

Center for School Mental Health Analysis and Action (CSMHA)
(formerly the Center for School Mental Health Assistance)

University of Maryland Baltimore
Department of Psychiatry
737 West Lombard Street, 4th Floor
Baltimore, MD 21201
Phone: 410-706-0980 or 888-706-0980
Fax: 410-706-0984
E-mail: csmha@psych.umaryland.edu
Website: http://csmha.umaryland.edu
CSMHA strengthens school mental health policies and programs to improve learning and promote success for America's youth. It analyzes diverse sources of information, develops and disseminates policy briefs, and promotes successful and innovative mental health policies and programs in schools.

Center for Social and Emotional Education (CSEE)
1841 Broadway, Suite 713
New York, NY 10023
Phone: 212-707-8799
Fax: 212-957-6616
E-mail: sel@csee.net
Website: http://www.csee.net
CSEE works with school personnel and parents to accomplish two primary goals: (1) help children to develop the social-emotional skills, knowledge, and beliefs to make healthy decisions and thereby enhance their resiliency; and (2) develop coordinated systemic interventions that promote safe, caring, and responsive schools, homes, and communities.

Child & Adolescent Bipolar Foundation (CABF)
1000 Skokie Boulevard, Suite 425
Wilmette, IL 60091
Phone: 847-256-8525
Fax: 847-920-9498
Website: http://www.bpkids.org
CABF is a parent-led, not-for-profit, Web-based membership organization of families raising children diagnosed with, or at risk for, early-onset bipolar disorder.

Publications:

- *Educating the Child with Bipolar Disorder,* a brochure for educators
- *Pediatric Bipolar Disorder Fact Sheet*
- *The Storm in My Brain,* a booklet for children

Child Anxiety Network
E-mail: childanxietyinfo@childanxiety.net
Website: http://www.childanxiety.net
The Child Anxiety Network is an online resource designed to provide thorough, user-friendly information about child anxiety, including a free e-mail newsletter containing tips for parents, suggestions for helpful readings on child anxiety, and comments from noted professionals in the field. The creator of the Child Anxiety Network is director of the Child and Adolescent Fear and Anxiety Treatment Program at the Center for Anxiety and Related Disorders at Boston University.

Children and Adults with Attention-Deficit/Hyperactivity Disorders (CHADD)
8181 Professional Place, Suite 150
Landover, MD 20785
Phone: 301-306-7070 or 800-233-4050 (voicemail to request info packet)
Fax: 301-306-7090
E-mail: national@chadd.org
Website: http://www.chadd.org
CHADD is the nation's leading nonprofit organization serving individuals with AD/HD and their families. CHADD has over 16,000 members in 200 local chapters throughout the U.S. Chapters offer support for

individuals, parents, teachers, professionals, and others. Contact information for all local chapters is available online through the CHADD Chapter Locator.

Children's Psychological Health Center
2105 Divisadero Street
San Francisco, CA 94115
Phone: 415-292-7119
Fax: 415-479-2802
Website: http://www.cphc-sf.org
The Children's Psychological Health Center is dedicated to protecting and mending children's hearts and minds by creating and replicating effective models of early life treatment for children who have been emotionally disturbed, have developmental disorders, or have been stressed by traumatic events. It trains mental health professionals and educators and produces a guided activity workbook series that has proved measurably helpful to foster children and survivors of public health disasters.

Collaborative for Academic, Social and Emotional Learning (CASEL)
Department of Psychology (M/C 285)
University of Illinois at Chicago
1007 W. Harrison Street
Chicago, IL 60607-7137
Phone: 312-413-1008
Fax: 312-355-4480
E-mail: CASEL@uic.edu
Website: http://www.casel.org
Founded in 1994 by Daniel Goleman, author of *Emotional Intelligence*, and educator/philanthropist Eileen Rockefeller Growald, CASEL conducts scientific research and works to provide educators and practitioners of social and emotional learning (SEL) with the guidelines, tools, informational resources, and support they need to improve and expand their SEL programming.

Consumer Organization & Networking Technical Assistance Center (CONTAC)
P.O. Box 11000
Charleston, WV 25339
Phone: 888-825-TECH (8324) or 304-345-7312
Fax: 304-345-7303
E-mail: usacontac@contac.org
Website: http://www.contac.org
Funded by the Center for Mental Health Services, CONTAC is a resource center for mental health consumers/survivors and consumer-run organizations across the United States. Services and products include informational materials, onsite training and skill-building curricula, electronic and other communication capabilities, networking, and customized activities promoting self-help, recovery, and empowerment.

Council for Children with Behavioral Disorders (CCBD)
Two Ballston Plaza
1110 N. Glebe Road
Arlington, VA 22201
Phone: 888-CEC-SPED or 703-620-3660
Fax: 703-264-9494
Website: http://www.ccbd.net
CCBD is the official division of the Council for Exceptional Children (CEC) committed to promoting and facilitating the education and general welfare of children and youth with emotional or behavioral disorders. Members include educators, parents, mental health personnel, and a variety of other professionals. CCBD emphasizes research and professional growth as vehicles for better understanding behavioral disorders, providing professional support for persons involved with children and youth with behavioral disorders.

Disaster Mental Health Institute (DMHI)
University of South Dakota — SDU 114
414 East Clark Street
Vermillion, SD 57069-2390
Phone: 605-677-6575 or 800-522-9684
Fax: 605-677-6604
E-mail: dmhi@usd.edu
Website: http://www.usd.edu/dmhi/
The mission of DMHI is the promotion, development, and application of both practice and research in disaster mental health. Its website offers educational materials on coping with the aftermath of disaster and helping children and adolescents deal with grief.

Eating Disorder Referral and Information Center
Website: http://www.edreferral.com/
Dedicated to the prevention and treatment of eating disorders, the online Eating Disorder Referral and Information Center provides information and treatment resources for all forms of eating disorders.

Enpsychlopedia Web Directory
Website: http://enpsychlopedia.com/
Enpsychlopedia offers a Google-based search interface to Psych Central and a dozen other mental health and psychology websites. It allows for easy, targeted queries on specific health topics, such as narrowing a search to only symptoms or treatments.

Federation of Families for Children's Mental Health (FFCMH)
9605 Medical Center Drive, Suite 280
Rockville, MD 20850
Phone: 240-403-1901
Fax: 240-403-1909
Website: http://www.ffcmh.org
FFCMH is a national family-run organization dedicated exclusively to helping children with mental-health needs and their families achieve a better quality of life. (For the local chapter, see Parent Professional Advocacy League listing under Massachusetts Agencies and Organizations.)

GuidanceChannel.com
Website: http://www.guidancechannel.com
GuidanceChannel.com, a brand of Sunburst Visual Media, is an online portal that offers newsletters and an online magazine including articles, interviews, tips website reviews, and other content that addresses the social, emotional, and educational issues facing today's youth.

Indiana University Center for Adolescent Studies
Eigenmann Hall, 5th Floor, Room 509
1900 East 10th Street
Bloomington, IN 47408
Phone: 812-855-2355
Fax: 812-855-1847
Website: http://www.indiana.edu/~cafs/
The Center's mission is to advance the understanding of the psychological, biological, and social features of normal adolescence. The site also provides "Teacher Talk," with practical information and sample lesson plans to foster the emotional growth of students; sites for parents; and ADOL: Adolescent Directory Online, a guide to Web resources on adolescents.

Juvenile Bipolar Research Foundation (JBRF)
550 Ridgewood Road
Maplewood, NJ 07040
Phone: 866-333-JBRF

Fax: 973-275-0420
E-mail: info@jbrf.org
Website: http://www.jbrf.org
JBRF is dedicated to the support of research for the study of early-onset bipolar disorder. Its website offers FAQs, links, and suggested readings.

KidsHealth
Nemours Center for Children's Health Media
Nemours Foundation
Website: http://www.kidshealth.org
Created by the Nemours Center for Children's Health Media, KidsHealth is a website providing doctor-approved health information, including information on eating disorders and emotional problems and dealing with feelings. KidsHealth has separate areas for kids, teens, and parents, each with its own design, age-appropriate content, and tone. Content includes in-depth features, articles, animations, games, and resources, all original and all developed by experts in the health of children and teens.

National Association of School Psychologists (NASP)
4340 East West Highway, Suite 402
Bethesda, MD 20814
Phone: 301-657-0270
Websites: http://www.nasponline.org and http://www.naspecenter.org
NASP's website provides information on issues related to children's mental health, resources related to the organizing and funding of mental health programs in schools, and updates on relevant legislation.

- **National Emergency Assistance Team (NEAT)**
  Phone: 301-657-0270 (during business hours; for after-hours emergency numbers, see the website.)
  Website: http://www.nasponline.org/neat/
  NEAT, part of NASP's strategic commitment to help schools, families, and communities cope with crisis situations, comprises 9 nationally certified school psychologists who have had formal training in and direct crisis experience involving manmade and natural disasters. Team members provide services ranging from advice over the phone to joining a crisis management team at the scene when invited. In conjunction with other NASP members, the NEAT team has written or contributed to numerous materials designed to help school psychologists and other officials establish school crisis teams and design crisis management plans. Many resources are free and can be obtained by going to http://www.naspcenter.org.

National Child Traumatic Stress Network
National Child Traumatic Stress Initiative — Program Office
Center for Mental Health Services
Substance Abuse and Mental Health Services Administration
Department of Health and Human Services
5600 Fishers Lane
Parklawn Building, Room 17C-26
Rockville, MD 20857
Phone: 301-443-2940
Website: http://www.nctsnet.org

Other Network Centers:

- **NCCTS — University of California, Los Angeles**
  11150 W. Olympic Blvd., Suite 650
  Los Angeles, CA 90064
  Phone: 310-235-2633
  Fax: 310-235-2612

- **NCCTS — Duke University**
  905 W. Main Street, Suite 23-D
  Durham, NC 27701

Phone: 919-682-1552
Fax: 919-667-9578
NCTSN comprises 54 treatment centers across the U.S. and is funded by the Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services through a Congressional initiative, the Donald J. Cohen National Child Traumatic Stress Initiative. Its purpose is to improve the quality, effectiveness, provision, and availability of therapeutic services delivered to all children and adolescents experiencing traumatic events. NCTSN develops and disseminates effective, evidence-based treatments; collects data for systematic study; and educates professionals and the public about the effects of trauma on children.

National Center on Family Homelessness
181 Wells Avenue
Newton Centre, MA 02459
Phone: 617-964-3834 x10
Fax: 617-244-1758
Website: http://www.familyhomelessness.org
The National Center on Family Homelessness is the nation's definitive authority on family homelessness. Since 1988, it has been at the forefront of research and evaluation, program design, service delivery, systems integration, and advocacy to help homeless children and their families.

National Eating Disorders Association
603 Stewart Street, Suite 803
Seattle, WA 98101
Phone: 206-382-3587
E-mail: info@NationalEatingDisorders.org
Website: http://www.nationaleatingdisorders.org

National Empowerment Center
599 Canal Street
Lawrence, MA 01840
Phone: 800-769-3728
Fax: 978-681-6426
TDD: 800-TTY-POWER (7693)
E-mail: info4@power2u.org
Website: http://www.power2u.org
The National Empowerment Center, a technical assistance center run by mental health consumers/survivors, carries a message of recovery, empowerment, hope, and healing to people who have been diagnosed with mental illness. It provides information and referrals to consumer/survivor resources nationally, offers technical assistance to individuals and groups involved in consumer empowerment activities, distributes recovery-related publications, and sponsors education and training activities.

National Institute of Mental Health (NIMH)
National Institutes of Health, DHHS
6001 Executive Boulevard, Room 8184, MSC 9663
Bethesda, MD 20892-9663
Phone: 866-615-NIMH (6464) or 301-443-4513
Fax: 301-443-4279
TTY: 866-415-8051 or 301-443-8431
E-mail: nimhinfo@nih.gov
Website: http://www.nimh.nih.gov

National Mental Health Association
2001 N. Beauregard Street, 12th Floor
Alexandria, VA 22311

Phone: 703-684-7722 or 800-969-NMHA (6642)
TTY: 800-433-5959
Fax: 703-684-5968
Website: http://www.nmha.org
As part of its Children's Mental Health Matters initiative, the National Mental Health Association offers educational materials for children and their families on a variety of topics including anxiety disorders, ADHD, and mood disorders (bipolar disorder and childhood depression).

National Mental Health Information Center
Substance Abuse and Mental Health Services Administration (SAMHSA)
P.O. Box 42557
Washington, DC 20015
Phone: 800-789-2647
Fax: 240-747-5484
TDD: 240-747-5475
E-mail: info@mentalhealth.org
Website: http://www.mentalhealth.org/child/childhealth.asp
The National Mental Health Information Center provides information about children's and adolescents' mental health. Publications include a series of fact sheets on children's mental health disorders.

National Resource Center on AD/HD
Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD)
8181 Professional Place, Suite 150
Landover, MD 20785
Phone: 800-233-4050 (to speak directly with a health information specialist)
Website: http://www.help4adhd.org

National Suicide Prevention Lifeline
Phone: 800-273-TALK
The National Suicide Prevention Lifeline provides 24-hour access to trained telephone counselors, 7 days a week.

National Strategy for Suicide Prevention (NSSP)
Website: http://www.mentalhealth.org/suicideprevention/default.asp
As a collaborative effort of SAMHSA, CDC, NIH, HRSA, and HIS, NSSP represents the combined work of advocates, clinicians, researchers, and survivors around the nation. It offers a framework for action to prevent suicide and guides development of an array of services and programs. It is designed to be a catalyst for social change with the power to transform attitudes, policies, and services. *NSSP Goals and Objectives for Action* was published by the U.S. Department of Health and Human Services in May 2001, with leadership from the Surgeon General.

Obsessive-Compulsive Foundation, Inc. (OCF)
676 State Street
New Haven, CT 06511
Phone: 203-401-2070
Fax: 203-401-2076
E-mail: info@ocfoundation.org
Website: http://www.ocfoundation.org
OCF is an international not-for-profit organization composed of people with obsessive-compulsive disorder (OCD) and related disorders, their families, friends, professionals, and other concerned individuals.

Oregon Research Institute (ORI)
1715 Franklin Boulevard
Eugene, OR 97403
Phone: 541-484-2123
Fax: 541-484-1108

Website: http://www.ori.org
ORI is an independent behavioral sciences research center dedicated to understanding human behavior and improving the quality of human life through the prevention and treatment of health, education, and social problems. Funded by the National Institutes of Health and other sources, ORI conducts research and has developed programs related to teen depression, childhood behavioral problems, and adolescent substance use.

President's New Freedom Commission on Mental Health
Website: http://www.mentalhealthcommission.gov
The President's New Freedom Commission on Mental Health, active from April 2002 to April 2003, was the first comprehensive study of the nation's public and private mental health service delivery systems in nearly 25 years. Its mission was to study the United States mental health service delivery system, including both private-sector and public-sector providers, and advise the President on methods to improve the system so that adults with serious mental illness and children with serious emotional disturbances can live, work, learn, and participate fully in their communities. Questions about the contents of this website should be addressed to the Substance Abuse and Mental Health Services Administration's (SAMHSA) Office of Communications at 301-443-8956.

Research and Training Center for Children's Mental Health
MHC2328
Department of Child and Family Studies
Louis de la Parte Florida Mental Health Institute
University of South Florida
13301 Bruce B. Downs Boulevard
Tampa, FL 33612-3807
Phone: 813-974-4661
Fax: 813-974-6257
Website: http://rtckids.fmhi.usf.edu/
The Research and Training Center for Children's Mental Health works to improve services and outcomes for children with serious emotional/behavioral disabilities and their families. It conducts research, synthesizes and shares existing knowledge, provides training and consultation, and serves as a resource for other researchers, policy makers, public administrators, and organizations representing parents, consumers, advocates, and practitioners. The Center maintains Data Trends, an online information resource providing summaries of current research findings in the field of children's mental health.

School Psychiatry Program &
Mood and Anxiety Disorders Institute (MADI) Resource Center
Website: http://www.schoolpsychiatry.org
This website for parents, educators, and clinicians focuses on identifying, treating, and accommodating the mental health needs of school-age children and adolescents. It is a joint project of the School Psychiatry Program and the Mood & Anxiety Disorders Institute Resource Center within the Department of Psychiatry at Massachusetts General Hospital.

School Psychology Resources Online
Website: http://www.schoolpsychology.net
School Psychology Resources Online provides articles, books, and links on learning disabilities, ADHD, functional behavioral assessment, autism, adolescence, parenting, psychological assessment, special education, mental retardation, mental health, and more.

Screening for Mental Health, Inc.
One Washington Street, Suite 304
Wellesley Hills, MA 02481
Phone: 781-239-0071
Fax: 781-431-7447
E-mail: smhinfo@mentalhealthscreening.org
Website: http://www.mentalhealthscreening.org

SMH is the nonprofit organization that first introduced the concept of large-scale mental health screenings with its flagship program National Depression Screening Day in 1991. SMH programs now include both in-person and online programs for depression, bipolar disorder, generalized anxiety disorder, post-traumatic stress disorder, eating disorders, alcohol problems, and suicide prevention. SMH's SOS Signs of Suicide® Program is a nationally recognized, easily implemented, cost-effective program of suicide prevention for secondary school students.

Sidran Institute
200 E. Joppa Road, Suite 207
Towson, MD 21286
Phone: 410-825-8888
Fax: 410-337-0747
Website: http://www.sidran.org/index.html
Sidran Institute is a national nonprofit organization devoted to traumatic stress education and advocacy, including the early recognition and treatment of trauma-related stress in children.

Suicide Prevention Resource Center (SPRC)
Education Development Center, Inc.
55 Chapel Street
Newton, MA 02458-1060
Phone: 877-438-7772
Fax: 617-969-9186
TTY: 617-964-5448
E-mail: info@sprc.org
Website: http://www.sprc.org
SPRC supports suicide prevention with the prevention support, training, and informational materials to strengthen suicide prevention networks and advance the National Strategy for Suicide Prevention. Funded through a cooperative agreement between the Substance Abuse and Mental Health Services Administration (SAMHSA) and Education Development Center, Inc., SPRC works in collaboration with 10 partner organizations. Resources include an evidence-based practices directory, an online searchable library, training, prevention support, and conferences.

Teen Screen
Carmel Hill Center at Columbia University
Phone: 866-TeenScreen (866-833-6727)
E-mail: teenscreen@childpsych.columbia.edu
Website: http://www.teenscreen.org/
Columbia University's TeenScreen Program is an adolescent mental health and suicide-screening initiative active in 40 states that helps communities establish programs in schools, doctors' offices, juvenile justice facilities, and other youth organizations, and collaborates with legislators, administrators, and advocates to promote mental health screenings throughout the country.

RESOURCES: SOURCES OF MENTAL HEALTH BOOKS FOR CHILDREN

Magination Press, American Psychological Association (APA)
750 First Street NE
Washington, DC 20002-4242
Phone: 800-374-2721 or 202-336-5510
Fax: 202-336-5502
E-mail: magination@apa.org
Website: http://www.maginationpress.com
Magination Press publishes books for children aged 4–18 that are written by mental health professionals or those who work closely with them and with children. These books are designed to help children and adolescents understand their feelings, provide information about the topic or situation, and offer practical coping strategies. A comprehensive Note to Parents is usually included to help guide parents, therapists,

social workers, and teachers in using the book. Topics covered include adoption and foster care, attention deficit disorder and learning disabilities, depression, disability, divorce, death and dying, emotions, family matters, fears and anxieties, medical problems, natural disasters, psychotherapy, school-related matters, and self-esteem.

JIST Publishing
8902 Otis Avenue
Indianapolis, IN 46216
Phone: 800-648-5478
Fax: 800-547-8329
Website: http://www.jist.com
JIST's KIDSRIGHTS imprint publishes books, booklets, pamphlets, videos, and games designed for use with children and teens. Subject areas include domestic violence, child abuse, sexual abuse, sexual harassment, and violence and anger.

Waterfront Books
85 Crescent Road
Burlington, VT 05401
Phone: 800-639-6063
Website: http://www.waterfrontbooks.com/
Waterfront Books Network is a publishing and distribution company and an information center serving professionals and parents who are concerned with children at home, at school, and in the community. The company both publishes and locates materials for children and adults on topics such as loss and grieving, illness, drugs and alcohol, safety and sexuality, special needs, and a variety of personal and social issues.

REFERENCES

Adelman, H. & Taylor, L. (2006). *The current status of mental health in schools: A policy and practice analysis.* Los Angeles, CA: Center for Mental Health in Schools at UCLA.

Aggleton, P., Hurry, J. & Warwick, I. (2000). *Young people and mental health.* Hoboken, NJ: John Wiley & Sons.

Albano, A. M. & Kendall, P. C. (2002). Cognitive behavioral therapy for children and adolescents with anxiety disorders: clinical research advances. *International Review of Psychiatry, 14*(2), 129–134.

American Academy of Child & Adolescent Psychiatry. (2000). *The anxious child: Facts for families* (fact sheet no. 47). Washington, DC: Author. Retrieved in 2006 from http://www.aacap.org/publications/factsfam/.

American Academy of Child & Adolescent Psychiatry. (2002). *Gay and lesbian adolescents: Facts for families* (fact sheet no. 63). Washington, DC: Author. Retrieved in 2006 from http://www.aacap.org/publications/factsfam/.

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders (4th Edition), Text Revision (DSM-IV-TR).* Arlington, VA: American Psychiatric Publishing, Inc. Retrieved in 2006 from http://www.psychiatryonline.com/dsmLibrary.aspx.

Annenberg Public Policy Center (APPC) (2004) School mental health professionals identify adolescent mental conditions as more serious problems than violence and interpersonal conflict in high schools. Retrieved in 2006 from http://www.annenbergpublicpolicycenter.org/07_adolescent_risk/adolescent_risk.htm.

Aseltine, R. H. & DeMartino, R. (2004). An outcome evaluation of the SOS suicide prevention program. *American Journal of Public Health, 94*(3), 446–451.

Atkinson, M. & Hornby, G. (2002). *Mental health handbook for schools*. New York: RoutledgeFalmer.

Barkley, R. A., Fischer, M., Smallish, L. & Fletcher, K. (2003). Does the treatment of attention-deficit/hyperactivity disorder with stimulants contribute to drug use/abuse? A 13-year prospective study. *Pediatrics, 111*(1), 97–109.

Bar-On, R. & Parker, J. D. A. (2000). *The handbook of emotional intelligence.* San Francisco: Jossey-Bass.

Bassuk, E., et al. (1999). *Homeless children: America's new outcasts.* Newton, MA: The Better Homes Fund (now The National Center on Family Homelessness).

Battistich, V. & Hom, A. (1997). The relationship between students' sense of their school as a community and their problem behaviors. *American Journal of Public Health*, *87*(12), 1997–2001.

Beers, M. H., Porter, R. S., Jones, T. V., Kaplan, J. L. & Berkwits, M. (eds.) (2006). *The Merck Manual of Diagnosis and Therapy, 18th Ed.* Retrieved in 2006 from http://www.merck.com/mmpe/index.html.

Born, L., Shea, A. & Steiner, M. (2002). The roots of depression in adolescent girls: Is menarche the key? *Current Psychiatry Reports*, *4*(6), 449–460. PMID: 12441025.

Brenner, N. D., Martindale, J. & Weist, M. D. (2000). Mental health and social services: Results from the school health policies and programs study 2000. *Journal of School Health*, *7*(7), 305–312.

Carlson, B. E. (2000). Children exposed to intimate partner violence: Research findings and implications for intervention. *Trauma, Violence, and Abuse*, *1*(4), 321–340.

Center for Health and Health Care in Schools (2004). Psychotropic drugs and children: Use, trends and implications for Schools. Retrieved in 2006 from http://www.healthinschools.org/sh/psychotropic.pdf.

Center for Mental Health in Schools at UCLA. (2003). *Natural opportunities to promote social-emotional learning and mental health*. Los Angeles, CA: Author.

Center for Mental Health in Schools at UCLA. (2003). *School-based client consultation, referral, and management of care*. Los Angeles, CA: Author.

Center for Mental Health in Schools at UCLA. (2004). *Responding to a crisis at a school*. Los Angeles, CA: Author.

Center for Mental Health in Schools at UCLA (Rev. 2005). *Youngsters' mental health and psychosocial problems: What are the data?* Los Angeles, CA: Author.

Child Trends. (2001). Guide to effective programs for children and youth: Cognitive behavior therapy (multiple studies). Retrieved in 2006 from http://www.childtrends.org/Lifecourse/programs/CognitiveBehaviorTherapy.htm.

Cohen, J. (Ed.). (1999). *Educating minds and hearts: Social and emotional learning and the passage into adolescence*. New York: Teachers College Press.

Cohen, J. (Ed.). (2001). *Caring classrooms/intelligent school: The social emotional education of young children.* New York: Teachers College Press.

Cole, S. F., Greenwald O'Brien, J., Gadd, M. G., Ristuccia, J., Wallace, D. L. & Gregory, M. (2005). *Helping traumatized children learn: Supportive school environments for children traumatized by family violence.* Boston, MA: Massachusetts Advocates for Children.
Collaborative for Academic, Social, and Emotional Learning (CASEL). (2002). *Safe and sound: An education leader's guide to evidence-based social and emotional learning (SEL) programs.* Chicago, IL: University of Illinois.

Combs-Orme, C. G., Heflinger, T. & Simpkins, A. (2002). Comorbidity of mental health problems and chronic health conditions in children. *Journal of Emotional and Behavioral Disorders, 10*, 116–125.

Coyle, J. T., Pine, D. S., Charney, D. S., et al. (2003). Depression and bipolar support alliance consensus statement on the unmet needs in diagnosis and treatment of mood disorders in children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, *42*(12), 1494–1503.

Davis, M. (2001). *Transition supports to help adolescents in mental health services*. Alexandria, VA: National Association of State Mental Health Program Directors.

DeSocio, J. & Hootman, J. (2004). Children's mental health and school success. *Journal of School Nursing, 20*(4), 189–196.

Dewey Bergren, M. (2002). Child and adolescent mental health web resources. *Journal of School Nursing, 18*(4), 226–228.

Edleson, J. L. (1999). Children's witnessing of adult domestic violence. *Journal of Interpersonal Violence, 14*(8), 839–870.

Edleson, J. L. (1999). The overlap between child maltreatment and woman battering. *Violence Against Women*, *5*(2), 134–154.

Esposito, C. (1999). Learning in urban blight: School climate and its effect on school performance of urban, minority, low-income children. *School Psychology Review*, *28*(3), 365–378.

Evans, D. L., Foa, E. B., Gur, R., Hendin, H., O'Brien, C. P., Seligman, M. E. P. & Walsh, B. T. (Eds.). (2005). *Treating and preventing adolescent mental health disorders: What we know and what we don't know: A research agenda for improving the mental health of our youth.* New York: Oxford University Press.

Foster, S., Rollefson, M., Doksum, T., Noonan, D. & Robinson, G. (2005). *School mental health services in the United States, 2002–2003.* Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration. DHHS Pub. No. (SMA) 05-4068.

Frame, K., Kelly, L. & Bayley, E. (2003). Increasing perceptions of self-worth in preadolescents diagnosed with ADHD. *Journal of Nursing Scholarship*, 35(3), 225–229. PMID: 14562489.

Fremont, W. P. (2004). Childhood reactions to terrorism-induced trauma: A review of the past 10 years. *Journal of the American Academy of Child & Adolescent Psychiatry, 43*(4), 381–392.

Goodman, R. F. (2001). Children with a chronic illness: The interface of medicine and mental health. *Child Study Center Letter, 5*(4).

Gordon, N. S., Farberow, N. L. & Maida, C. A. (1999). *Children and disasters.* New York: Brunner-Routledge.

Greenberg, M. T., Domitrovich, C., and Bumbarger, B. (1999). Preventing mental disorder in school-aged children: A review of the effectiveness of prevention programs. Report submitted to the Center for Mental Health Services (SAMHSA), Prevention Research Center, Pennsylvania State University.

Gregory, K. E. & Vessey, J. A. (2004). Bibliotherapy: A strategy to help students with bullying. *Journal of School Nursing, 20*(3), 127–133.

Grillo, L., Meaney, D. & Rich, C. (2003). *In their own words…Reflections on parenting children with mental health issues: The effect on families*. Boston: Adoptive Families Together, Inc.

Hayward, C., Wilson, K., Lagle, K., Killen, J. & Taylor, C. B. (2004). Parent-reported predictors of adolescent panic attacks. *Journal of the American Academy of Child & Adolescent Psychiatry, 43*(5), 613–620.

Health Care for the Homeless Clinicians' Network. (2000). Protecting the mental health of homeless children and youth. *Healing Hands, 4*(1). Retrieved in 2006 from http://www.nhchc.org/Network/HealingHands/2000/hh.02_00.pdf.

Herrerias, C. T., Perrin, J. M. & Stein, M. T. (2001). The child with ADHD: Using the AAP Clinical Practice Guideline, American Academy of Pediatrics**.** *American Family Physician*, *63*(9), 1694–1700.

Hootman, J., Houck, G. M. & King, M. C. (2002). A program to educate school nurses about mental health interventions. *Journal of School Nursing, 18*(4), 191–195.

Hospice Net. (1991). Talking to children about death*.* (Online article compiled from keynote address by J. W. Worden, PhD at 1991 ADEC Annual Meeting.) Retrieved in 2006 from http://www.hospicenet.org/html/talking-pr.html.

Hughes, H. M., Graham-Bermann, S. A. & Gruber, G. (2001). Resilience in children exposed to domestic violence. In S. A. Graham-Bermann and J. L. Edleson (Eds.), *Domestic violence in the lives of children: The future of research, intervention, and social policy.* Washington, D.C.: American Psychological Association.

Hutchinson, C. (2004). Learning about the homeless. *Counseling Today Online.* Retrieved in 2005 from http://www.counseling.org/AM/PrinterTemplate.cfm?Section=JULY_2004&Template=/CM/HTMLDisplay.cfm &ContentID=1283&FuseFlag=1.

Isaacs, D. & Sewell, J. R. (2003). Children with chronic conditions. *Medical Journal of Australia*, *179*(5), 235–236.

Jamison, K. R. (Ed.). (1999). *Night falls fast: Understanding suicide*. New York: Knopf.

Jennings, J., Pearson, G. & Harris, M. (2000). Implementing and maintaining school-based mental health services in the large urban school district. *Journal of School Health*, *70*(5), 201–205.

Jensen, P. S., Hinshaw, S. P., Swanson, J. M., Greenhill, L. L, Conners, C. K., Eugene A .L., Abikoff, H. B., Elliot, G., Hechtman, L., Hoza, B., March, J. S., Newcorn, J. H., Severe, J. B., Vitiello, B., Wells, K. & Wigal, T. (2001). Findings from the NIMH multimodal treatment study of ADHD (MTA): Implications and applications for primary care providers. *Journal of Developmental & Behavioral Pediatrics, 22*(1), 60–73.

Jewett, J. & Peterson, K. (2002). *Stress and young children*. Champaign, IL: ERIC Clearinghouse on Elementary and Early Childhood Education, Children's Research Center. (ERIC Document Reproduction Service No. ED471911.)

Jick, H., Kaye, J. A. & Jick, S. S. (2004). Antidepressants and the risk of suicidal behaviors. *Journal of the American Medical Association*, *292*(3), 338–343.

Juvonen, J., Graham, S. & Schuster, M. A. (2003). Bullying among young adolescents: The strong, the weak, and the troubled. *Pediatrics*, *111*, 97–109.

Kaul Nastasi, B., Bernstein Moore, R. & Varjas, K. M. (2003). *School-based mental health services: Creating comprehensive and culturally specific programs.* Washington, DC: APA Books.

Kessler, R. (2000). *The soul of education: Helping students find connection, compassion, and character at school.* Alexandria, VA: Association for Supervision & Curriculum Development.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R. & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of *DSM-IV* disorders in the national comorbidity survey replication. *Archives of General Psychiatry, 62*(6), 593–602.

Kiered. (2000). The tribes process TLC: A preliminary evaluation of classroom implementation and impact on student achievement. *Education*, *120*, 586–592.

Kosciw, J. G. & Cullen, M. K. (2001). *The school-related experiences of our nation's lesbian, gay, bisexual, and transgender youth: The GLSEN 2001 National School Climate Survey*. New York: Gay Lesbian Straight Education Network.

Lane, K. L., Gresham, F. M. & O'Shaughnessy, T. E. (Eds.) (2002). *Interventions for children with or at risk for emotional and behavioral disorders*. Boston, MA: Allyn & Bacon.

Lane, K. L., Gresham, F. M. & O'Shaughnessy, T. E. (2002). Serving students with or at-risk for emotional and behavior disorders: Future challenges. *Education and Treatment of Children, 25*, 507–521.

Latner, J. D. & Stunkard, A. J. (2003). Getting worse: The stigmatization of obese children. *Obesity Research, 11*, 452–456.

Lavin, P. & Park, C. (1999). *Despair turned into rage: Understanding and helping abused, neglected, and abandoned youth.* Atlanta: Child Welfare League of America Press.

Leiker, T. & Level, E. (2004). Caring communities: Nurses taking action to address adolescent depression and suicide prevention. *Kansas Nurse, 79*(6), 4–6.

Leslie, L. K., Newman, T. B., Chesney, P. J. & Perrin, J. M. (2005). The Food and Drug Administration's deliberations on antidepressant use in pediatric patients. *Pediatrics,116*(1), 195–204.

Philadelphia Child Guidance Center & Maguire, J. (1993). *Your child's emotional health*. New York: Macmillan.

Marsenich, L. (2002). *Evidence-based practices in mental health services for foster youth.* Sacramento: California Institute for Mental Health. Retrieved in 2006 from http://www.cimh.org/downloads/Fostercaremanual.pdf.

Mason, W. A., Kosterman, R., Hawkins, J. D., et al. (2004). Predicting depression, social phobia, and violence in early adulthood from childhood behavior problems. *Journal of the American Academy of Child & Adolescent Psychiatry, 43*(3), 307–315.

Massachusetts Department of Education. (2004). *2003 Massachusetts youth risk behavior survey*. Malden, MA: Author.

McEntire, N. (2003). *Children and grief*. Champaign, IL: ERIC Clearinghouse on Elementary and Early Childhood Education, Children's Research Center. (ERIC Document Reproduction Service No. ED475393.)

Miller, J. (1999). *The childhood depression sourcebook.* New York: McGraw-Hill.

Moffett, A. *Grief and loss support for children*. Available online at http://www.directionservice.org/Grief_and_Loss.pdf. (Date unavailable.)

Muckenhoupt, M. (2002). *Mental health issues in schools: A guide for teachers, school administrators, and parents.* Newton, MA: Education Development Center, Inc.

National Institute of Mental Health. (2001). Helping children and adolescents cope with violence and disasters. Bethesda, MD: National Institute of Mental Health, National Institutes of Health, U.S. Department of Health and Human Services. NIH Publication No. 01-3518. Retrieved in 2006 from http://www.nimh.nih.gov/publicat/NIMHviolence.pdf.

National Mental Health Association. (2006). Children without homes. Fact sheet. Retrieved in 2006 from http://www1.nmha.org/homeless/childrenhomelessnessfacts.cfm.

Noam, G. G. & Hermann, C. A. (2002). Where education and mental health meet: Developmental prevention and early intervention in schools. *Development and Psychopathology, 14*(4), 861–875.

Novick, B., Kress, J. S. & Elias, M. J. (2002). *Building learning communities with character: How to integrate academic, social, and emotional learning*. Alexandria, VA: Association for Supervision and Curriculum Development.

Office of Applied Studies, Substance Abuse and Mental Health Services Administration (SAMHSA). (2005). Depression among adolescents. *The National Survey on Drug Use and Health Report*. Retrieved in 2006 from http://www.oas.samhsa.gov/2k5/youthDepression/youthDepression.htm.

Osborne, C. & McLanahan, S. (2004). *The effects of partnership instability on parenting and young children's health and behavior*. Princeton, NJ: Center for Research on Child Wellbeing, Princeton University.

Owens, R. E. (1998). *Queer kids: The challenges and promise for lesbian, gay, and bisexual youth*. Binghamton, NY: Haworth Press.

Paige, L. M. (1996). *School refusal/avoidance phobia: A handout for parents*. Bethesda, MD: National Association of School Psychologists.

Paternite, C. E. (2004). Involving educators in school-based mental health programs. In K. Robinson (Ed.), *Advances in school-based mental health: Best practices and program models*. Kingston, NJ: Civic Research Institute.

Pearce, M. J., Boergers, J. & Prinstein, M. J. (2002). Adolescent obesity, overt and relational peer victimization, and romantic relationships. *Obesity Research, 10*, 386–393.

President's New Freedom Commission on Mental Health. (2003). *Achieving the promise: Transforming mental health care in America.* Rockville, MD: Department of Health and Human Services (DHHS Pub. No. SMA-03-3832.)

Prevention Research Center. (2001). *Preventing mental disorders in school-aged children: A review of the effectiveness of prevention programs*. University Park, PA: Pennsylvania State University.

Raskauskas, J. & Stoltz, A. D. (2004). Identifying and intervening in relational aggression. *Journal of School Nursing, 20*(4), 209–215.

Remafedi, G. (1999). Sexual orientation and youth suicide. *Journal of the American Medical Association, 282*, 1291–1292.

Rhodes, J., Fredriksen, K. & Reddy, R. (2004). Sleepless in Chicago: Tracking the effects of sleep loss over the middle school years. *Child Development Journal*, *75*(1).

Riely, M. (2003). Facilitating children's grief. *Journal of School Nursing, 19*(4), 212–217.

Roberts, R. E., Attkisson, C. C. & Rosenblatt, A. (1998). Prevalence of psychopathology among children and adolescents. *American Journal of Psychiatry*, *155*(6), 715–725.

Rosenheck, R., et al. (1998). Special populations of homeless Americans. *Presentation to the National Symposium on Homelessness and Research*. Retrieved in 2006 from *http://aspe.hhs.gov/progsys/homeless/symposium/*.

Rowe, R., Maughan, B. & Goodman, R. (2004). Childhood psychiatric disorder and unintentional injury: Findings from a national cohort study. *Journal of Pediatric Psychology*, *29*(2), 119–130. PMID: 15096533.

Royal College of Psychiatrists. (2004). *Mental health and growing up, chronic physical illnesses: The effects on mental health*. Retrieved in 2006 from http://www.rcpsych.ac.uk/info/mhgu/newmhgu27.htm.

Rubin Stiffman, A. & Davis, L. E. (Eds.). (1990). *Ethnic issues in adolescent mental health.* Thousand Oaks, CA: Sage Publications.

Rusby, J. C., Forrester, K. K., Biglan, A. & Metzler, C. W. (2005). Relationships between peer harassment and adolescent problem behaviors. *Journal of Early Adolescence 25*(4), 453–477.

Ryan, C. & Futterman, D. (1997). Lesbian and gay youth: Care and counseling. *Adolescent Medicine State-of-the-Art Reviews*, *8*(2).

Sandberg, S. (Ed.). (2002). *Hyperactivity and attention disorders of childhood* (2nd ed.). Cambridge, UK: Cambridge University Press.

Savin-Williams, R. C. (1994). Verbal and physical abuse as stressors in the lives of lesbian, gay male, and bisexual youths: Associations with school problems, running away, substance abuse, prostitution, and suicide. *Journal of Consulting and Clinical Psychology, 62*, 261–269.

Stewart, A. J., Steiman, M., Cauce, A. M., et al. (2004). Victimization and posttraumatic stress disorder among homeless adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 43*(3), 325–331.

Stice, E., Ragan, J. & Randall, P. (2004). Prospective relations between social support and depression: Differential direction of effects for parent and peer support? *Journal of Abnormal Psychology*, *113*(1), 155–159.

Stiles, M. (2002). Witnessing domestic violence: The effect on children. *American Family Physician, 66*(11), 2052–2058.

Swanston, H., Williams, K. & Nunn, K. (2000). The psychological adjustment of children with chronic conditions. In R. Kosky, A. O'Hanlon, G. Martin & C. Davis (Eds.). *Clinical approaches to early intervention in child and adolescent mental health.* Adelaide: Australian Early Intervention Network for Mental Health in Young People.

Taras, H., Duncan, P., Luckenbill, D., Robinson, J., Wheeler, L. & Wooley, S. (2004). *Health, mental health and safety guidelines for schools*. Retrieved in 2006 from http://www.schoolhealth.org.

Thompson, M., O'Neill Grace, C. & Cohen, L. (2002). *Best friends, worst enemies: Understanding the social lives of children.* New York: Ballantine Books.

U.S. Department of Health and Human Services. (1999). *Mental health: A report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health. Retrieved in 2006 from http://www.surgeongeneral.gov/library/mentalhealth/home.html.

U.S. Department of Health and Human Services. (2001). *Mental health: Culture, race, and ethnicity. A report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health.

U.S. Department of Health and Human Services. (2003). *Child and adolescent mental health.* Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, National Mental Health Information Center, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health. Fact Sheet CA-0004. Retrieved in 2006 from http://mentalhealth.samhsa.gov/publications/allpubs/CA-0004/default.asp.

U.S. Public Health Service. (2000). *Report of the Surgeon General's conference on children's mental health: A national action agenda*. Washington, DC: Department of Health and Human Services.

Weist, M. D., Sarles, R. & Ghuman, H. S. (Eds.). (2002). *Providing mental health services to youth where they are: school and community based approaches.* New York: Brunner-Routledge.

Wessely, S. & Kerwin, R. (2004). Suicide risk and the SSRIs. *Journal of the American Medical Association, 292*(3), 379–381.

Wilens, T. E., Faraone, S. V., Biederman, J. & Gunawardene, S. (2003). Does stimulant therapy of attention-deficit/hyperactivity disorder beget later substance abuse? A meta-analytic review of the literature. *Pediatrics, 111*(1), 179–185.

Winter, E. (2000). School bereavement. *Educational Leadership, 57*(6), 80–85.

Ybarra, M. L., Leaf, P. J. & Diener-West, M. (2004). Sex differences in youth-reported depressive symptomatology and unwanted Internet sexual solicitation. *Journal of Medical Internet Research*, *6*(1), e5. PMID: 15111271.

Yeh, M., Hough, R. L., McCabe, K., Lau, A. & Garland, A. (2004). Parental beliefs about the causes of child problems: Exploring racial/ethnic patterns. *Journal of the American Academy of Child and Adolescent Psychiatry*, *43*(5), 605–612. PMID: 15100567.

Note: Articles with PMID number have been indexed by PubMed for MEDLINE.

EXHIBITS

Exhibit 11-1 Youth Suicide Fact Sheet

Exhibit 11-1

Youth Suicide Fact Sheet

Youth are particularly vulnerable to death by suicide and can potentially benefit significantly from an informed school community. In Massachusetts, in 2003, suicide was the third leading cause of death for young people ages 14 to 25.[1] According to the 2003 *Youth Risk Behavior Survey* administered by the Massachusetts Department of Education, 28% of the students reported feeling so sad or hopeless that they stopped doing some usual activities. Sixteen percent of all students in 2003 seriously considered suicide, while 8% made an actual attempt. Urban students are even more likely to make a suicide attempt serious enough to warrant medical attention.[2] Perhaps the most disturbing statistic nationwide is the sharp rise in the suicide rate of African American young men. From 1979 to 1997, the suicide rate among African American young men aged 15–19 rose 70%; the rate for 10–14 year olds increased by 533% in the same time period.[3] Latino youth have the highest rate of attempts and ideation of all ethnic groups.[4]

SCHOOL AND COMMUNITY GOALS

- require all school nurses, health teachers, counselors, and principals to receive training on youth suicide, and offer such training to teachers and staff;
- help students learn to recognize suicide warning signs in their peers, self-help skills, coping strategies, and how to seek help when needed;
- educate students about the treatment efficacy for mental health problems;
- educate parents about the seriousness of youth suicide and how to prevent it;
- administer the *Youth Risk Behavior Survey* to compare your school to the state norm;
- establish a policy to assist students to reintegrate when returning to school after a suicide attempt; and
- develop a plan to respond to a completed suicide by a student.

SUGGESTED ACTIVITIES

- organize a group of students to walk in a suicide prevention fundraiser;
- invite local mental health professionals to talk to classes about mental health and about the services they provide;
- post flyers of local crisis hotline numbers; and
- hold a Mental Health Career Fair and invite community service providers to exhibit.

RESOURCES: *Massachusetts Suicide Prevention Resource Guide*, http://www.mass.gov/dph/fch/violence/suicideprevguide.pdf; American Association of Suicidology, http://www.suicidology.org; Suicide Prevention Resource Center, http://www.sprc.org.

FOR MORE INFORMATION: Suicide Prevention Program, Injury Prevention and Control Program, Massachusetts Department of Public Health, 250 Washington Street, 4th Floor, Boston, MA 02108-4619, Phone: 617-624-5476, Fax: 617-624-5075, Website: http://www.state.ma.us/dph/fch/injury/index.htm.

---

[1] 2003 Injury Surveillance Program, Bureau of Health Statistics, Research and Evaluation, DPH.
[2] 2003 *Youth Risk Behavior Survey*, Massachusetts Department of Education, Malden, MA.
[3] "Suicide Among African American Men," *Suicide and Life-Threatening Behavior,* Vol. 31, Spring 2001.
[4] "Suicidal Behavior Among Latino Youth," *Suicide and Life-Threatening Behavior*, Vol. 31, Spring 2001.

Chapter 12

SEXUALITY AND REPRODUCTIVE HEALTH

Scope of the Issues

Policy Implications for Schools

Sexuality/Reproductive Health Education

Sexual Development

Recommendations for Physical Examinations

Sexual Decision Making

Pregnancy and STD Prevention

Adolescent Pregnancy

Other Sexuality Issues

Summary

Resources: Curricula and Program Information

Resources: Massachusetts Agencies and Organizations

Resources: National Agencies and Organizations

Resources: GLBT Youth

Resources: Online Information for Teens

Resources: Reading Material for Students

Resources: Teen Pregnancy and Parenting

Resources: Youth with Disabilities

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 12

SEXUALITY AND REPRODUCTIVE HEALTH

SCOPE OF THE ISSUES

Promoting responsible sexual behavior is included among the U.S. Surgeon General's Public Health Priorities and is also one of the *Healthy People 2010* Ten Leading Health Indicators for the Nation. In 2001, the Surgeon General issued *The Surgeon General's Call to Action to Promote Sexual Health and Responsible Sexual Behavior,* which warned that the U.S. was facing a significant public health challenge related to the sexual health of its citizens. Concerns mentioned included: sexually transmitted diseases (STDs, also referred to as sexually transmitted infections or STIs); infertility and cancer resulting from STDs; human immunodeficiency virus (HIV)/ acquired immunodeficiency syndrome (AIDS); sexual abuse, coercion, and prejudice; unintended pregnancy; and abortion (U.S. Department of Health and Human Services, 2001). For more information about the findings, see the Surgeon General's report at: http://www.surgeongeneral.gov/library/sexualhealth/call.pdf.

The findings of the Massachusetts 2003 Youth Risk Behavior Survey (YRBS) of 9th–12th graders published by the Massachusetts Department of Education (DOE) in 2004 offered evidence of both progress in the effort to reduce sexual risk behaviors and a considerable number of remaining challenges. Although the survey found fewer Massachusetts high school students engaging in sexual risk behaviors than in the past, it also documented a significant increase in the percentage of students who had been diagnosed with HIV or other STDs. Results also indicated that a significant number of students are already sexually experienced by the time they enter high school, and half are sexually active by the end of their senior year.

According to DOE, these findings suggest that age-appropriate sexuality education should start well before high school, addressing responsible decision making and strong communication and refusal skills before young people become sexually active. Also, comprehensive and experience-appropriate sexuality education should continue throughout high school, with the goal of encouraging the delay of sexual initiation among students who are not sexually active, providing a support system for those who have already experienced sexual intercourse but wish to refrain in the future (sometimes called "secondary abstinence"), and stressing the importance of condom use and contraception among sexually active youth.

In its 2004 report on this survey, DOE noted that the increase in reported HIV/STD diagnoses among youth suggests a need to provide them with information about STD testing and treatment resources, continuing education about STD and HIV prevention throughout the high school years, and encouragement to use condoms, even if other methods of contraception are used.

Pointing to the fact that this increase in HIV/STD diagnoses occurred despite decreases in reported sexual intercourse, as well as in the proportion of students who reported sexual contact but not sexual intercourse (14%), DOE concluded there is a likelihood that students are engaging

in other sexual behaviors that are placing them at risk of infection. Its recommendation: comprehensive sexuality education should include instruction about the health risks associated with all sexual behaviors and ways students can reduce or prevent their risk of disease infection.

Different patterns of sexual risk-taking among different groups were discernable from the survey results. One example is that reported rates of early initiation of sexual activity were significantly higher for students who were male, Hispanic, African American, and/or urban. Another is that gay, lesbian, bisexual, and transgender (GLBT) youth (called “sexual minority” youth in the Survey report) had significantly higher rates of sexual risk behaviors and may, as a consequence, be at particularly high risk of STDs and HIV infection. Based on this data, DOE suggests that attention be paid to targeting prevention efforts to the particular needs and concerns of these populations.

POLICY IMPLICATIONS FOR SCHOOLS

According to *The Surgeon General’s Call to Action to Promote Sexual Health and Responsible Sexual Behavior* (2001), schools inhibit risk-taking and encourage sexual and reproductive responsibility in a number of ways. These include providing structure, creating an environment that discourages risky behavior, increasing interactions with adults, influencing selection of friends and peer groups, increasing students’ belief in the future and their own competence, and building their communication and refusal skills. (U.S. Department of Health and Human Services, 2001).

In addition, schools have the resources necessary to supplement the information offered by family or clergy. *The Surgeon General’s Call to Action* emphasizes the importance of the school’s role, noting that “because parents vary widely in their own knowledge about sexuality, as well as their emotional capacity to explain essential sexual health issues to their children, schools also provide an opportunity for the kind of positive peer learning that can influence social norms.”

Involving Families and Communities in Sexuality/Reproductive Health Education

The school’s role in sexuality education and related health services has the potential to be a sensitive and controversial issue for communities, so, when planning a program, care must be taken to be thoughtful and respectful of the values of both families and the larger community. Parents and family members are children's earliest and most important teachers about sexuality. From birth, the child begins to learn about sexuality and sex roles from those around him or her. Basic values, beliefs, and sexual socialization are established within the home environment.

Given today’s complexity of social norms about sexuality, the majority of parents and guardians reports welcoming help in educating their children about sexuality and approves a broad-based approach. A 2004 survey on Sex Education in America — conducted by The Kaiser Family Foundation, National Public Radio, and the John F. Kennedy School of Government at Harvard — found that parents whose children have taken sex education generally like their school’s program (Kaiser Family Foundation et al., 2004). The vast majority (93%) said the program had been at least somewhat helpful to their child in dealing with sexual issues (42% “very helpful,” 51% “somewhat helpful”). Three out of four said they were at least somewhat confident that the program teaches attitudes and values similar to the ones they teach at home (26% “very confident,” 49% “somewhat confident”).

According to the report, most Americans appear to want a curriculum that includes not only reproductive facts but also nonjudgmental discussion of homosexuality, information about how to obtain and use condoms, and information about how to obtain testing for sexually transmitted diseases. The Kaiser/NPR/Kennedy School report, "Sex Education in America," is available online at http://www.kff.org/kaiserpolls/pomr012904oth.cfm.

Ongoing parental involvement, including curriculum planning and evaluation, is an important factor in the success of school sexuality education programs. Parents/guardians should be part of a multidisciplinary team or workgroup such as a School Health Advisory Committee convened for this purpose (see Chapters 2 and 3). In addition, M.G.L. c.71, s.32A specifies that districts implementing any curriculum that primarily involves human sexual education or human sexuality issues must notify parents/guardians in writing about the curriculum, make the curriculum available for review, and allow parents/guardians the option of exempting their children from any part of that curriculum.

The 2003 Massachusetts YRBS results found significantly lower percentages of recent sexual activity and consumption of drugs or alcohol prior to sexual activity among students who had spoken with a parent or guardian about prevention of pregnancy, STDs, and HIV. Schools can amplify the positive effects of their sexuality education efforts by enlisting the assistance of parents/guardians and equipping them with information. Some Massachusetts school health education programs have already developed programs for the parents of elementary and middle-school students to teach skills and impart information that will help them respond to the needs of their children and adolescents. The findings of the YRBS suggest that such programs would also be helpful at the high school level.

What Schools Can Do

Suggestions for involving parents and guardians include:

- establish informal discussion groups about issues in sexuality education for parents/guardians;
- provide parents with data (both local and national) about problems associated with adolescent sexual activity and about issues such as child sexual abuse;
- network with existing parent/guardian groups (e.g., PTA, Parents Without Partners, religious institutions, social and service clubs, foster parent or grandparent support groups) to conduct sexuality education workshops;
- include students and parents/guardians in the planning and evaluation of the school sexuality curriculum; and
- make educational resources (e.g., books, videos, pamphlets, fact sheets, websites) available to parents/guardians, thereby assisting them in their roles as their children's sexuality educators.

Schools should be persistent in their efforts to promote parent/guardian education and involvement. As with all programs offered by schools, thoughtful pre-planning and cultural sensitivity are required to ensure parental attendance and participation. The Massachusetts Department of Education website has a page that includes an Advisory Opinion on the Parental Notification Law, as well as a sample letter for parents about comprehensive health education curriculum, including sexuality education:
http://www.doe.mass.edu/lawsregs/advisory/c7132adv.html.

Protection of Pupil Rights Amendment

Regarding education about sexuality and reproductive health, the Protection of Pupil Rights Amendment (PPRA) (20 U.S.C. § 1232h; 34 CFR Part 98) applies to activities or surveys in schools that receive funding from the U.S. Department of Education. PPRA is intended to protect the rights of parents and students in two ways:

- It seeks to ensure that schools and contractors make instructional materials available for inspection by parents if those materials will be used in connection with a U.S. DOE-funded survey, analysis, or evaluation in which their children participate.

- It seeks to ensure that schools and contractors obtain written parental consent before minor students are required to participate in any U.S. DOE-funded survey, analysis, or evaluation that reveals information concerning such areas as political affiliations, mental and psychological problems potentially embarrassing to the student and his/her family, sex behavior and attitudes, etc.

At least annually (including at the beginning of the school year), a local education agency (LEA) must notify a parent directly, such as through the U.S. mail or by e-mail, of certain specific activities or surveys. The notice must provide an opportunity for the parent/guardian to opt his or her child out of participation.

Staff Training

A school's nurse, physician, and nurse practitioner may play unique roles in supporting the sexual and reproductive health of students. They may participate in the health education program, assist parents in promoting healthful behavior for both themselves and their children, identify students at risk for pregnancy and/or sexually transmitted diseases, refer students for appropriate care, and promote the health of teen mothers and their families.

A professional development program for selected school personnel, complemented by collaboration with resource professionals from the community, can be a highly effective approach to providing expert sexuality education for students. Planned Parenthood League of Massachusetts (PPLM) offers a Sexuality Educator Certification Series in Boston, Worcester, and Springfield and is also available to conduct customized trainings for staff and educators at schools. PPLM also provides direct education to middle-school and high-school youth (see information in Resources section).

The Massachusetts Department of Education's HIV/AIDS Program offers several free workshops each year for school personnel to update them on HIV, STD, Teen Pregnancy prevention, and new strategies for sexuality education. These classes are free of charge and are held around the state throughout the year. They also provide technical assistance to schools on implementing effective policies and programs. Information about the workshops is available at http://www.doe.mass.edu/cnp/hprograms/aids.html.

SEXUALITY/REPRODUCTIVE HEALTH EDUCATION

Sexuality education, as defined by the Sexuality Information and Education Council of the United States (SIECUS), is a lifelong process of acquiring information and forming attitudes, beliefs, and values about identity, relationships, and intimacy. Such a process encompasses sexual development, body image, gender roles, reproductive health, and expressions of affection and intimacy. Sexuality education addresses the biological, socio-cultural, psychological, and ethical dimensions of sexuality from the cognitive, affective, and behavioral domains, including the acquisition or enhancement of skills to communicate effectively and make responsible decisions.

Considerable research indicates that comprehensive sexuality education is effective on many levels if it encourages abstinence; teaches sexual communications skills; and provides young people with information about contraception, safer sex practices, and the importance of early identification and treatment of STDs. Such education delays the onset of intercourse (Collins, Alagiri, Summers & Morin, 2002; Kirby, 2001; Pedlow & Carey, 2004), decreases the likelihood of unprotected sexual intercourse the first time (Main et al., 1994; Kirby, 2000; Kirby, 2001),

decreases pregnancy rates (CDC, 2004), and reduces sexual risk behaviors that contribute to HIV transmission (CDC, 1999; O'Donnell, 2002).

Research indicates that young people who have participated in comprehensive sexuality education are no more likely to have sexual intercourse than those who have not (Blake et al., 2003; Guttmacher et al., 1997; U.S. Department of Health and Human Services, 2001), and that such programs are effective in reaching sexually experienced youth (Mullen, Ramirez, Strouse, Hedges & Sogolow, 2002). Targeted comprehensive sexuality education programs have also been shown to decrease high-risk sexual behaviors among gay, lesbian, and bisexual youth (Blake et al., 2001) and substance dependent adolescents (St. Lawrence, Crosby, Brasfield & O'Bannon, 2002).

The National Guidelines Task Force, convened in 1990 by SIECUS and composed of representatives from 15 national organizations, schools, and universities, identified six key concept areas that should be part of any comprehensive sexuality education program:

- human development;
- relationships;
- personal skills;
- sexual behavior;
- sexual health; and
- society and culture.

In 1991, The Task Force produced the *Guidelines for Comprehensive Sexuality Education: Grades K through 12.* Still relevant today, the guidelines contain a total of 36 topics and 778 developmental messages for these age groups:

- **Level 1:** Middle Childhood, ages 5 through 8, early elementary school.
- **Level 2:** Preadolescence, ages 9 through 12, upper elementary school.
- **Level 3:** Early Adolescence, ages 12 through 15, middle school/junior high school.
- **Level 4:** Adolescence, ages 15 through 18, high school.

Using age-appropriate, culturally-sensitive methodologies, comprehensive sexuality education may serve to:

- provide children and adolescents with a positive self image;
- provide accurate information about human sexuality;
- address values, attitudes, and beliefs about sexuality;
- explore relationships and interpersonal skills; and
- teach about abstinence, contraception, and safer sex.

Sexuality education should answer questions students may be reluctant to ask aloud, such as how to handle sexual feelings, how to maintain a positive self-image if one's appearance does not match the body types promoted by the media and popular culture, and how to protect oneself. It should provide unbiased information about the spectrum of human sexuality and equip students with the information they need to understand, avoid, or, if necessary, deal with unwanted sexual advances, sexual coercion, unhealthy or violent relationships, and sexual assault.

Inaccurate information about sex and sexuality can result in students making decisions that seriously endanger their well-being or even their lives. Effective sexuality education requires a public health approach to health promotion and illness prevention and should encompass both factual information and decision-making skills.

Massachusetts Curriculum Recommendations

Massachusetts does not mandate sexuality education, so health education curricula and textbook choice are matters of local control. Most school districts have established processes to review and select texts and curricula. Guidance is available for districts that choose to offer sexuality/reproductive health education in their schools.

In 1990, the Massachusetts Board of Education issued a policy statement on HIV/AIDS education. In part, it states:

> "AIDS (acquired immune deficiency syndrome) and infection with HIV (human immunodeficiency virus), the virus that causes AIDS, are serious threats to the lives and health of young people in Massachusetts. Therefore, the Board of Education of the Commonwealth of Massachusetts urges local school districts to create programs which make instruction about AIDS/HIV available to every Massachusetts student at every grade level. These programs should be developed in a manner which respects local control over education and involves parents and representatives of the community. The Board believes that AIDS/HIV prevention education is most effective when integrated into a comprehensive health education and human services program."

The Massachusetts Department of Education (DOE) also provides substantial guidance on health education in the form of the *Comprehensive Health Curriculum Framework* (see also Chapter 3). The Framework includes a PreK–12 standard for reproduction/sexuality education, as part of the Physical Health Strand, which states: "Students will acquire the knowledge and skills necessary to make effective personal decisions that promote their emotional, sexual, and reproductive health."

Reproduction/sexuality education involves physical development, emotions, and social elements. Instruction incorporates aspects of biology, psychology, sociology, literature, the arts, and philosophy. It addresses decisions about abstaining from and postponing sexual intercourse. Knowledge about how to avoid sexually transmitted infections that endanger one's health and well-being — as well as that of a partner — is an important component of instruction. Good communication skills can support such decisions. Addressing reproduction/sexuality in an appropriate and factual fashion leads to informed young people, increasing the likelihood of students making healthy decisions.

It is particularly important in teaching reproduction/sexuality health to consider developmental appropriateness. For each age group, Massachusetts DOE suggests, as follows, both specific learning standards — divided into development topics and wellness topics — and examples of learning activities.

PreK to Grade 5

Development

- Identify the components, functions, and processes of the reproductive system.
- Identify the physical changes as related to the reproductive system during puberty.
- Define sexual orientation using the correct terminology (such as "heterosexual," "gay," and "lesbian").

Wellness

- Recognize that diet, exercise, rest, and avoidance of risk behaviors such as smoking, drinking, and other substance use contribute to the health of a mother and fetus.

Activities

- Have students label the functions and/or organs of the reproductive system on a blank diagram.
- Invite the school nurse or a health care professional who specializes in pediatrics or adolescent health to discuss the changes that take place in boys and girls at puberty.
- Ask students to write short answers to define the types of sexual orientation.

Middle School

Development

- Recognize the emotional and physical changes in the reproductive system during puberty.

Wellness

- Explain the benefits of abstinence, postponing sexual behavior, and setting limits on sexual behavior.
- Describe short- and long-term consequences of sexuality-related risk behaviors and identify barriers and supports for making health-enhancing decisions.
- Describe behaviors and methods for pregnancy prevention, including abstinence.
- Define the types of sexually transmitted infections (STIs), including HIV/AIDS, and how they are prevented.
- Identify sexual discrimination and harassment.

Activities

- Have students discuss consequences around sexuality decisions.
- Encourage students to identify and role-play steps that improve decision making.

High School

Development

- Identify the stages of the male and female reproductive systems over the life cycle.
- List the signs of pregnancy.
- Describe the effectiveness and consequences of various pregnancy, HIV, and STI prevention methods, including abstinence.
- Identify possible determinants of sexual orientation and analyze the weight of each in light of available research.

Wellness

- Explain the importance of examination of both males and females for HIV and STIs before conception, and the risks and precautions of delivery when HIV and STIs are present.
- Describe proper prenatal care and identify types of birth defects.
- Explain the importance of communication and setting limits in a sexual relationship.
- Identify and differentiate among types and degrees of sexual risk (pregnancy, sexual assault, and STIs, including HIV/AIDS).
- Evaluate the impact of HIV/AIDS on the community, medical resources, and family.
- Identify resources available for treatment of reproductive health problems.

Activities

- Have students report on the policies of various states and countries regarding STD prevention among youth.

- Have students use current events or media portrayal to discuss the consequences of discrimination based on sexual orientation.
- Have students identify ways to prevent pregnancy and sexually transmitted infections.

Information about school-based sexuality education programs that have been proven effective is available from a number of sources, including Advocates for Youth, Child Trends, and the National Campaign to Prevent Teen Pregnancy (see Resources). The Massachusetts Department of Public Health (DPH) offers a variety of materials, including a list of abstinence resources, discussion program guides for students, and an abstinence education media campaign for parents *(It's Time to Talk)*. The CDC's *Guidelines for Effective School Health Education to Prevent the Spread of AIDS* are available online at http://www.cdc.gov/HealthyYouth/sexualbehaviors/guidelines/guidelines.htm. These guidelines, developed to help school personnel and others plan, implement, and evaluate educational efforts to prevent HIV infection, were originally published in 1988 in CDC's *Morbidity & Mortality Weekly Report* and revised in 2003.

SEXUAL DEVELOPMENT

Note: The following health information is intended for use by the professional and educational staff and is included to aid in promotion of sexual and reproductive health education and delivery of health services. It is not intended for student instruction and should not be used in place of a rigorously evaluated sexuality curriculum.

The development of secondary sex characteristics is the most noticeable change experienced during puberty. Genetic, hormonal, and nutritional factors influence the pace and timing of the events that signal the arrival of reproductive capacity. These include, in females, increase in size of ovaries, breast development, the appearance of pubic hair, menstruation, and ovulation and, in males, growth of testes and penis, appearance of pubic hair, and sperm production.

In the 1950s, a British physician named James Tanner developed a system for classifying stages of observable pubertal development, or sexual maturity ratings (SMR). Tanner Staging describes the development of breasts in females, genitals (scrotum and penis) in males, and pubic hair in both sexes. Stages are defined, beginning with Stage 1, which is prepubertal with no changes observed, and continuing through Stage 5, where full adult external genital, breast, and pubic hair maturity has been reached (see Exhibit 12-1).

This system is often used to record the status of sexual development in the medical record. It is useful for identifying delayed or precocious development and for estimating growth patterns. In evaluating physical and sexual maturation, clinicians should take into consideration the considerable variation in timing and pace of the appearance of secondary sex characteristics and adult stature.

It is also important to keep in mind that physical and emotional development do not necessarily progress at the same rate. Some youth, although not very far into puberty, may have considerable interest in sexuality, while others who have completed puberty may show little or no interest.

Female Sexual Development

The first change to take place in female reproductive development is the release of gonadotropins (FSH and LH) from the pituitary gland and the resultant ovarian growth. The development of breasts and pubic hair follows. In most females, the appearance of the breast bud precedes pubic

hair growth, but the latter may be the first sign of puberty, particularly in African American girls. The growth of pubic and body hair is stimulated by androgens from the adrenal glands.

During breast development (thelarche), the tissue under the areola enlarges in response to estrogen produced in the ovaries. This results in breast budding, at an average age of 9 or 10 years, with a normal range between 8 and 13 years. African American and Hispanic girls often develop earlier. National Health and Examination Survey (NHANES) data yields a mean age of breast development of 10.5 years for white girls, 9.8 years for Mexican American girls, and 9.5 for African American girls. A 1997 study of 17,000 girls between the ages of 3 and 12, conducted by the University of North Carolina in conjunction with the American Academy of Pediatrics, reported that 25% of African American girls had some signs of puberty at age 7.

It is not always easy to distinguish the true beginning of breast budding from the fatty tissue resulting from overweight. This has become more of an issue in recent years, with the increase in childhood obesity. What could look like the beginnings of premature puberty and raise alarms about abnormalities such as tumors may, according to some pediatric endocrinologists, simply be fatty tissue. When there is doubt, some suggest that a good indicator is whether or not the breast development is accompanied by a growth spurt. In true puberty, it almost always is. The growth spurt is particularly evident in Tanner Stages 2 and 3 of breast development.

Mature breasts are capable of both milk production and sexual responsiveness. Fatty tissue protects the milk-producing glands, and an intricate duct system channels milk to the nipple. Ligaments in the chest wall support the breast, but the breast itself contains no muscle. Nipples are erectile tissue and are quite responsive to tactile sensations. Each nipple is surrounded by a pink or brown circle of skin (areola) that is also responsive to tactile stimulation. The areola may be ringed with a few hairs. Breasts are responsive to cyclic hormonal changes. Many women have enlarged, tender breasts just before a menstrual cycle and during pregnancy. The nipple and areola often darken in color during pregnancy.

Pre-teens and adolescents are generally very sensitive to the many changes their bodies are experiencing, and they may either magnify or mask their concerns. It is important to be supportive and provide accurate information during this time. Breast development may be affected by hormone variations or conditions that radically change nutritional status (e.g., eating disorders). Because much of the breast tissue is fatty tissue, marked weight loss can cause breast atrophy. Variations such as breast asymmetry (one breast larger than the other) are common and may resolve themselves or persist.

Menstruation and Ovulation

The onset of menstruation (menarche) is a normal stage in the development of a girl to adulthood. Different cultures have a variety of perspectives on menstruation, however, and this may influence how individual girls respond. Most girls experience menarche between 10.5–14.5 years, with an average of 12, although menstruation is variable, individualized, and can begin anytime between the ages of 9 and 16. NHANES data indicates that mean ages for menarche are 12.7 years for white girls, 12.2 years for Mexican American girls, and 12.1 years for African American girls. Menstruation will not occur until all parts of a girl's reproductive system have matured and are working together.

The rising production of gonadotropins (FSH and LH) during puberty causes the maturation and release of ova (egg cells), which have been present from birth, from the ovarian follicles where they are stored. The increase in estrogen production also stimulates monthly proliferation of the endometrium (uterine lining). Pregnancy is possible when an ovum is ripe and is released from one of the ovaries. This happens once a month and is called ovulation. If the ovum is fertilized by a

sperm cell (which tends to occur while the egg is still in the Fallopian tube), the fertilized egg can attach and grow on the uterine lining, at which point a pregnancy is established.

If an egg is not fertilized by a sperm, pregnancy does not occur, and estrogen and progesterone levels drop. The egg either dissolves or is absorbed into the body. The endometrial lining of the uterus is no longer needed, so it breaks down and leaves the body. This menstrual fluid, made up of the blood-rich lining, comes out through the vagina in the process of menstruation. The days of discharge are called a period.

The menstrual cycle is divided into phases related to the changes that occur in the ovary (the follicular and luteal phases) and the changes that occur in the endometrium (the menstrual proliferation and secretory phases). Each of these phases is controlled by a complex pattern of hormonal secretion: gonadotropin releasing hormone (GnRH) from the hypothalamus, follicle stimulating hormone (FSH) and luteinizing hormone (LH) from the pituitary gland, and estrogen and progesterone from the ovary.

A menstrual cycle is defined as the interval of time from the beginning of one menstrual flow to the beginning of the next menstrual flow. The day the bleeding starts is counted as the first day of a given cycle. The average length of a menstrual cycle is 28 days, but cycles can range anywhere from 21–35 days. Periods can be light, moderate, or heavy. While most periods last from 3–5 days, anywhere from 2–7 days is considered normal. In addition to the variation among women, a woman's own menstrual period may not be the same every month. For the first few years after menstruation begins, cycles and periods may be very irregular. A period may be late due to reasons other than pregnancy, such as emotional stress, major changes in diet, sickness, travel, or hormonal imbalance. Some girls have very irregular periods because of low weight, intense athletic activity, polycystic ovary syndrome (PCOS), and other problems. PCOS occurs in 5%–10% of girls and is associated with obesity, excess hair growth, and acne. Referral for evaluation and treatment is important. In order to identify unusual changes in menstrual cycle, it is important for girls and women to keep track of the day their menstrual bleeding starts by noting it on a calendar.

Some girls may experience cramping, backaches, bloating and/or mood swings, prior to or during menstruation. Anti-prostaglandins are a common course of treatment for some of these symptoms, with close attention given to directions for use, but it is important to discuss any medication with a health care practitioner. In addition, if providing treatment in any of these situations, schools should always refer to their policies and protocols; primary care provider orders may be required. If symptoms intensify or persist, referral to a specialist is highly recommended. As the female adolescent matures, she should be linked with a practitioner who specializes in adolescent/young adult medicine.

Ovulation occurs approximately 14 days before the beginning of the next menstrual cycle. The variation in the length of the menstrual cycle is usually due to variation in time required for the ovum to mature, which takes place during the first half of the menstrual cycle. This timing is important for understanding fertility and contraception.

Fertilization usually takes place within 24 hours after an ovum is released from the ovary, although fertilization can occur up to 72 hours after release of the ovum. Sperm can live for up to 7 days in the female reproductive tract. Combining these facts means that the most fertile interval in a woman's cycle extends from five days prior to ovulation through the day afterwards.

During menstruation, most girls and women use either pads (sanitary napkins) or tampons. Both are made of various levels of absorbent material and should be changed several times a day. In the case of pads, the frequency of changes is a matter of personal comfort and good hygiene.

There are also alternative menstrual products, such as reusable or disposable menstrual cups. If local policy allows, most schools make sanitary napkins (not tampons) available for their students, although generally it is the student's responsibility to provide them.

Studies suggest that there is an association between the extended use of high-absorbency tampons and an increased risk of Toxic Shock Syndrome (TSS), a rare but deadly disease. Recommendations for avoidance include intermittent use of tampons (tampons during the day and pads at night), use of the least absorbent tampons which are adequate for amount and flow, and frequent tampon changes (every 4–8 hours). Symptoms of TSS may include:

- high fever;
- muscle aches;
- diarrhea;
- dizziness and/or fainting;
- sunburn-like rash;
- sore throat; and
- bloodshot eyes.

TSS can be life-threatening, especially to teenagers, and prompt and accurate diagnosis is essential for treatment to be effective. Treatment involves removal of the tampon, administration of antibiotics, and fluid replacement. Tampon use should not be resumed until antibodies against the toxin are present.

Male Sexual Development

In males, pubertal change is stimulated by androgens from the adrenal glands. The earliest sign is growth of the testes, followed by the growth of pubic hair and enlargement of the penis, both in length and diameter. The skin of the scrotum gradually darkens and becomes less smooth. By mid or late puberty, axillary and facial hair appear. Voice changes accompany a growth spurt around this time.

The first production of mature spermatozoa (spermarche) can occur in early puberty, but it usually occurs in mid-puberty at an average age of 13.5–14.5 years, along with first ejaculation. During this time (12.5–14.5 years), growth of the penis is rapid. Erections occur more frequently due to testosterone-influenced development of the corpora cavernosa (the two parallel chambers of the penis that, when filled with blood, produce an erection). A male is considered potentially fertile at the time of first ejaculation.

Males as well as females are subject to highly individual biological clocks. The changes of puberty usually begin between ages 10 and 12 and end between ages 14 and 20. Therefore, some 13- or 14-year-olds appear to be grown men, while some of their classmates still look like boys. Growth spurts occur at approximately age 14 in the average male but can come earlier or later.

It is fairly common for young males to experience temporary breast enlargement during early puberty. This occurs in up to two-thirds of male adolescents. Called gynecomastia, the condition is usually benign and self-limiting. Young men need reassurance that this has no effect on masculinity and usually resolves within a year. It is important, however, to rule out other causes of gynecomastia, such as chromosomal or hormonal disorders, gonadal tumors, medication, or drug use (marijuana). Persistent gynecomastia in a mature boy (Tanner Stage 5) is unlikely to resolve and may require surgical excision if it is problematic to the individual.

Nocturnal Emissions and Random Erections

Often a male's first ejaculation will occur while he is asleep, as a nocturnal emission. These "wet dreams" are both normal and involuntary; A boy has no conscious control over them. They are

healthy signs of growing up and of sexual development. To minimize concern, it is better that boys know about the possibility of wet dreams before they occur. Boys should also know that they may sometimes experience spontaneous erections during the day and that this too is a normal part of puberty. They may need reassurance that these occurrences are not likely to be noticeable, unless they themselves draw attention to what is happening.

Hygiene

Although a healthy, well-nourished, and exercised body is a great start toward a positive sense of self, it may not always be enough. Most adolescents, both male and female, want to feel attractive and accepted by others and have a healthy self image. During adolescence, a teen's body undergoes changes, including the growth of hair in the armpits and in the pubic area, and the "turning on" of the sebaceous glands that produce perspiration or sweat. It becomes important for adolescents to bathe or shower regularly to prevent unnecessary body odor and possible embarrassment among peers. Odor is caused by the activity of normal skin bacteria, which flourish in dark moist environments such as axillary and genital areas.

Habits of grooming that will last into adulthood are usually cultivated in adolescence and should be encouraged. Hygiene consists of keeping the hair, teeth, nails, and body clean, especially the armpits and the genital area. In addition, clothing should be kept clean, and underwear and socks changed regularly. When addressing the issue of personal hygiene with an adolescent, the school nurse and/or educator must be aware of cultural and socioeconomic conditions that may influence adherence to a personal hygiene routine.

RECOMMENDATIONS FOR PHYSICAL EXAMINATIONS

All adolescents should have annual medical appointments with a health care provider, so that the provider may assess their risk for reproductive health problems, provide prompt treatment of any presenting problems, and educate and counsel the adolescent on responsible and safe sexual behavior. Such appointments need not include a full physical examination, unless one is indicated or required during a particular year to fulfill the requirements established by the school committee or local board of health. (See Chapter 5 for information and regulations about periodic physical examinations.)

Breast Self Exam

Female breast self-examination is a life protecting habit that should be learned during the late teen or early adult years as a method of early detection of breast cancer. Nearly 85% of the lumps found in breast tissue are discovered by women themselves. It is important for young women performing self-exams to know that not every lump or bump is an indication of cancer, although it is always best to go to a health provider for an exam if anything seems out of the ordinary. It can be quite normal, for example, for a young woman’s breasts to feel lumpy or change in consistency with the change in hormones during her menstrual cycle. However, only a health care provider can conduct the proper assessment. Information about how to perform breast self-examination was developed by the Nemours Foundation's Center for Children's Health Media and is available online at http://kidshealth.org/teen/sexual_health/girls/bse.html.

Testicular Cancer and Self Examination

Testicular cancer is one of the most common types of cancer in American men, and it occurs primarily in young men between the ages of 15 and 40. White men are 5 to 10 times more likely to get it than are African American men. Asian American, Latino, and Native American men also have

higher rates than African American men, but they have lower rates than white men. A family history of testicular cancer increases the risk.

The American Cancer Society (ACS) estimated that in 2007 about 7,920 new cases of testicular cancer would be diagnosed in the United States. The good news is that this is a highly treatable and usually curable form of cancer. Most cases can be found at an early stage. The majority of doctors agree that examination of a man's testicles should be part of a general physical examination. The ACS recommends a testicular examination as part of a routine cancer-related checkup.

Because regular testicular self-examinations have not been studied enough to show a reduction in the death rate from this cancer, the ACS does not recommend them for men without specific risk factors. However, many health care providers recommend that all men perform monthly testicular self-examinations after puberty, to ensure rapid discovery and treatment of not only testicular cancer but also testicular torsion. Testicular torsion is the twisting of a testis such that the spermatic cord becomes twisted, cutting off blood flow to the testis. Early medical treatment of this more common condition can markedly improve the chances of saving the testes. Information about how to perform a testicular self-examination is available from the Testicular Cancer Resource Center at http://tcrc.acor.org/tcexam.html.

Screening for STDs

Screening for STDs is particularly important for sexually active teens. For young women, pelvic examinations should be initiated soon after sexual activity has begun. Pap smear screening should be initiated approximately 3 years after the onset of sexual activity or by age 21, whichever comes first. Earlier screening should be initiated in sexually active girls who are immunosuppressed (e.g., HIV positive) or who receive episodic care.

The privacy of students with HIV infection or AIDS is protected under state laws. M.G.L. c.214, s.1B protects against unwarranted invasion of privacy. Also, M.G.L. c.111, s.70F, prohibits health care providers and facilities (including school-based clinics) from disclosing HIV test results (or even the fact that a test has been performed) without specific, informed, written consent of the person who has been tested.

Students may give consent to medical care for testing for and treatment of STDs/HIV and pregnancy prevention. In addition to licensed physicians, state-contracted STD clinics diagnose and treat minors for STDs without requiring parental consent. Because these services are free to minors, no insurers are notified of these services. At all times, students are entitled to confidentiality. For information about clinic locations and schedules, visit http://www.mass.gov/dph/cdc/std/services/clinicsched.htm.

Although STDs are reportable directly to DPH (see http://www.mass.gov/dph/cdc/surveillance/rprtbldiseases_hcp.pdf for a list), the department does not release the identity of any case but only data in aggregate form, so that no individual can possibly be identified. The success of educational programs and disease prevention activities depends largely on the community trusting that all personal information is kept confidential.

If a student seeks the assistance of school health personnel in obtaining HIV or STD testing or chooses to disclose the results of previous HIV testing and is in need of services, the *HIV/AIDS, Hepatitis, STD and Substance Use Services and Resources Guide* is a valuable resource. The *Guide* (available online at http://www.mass.gov/dph/aids/hivaids.htm) is intended to assist providers in making appropriate referrals for individuals in need of related screening, testing, treatment, and other services. To ensure the accuracy and reliability of HIV testing, clinical labs

must meet state regulatory standards specifically established for such tests and must be licensed and monitored by DPH. The state standards for HIV testing are set forth in 105 CMR 180.300.

In schools with school-based health centers (SBHCs), a range of reproductive services, such as pregnancy testing, STD testing and treatment, and gynecological exams, may be provided, either onsite or through referral. According to studies conducted by The Center for Health and Health Care in Schools, routine chlamydia and gonorrhea screening and treatment in schools with SBHCs are associated with significant declines in chlamydia prevalence among boys and a slight decline among girls (Center for Health and Health Care in Schools, 2000).

Counseling is a critical component of the effectiveness of the HIV antibody test. Everyone should receive pre-test counseling prior to administration and post-test counseling when receiving the results. Counseling provides an opportunity for health care providers to assess an individual's testing readiness and risk behaviors, review testing options, explain procedures, and develop a risk reduction plan. Additional information about HIV/AIDS and STDs may be found in Chapter 8.

Human Papillomavirus (HPV) Vaccine

It should be noted that on June 8, 2006, the U.S. Food and Drug Administration (FDA) licensed the first vaccine developed to prevent cervical cancer and other diseases in females caused by certain types of genital human papillomavirus (HPV). The quadrivalent vaccine protects against four HPV types (6, 11, 16, 18), which are responsible for 70% of cervical cancers and 90% of genital warts. This prophylactic vaccine, made from noninfectious HPV-like particles (VLP), offers a promising new approach to the prevention of HPV and associated conditions. However, this vaccine cannot replace other prevention strategies because it does not work for all genital HPV types. For updated information and recommendations for its use, please see the following CDC website: http://www.cdc.gov/search.do?action=search&queryText=HPV&x=19&y=11

SEXUAL DECISION MAKING

Young people's decisions about whether and when to engage in sexual activity, as well as how to do so safely, are influenced by many factors. Family values, religious beliefs and affiliations, parental monitoring, social and cultural background, self image, media, peer influence, and education all play major roles.

The Surgeon General's Call to Action to Promote Sexual Health and Responsible Sexual Behavior (2001) enumerates a number of essentials that communities and health care professionals must provide to adolescents in order to promote healthy and responsible sexual behavior:

- education;
- skills training;
- self-esteem promoting experiences;
- appropriate services related to sexuality;
- positive expectations; and
- sound preparation for their future roles as partners in committed relationships and as parents.

Knowledge is a necessary ingredient for responsible decision making, but knowledge alone is not sufficient. In order for young people to practice healthy behaviors — especially when confronted with new and often confusing sexual feelings, pervasive images of sexuality in popular culture, and peer influence and pressure — acquisition of factual information must be accompanied by the development of communication skills and values clarification.

Communicating about sexual matters can be difficult for adolescents. They may feel that being honest will hurt, embarrass, or threaten a partner, or that talking may ruin the relationship. In addition, a teen may not be certain about what he or she really wants and may find it difficult to express that uncertainty. Practicing and mastering skills such as interpersonal communication, decision making, and assertiveness prepare young people to have a greater chance of achieving satisfying relationships, based on responsibility to themselves and others.

The Surgeon General's Call to Action notes that school attendance, in and of itself, seems to be a significant protective factor for sexual health. "Among youth who are in school, greater involvement with school — including athletics for girls — is related to less sexual risk-taking, including later age of initiation of sex, and lower frequency of sex, pregnancy, and childbearing" (U.S. Department of Health and Human Services, 2001). Research indicates that youths who drop out of school are more apt to initiate sexual activity earlier, fail to use contraception, become pregnant, and give birth.

For adolescents who make a decision to abstain or postpone sexual activity, the support of family, health professionals, and educators is important to counteract peer pressure and other societal influences. Adolescents who perceive themselves as having such support usually exhibit healthier decision making. Through formal and informal education, the school environment can proactively support these decisions to abstain or postpone sexual activity.

What Schools Can Do

Schools can support students in their decision making in a number of ways. Some helpful ideas drawn from Advocates for Youth's *Rights Respect Responsibility*® Campaign include:

- Encourage students to identify their personal, family, community, and religious values related to sexual health and to respect values that differ from their own.
- Encourage discussion about the benefits of delaying sexual initiation.
- Provide youth with opportunities to discuss relationships, intimacy, love, and commitment. Use popular TV shows, movies, literature, and music to start discussions.
- Encourage youth to talk with their parents about sexuality. Provide take-home exercises for parents and young people to do together. Invite parents to participate in classroom discussions.
- Use role-plays to help young people develop the communication and negotiation skills they will need to discuss sexual health issues with their parents, family, friends, and partner.
- Ask the PTA to sponsor *Teen Pregnancy Prevention Month* (during May) or *Let's Talk Month* (during October) at your school.

PREGNANCY AND STD PREVENTION

Note: The following health information is intended for use by the professional and educational staff and is included to aid in promotion of sexual and reproductive health education and delivery of health services. It is not intended for student instruction and should not be used in place of a rigorously evaluated sexual health curriculum.

When educating adolescents regarding decisions about abstinence and contraceptive use, health education professionals must pay attention to a variety of developmental and psychosocial issues. Practicing abstinence or using contraceptives is less influenced by education and information than by cognitive developmental stage, personal beliefs, lifestyle, social and cultural background, opinions and practices of peers, and external support systems. Values involving choice of partner,

self image, peers or family, and even pregnancy may have a powerful influence on decisions about contraceptive use. Information about practicing abstinence and the proper use of each method of contraception, in addition to recognition of emotional, cultural, psychological, or economic issues, is critical to reducing and preventing adolescent pregnancy and STD and HIV infection.

If an adolescent makes a decision to become sexually active and to use contraceptives, she or he may request them from a health care provider or may be told by the latter during the course of an appointment that contraceptives are available. Health educators should consider the following in counseling adolescents about methods of contraception:

- When sexual intercourse occurs, any preventive method is better than no method at all, but only latex or polyurethane condoms reduce the risk of HIV and most STD infections.
- The best contraceptive methods are those that the partners will use correctly and consistently.
- Education about contraceptive methods under consideration should highlight the pertinent risk factors and success rates and should emphasize the use of the latex or polyurethane condoms as an effective prevention for pregnancy, HIV, and most STD infections.
- Techniques for obtaining and using contraceptives are key. For oral contraceptives, this means learning how to get a prescription and maintain a daily schedule for taking them. For condoms, it means knowing how to obtain them and use them correctly and consistently.
- Not all methods that prevent pregnancy will prevent transmission of STDs and HIV. This can only be prevented by abstaining from sexual activity, having sex only with a monogamous partner who has tested negative for STDs and HIV, and/or by using appropriate protection during sexual activity or other intimate contact.
- The effectiveness of any contraceptive method, including abstinence, depends on several factors, including consistency of use, length of time of use, the physiological and anatomic characteristics of the user, and the motivation of the user.

Contraceptive Methods

The following is a general summary of available methods; Students should be referred to a health care provider for a discussion about the appropriate method for their particular needs. Note that minors may access the services of clinics and health care providers without parental knowledge or consent. Please see the following resources for further information on contraceptive methods, effectiveness, contraindications, and warning signs:

http://www.managingcontraception.com
http://www.pplm.org
http://www.nlm.nih.gov/medlineplus/birthcontrol.html

Abstinence

If practiced properly, abstinence from intercourse is the single most effective form of birth control and the most effective way to protect oneself from sexually transmitted disease. Sexual abstinence simply means not having vaginal, oral, or anal intercourse. For prevention of pregnancy, it is extremely important not to have any unprotected penis-to-vagina contact, as sperm can be very mobile and may move into the vagina and reach the ovum even if actual penetration has not occurred.

Some teens practice anal sex with the idea that this preserves virginity (for women) and also protects them from pregnancy. However, the risks of STD and HIV transmission are high with anal sex. Condoms with additional non-spermicidal lubrication should be used if anal sex is practiced.

Unprotected oral sex also carries risk for STDs and HIV transmission. HIV is found in blood, semen, vaginal fluids, and breast milk. The virus can be transmitted through cuts, openings, sores,

and mucous membranes (mouth, anus, vagina), regardless of whether the fluid (semen, vaginal fluids) is swallowed or spit out.

Barrier Methods

Condoms

When used consistently and correctly, condoms are fairly effective in preventing pregnancy and provide protection against the sexual transmission of HIV and some STDs. Most condoms are made from latex, but polyurethane condoms are an alternative for latex-allergic couples. Only these two types of condoms provide protection against HIV and other STDs. "Natural" or "lambskin" condoms are touted for their feel, but they have tiny pores that may allow for the passage of viruses like HIV, hepatitis B, and herpes. It should be noted that there are also female polyurethane condoms that are gaining in popularity.

In 1990, the Massachusetts Board of Education issued a recommendation that "every school committee, in consultation with superintendents, administrators, faculty, parents and students, consider making condoms available in their secondary schools."

Diaphragms, Cervical Caps, and Shields

Diaphragms, cervical caps, and shields are other available barrier methods of contraception. Although they are effective, they are not widely used by teens because they require fitting by a health care clinician and some practice to use correctly. The effectiveness of these methods may be increased by using spermicides (see below); additionally using a latex condom; being sure the diaphragm, cap, or shield is intact (no holes); and covering the cervix prior to intercourse.

Spermicidal Methods

These methods include foam, vaginal suppositories, gel, VCF (vaginal contraceptive film), and the contraceptive sponge. All are inserted into the vagina before intercourse. None of these methods is more than 80% effective in pregnancy prevention (some considerably less), and most contain nonoxynol-9 which kills sperm but may *increase* HIV transmission with frequent use. Spermicides do not provide protection from STDs.

Combined Hormonal Methods

Oral Contraceptives ("the pill" or "birth control")

Birth control pills come in many forms and in various dosages. "The Pill" is one of the most popular and effective methods of pregnancy prevention. Birth control pills do not, however, protect women against sexually transmitted diseases or HIV infection, so condoms should still be used. Most pills contain small dosages of the female hormone estrogen and a progestin (a progesterone-like substance), which prevent pregnancy primarily by preventing ovulation. Birth control pills most commonly prescribed for teens are combination pills, with a low dosage of estrogen (20–35 mcg) and progestin.

Transdermal Patch

The transdermal contraceptive patch (Ortho Evra™, norelgestromin/ethinyl estradiol) acts through suppression of gonadotropins by a combination of hormones. A one and three-quarter inch square patch is applied once a week to deliver a steady flow of hormones through the skin and into the bloodstream.

Vaginal Ring

The vaginal ring is a soft, flexible, transparent plastic ring, 2 inches in diameter, which is self-inserted into the vagina, where it remains for 3 weeks, followed by a ring-free week. The ring

contains two hormones, an estrogen and a progestin, which are absorbed from the vagina into the bloodstream.

Single Hormone Methods

Progestin-Only Pill

Not all birth control pills contain both estrogen and progestin. One type contains only progestin. These progestin-only pills, also called POPs or mini-pills, may be an alternative for teens who cannot take estrogen. If taken as directed, POPs are only slightly less effective than regular birth control pills at preventing pregnancy, but if one day is skipped, or even if the pill is taken more than three hours late, a second method of contraception must be used for the rest of the month.

Hormonal Injections (Depo-Provera)

The most commonly used injectable contraceptive is depot medroxyprogesterone acetate (DMPA), marketed as Depo-Provera™. It is injected intramuscularly in the upper arm or buttocks every 3 months or so (and no further apart than every 13 weeks). A medical evaluation is required prior to the first injection, and the injection is usually given within 5 days of the beginning of a period, unless the teen has been using the pill or an IUD. This long-acting hormone inhibits ovulation, alters cervical mucus, and causes atrophy of the endometrium.

Intrauterine Devices (IUDs)

An Intrauterine Device (IUD) is a small object that is inserted through the cervix and placed in the uterus to prevent pregnancy for a period that can range from 1–10 years. IUDs are currently available in two forms in the United States:

- **Mirena**, a hormone-releasing IUD, is advertised as an intrauterine progestin delivery system (IUS). It works by releasing a small amount of levonorgestrel into the uterus, which makes it inhospitable to both egg and sperm.
- **Paraguard T380A** is a copper-containing IUD. It works because its copper is toxic to both sperm and egg.

Fertility Awareness and Natural Family Planning

Fertility awareness and natural family planning involve tracking the days during the menstrual cycle with the lowest risk of pregnancy and planning for intercourse during these lower-risk days. Tracking fertility patterns is based on a combination of body signs (cervical mucus, basal body temperature, and cervical changes) and/or by using a calendar to predict when ovulation will occur (rhythm method). The calendar method assumes that ovulation occurs 14 days before the beginning of the next menstrual cycle, that sperm may remain viable in the female reproductive tract for up to 5 days, and that an ovum remains viable for 24 hours after it is released.

Those who choose to abstain from intercourse during fertile days refer to this method as natural family planning, and those who use a barrier or hormonal method during fertile days call it fertility awareness. For it to be effective, a woman must carefully observe and record her cycle (days and/or body signs) over several months in order to be assured of the timing of her menstrual cycle and of ovulation.

Withdrawal

Withdrawal, the removal of the penis from the vagina before ejaculation begins, is less effective (73%–81%) as a method of birth control. Many health professionals do not even consider it to be a form of contraception because ejaculation is hard to control (especially for adolescents) and because sperm may be present in fluid released by the penis prior to ejaculation. In addition, this method does not protect against STD or HIV transmission because pre-ejaculate may contain HIV or the organisms that cause STDs. Anyone using withdrawal as a primary method of birth control

should be strongly encouraged to consider more effective contraceptive methods, and to obtain emergency contraception in case the method fails. Although withdrawal is risky, it is clearly better than not using anything.

Emergency Contraception

Emergency contraception (EC) is a method of preventing pregnancy after a primary contraceptive method fails or after unprotected sex. Emergency contraceptive pills (ECP), also known as Plan B™ or "morning after pills," are special doses of regular birth control pills that offer an important second chance to prevent pregnancy after unprotected sexual intercourse.

The sooner ECPs are taken after unprotected sex (preferably within the first 12 hours), the more effective they are. When taken within 72 hours, ECPs reduce a woman's risk of pregnancy by 75% (birth control pills taken for emergency contraception) or by 89% (Plan B™ progestin-only pills). Recent research has shown ECPs to be somewhat effective even when initiated up to 120 hours after unprotected sex.

In compliance with the requirements of Chapter 91 of the Acts of 2005, *An Act Providing Timely Access to Emergency Contraception,* Massachusetts Department of Public Health (DPH) provides a variety of information about emergency contraception — fact sheets, regulations, policies, and contact information for questions — on the following website: http://www.mass.gov/emergencycontraception. The Massachusetts EC Network website also provides specific information for the Commonwealth: http://www.massECnetwork.org.

Information about ECPs and where to obtain them is also available by calling 888-NOT-2-LATE (888-668-2528) or visiting http://www.not-2-late.com or http://ec.princeton.edu/.

ADOLESCENT PREGNANCY

Rates of teenage pregnancy in the U.S. have declined steadily in recent years, falling 30% between 1992 and 2002, according to Centers for Disease Control and Prevention findings. Recent research attributes this marked decline to a combination of delayed initiation of sexual intercourse and improved contraceptive practice among adolescents (Santelli et al., 2004). In Massachusetts, the teen pregnancy rate has consistently been lower than the overall U.S. rate, and from 1990–2005, the rate dropped 38.1% (Center for Health Information, Statistics, Research, and Evaluation, 2007). As of 2004, the Commonwealth's teen birth rate was the third lowest in the country (Alan Guttmacher Institute, 2004). Findings from a recent study headed by John Santelli, MD, MPH, department chair and professor of Clinical Population and Family Health at the Mailman School of Public Health at Harvard University, indicated that 86% of the recent decline in U.S. teen pregnancy rates is the result of improved contraceptive use, while a small proportion of the decline (14%) can be attributed to teens waiting longer to start having sex (Santelli, Duberstein Lindberg, Finer & Singh, 2007).

Despite these encouraging statistics, progress in teen pregnancy prevention has not been uniform throughout the state. Not all cities and towns have seen a decline in teen births, and, according to the Massachusetts Alliance on Teen Pregnancy, the rate in many communities far exceeds the national average. (Information about teen birth characteristics for Massachusetts cities and towns is available at http://www.mass.gov/dph/pubstats.htm).

For the most current information on state-supported teen pregnancy prevention services, go to http://www.mass.gov/dph/fch/challengefund.htm.

Pregnancy Options

Adolescents who think that they may be pregnant should be referred immediately to a health care provider for confidential pregnancy testing, diagnosis, and counseling. While parental involvement may be optimal, it may not be possible. In Massachusetts, M.G.L. c.112, s.12F creates a category of "emancipated minors" who are given legal authority to make decisions about their own medical diagnosis and treatment. A minor who believes herself to be pregnant (like minors who believe themselves to have been exposed to a dangerous disease, such as an STD) may legally consent to diagnosis and treatment without parental permission. In fact, the statute requires that the information be held confidential unless the life or limb of the minor is endangered. (See also Chapter 2 for guidelines regarding the confidentiality of school health records.)

A diagnosis of pregnancy may precipitate a personal and family crisis for the adolescents involved. At the very least, it presents the pregnant adolescent (and possibly her partner) with a number of important choices, starting with whether to continue or terminate the pregnancy, and, if a decision is made to continue the pregnancy, whether she is (or they are) able to assume the role of parent or must make plans for the baby's adoption. It is important that the pregnant adolescent make an informed decision that meets her long-term needs and well-being. To support this outcome, the pregnant teen must be given an opportunity to discuss the available options with a trusted adult who presents the facts in a nonjudgmental manner. Whenever possible, both partners responsible for the pregnancy, as well as their respective families, should receive counseling. The school nurse may be an important source of appropriate referrals for medical care and any additional counseling that may be necessary.

Prenatal Care

Initiating prenatal care in the first trimester (1st to 3rd month) improves pregnancy outcomes. Yet nationwide statistics indicate that up to 70% of adolescents do not seek prenatal care until the second trimester (4th to 6th month). Early and comprehensive prenatal care provides several benefits and meets essential needs of both the mother and the fetus:

- confirmation of pregnancy and gestational age;
- social service counseling about pregnancy options, future plans, and psychosocial risk factors;
- nutrition counseling and initiation of prenatal vitamins, especially iron and folic acid supplements;
- referral for assistance from such programs as MassHealth in Massachusetts and the Special Supplemental Nutrition Program for Women, Infants, and Children (better known as WIC);
- early detection and treatment of sexually transmitted diseases (STDs) and other infections, and counseling on prevention of STDs;
- counseling about the risks of tobacco, alcohol, and other substance use, especially during pregnancy;
- recording baseline weight and blood pressure measurement; and
- identification of risk factors from medical history and/or physical examination, and initiation of appropriate and timely interventions.

Counseling regarding pregnancy prevention should be introduced early in prenatal care so that adolescents, who are at risk for short-spaced repeat pregnancy, have a chance to learn about and plan for future steps to avoid this.

Adolescents, especially younger ones, are at risk for developing medical problems during pregnancy that may require special prevention or treatment. Some examples include underweight, blood group incompatibilities, and urinary tract infections. Adolescents may initiate or continue "at

risk" behaviors, such as smoking or using illicit drugs or alcohol, which may influence the pregnancy and the growth and development of the fetus.

Prenatal care for adolescents who plan to become parents should include preparation for childbirth, infant care, nutrition, and parenting. In addition, social service support is essential for ensuring return to school or work or finding vocational training after delivery.

Assumption of Parenting Role

Pregnancy may not only complicate or thwart educational attainment but may also reduce employment opportunities for adolescent mothers. Young mothers without support may also be at high risk for a host of mental health problems including postpartum depression, anxiety, psychosomatic complaints, substance use and abuse, child abuse, and family disruption.

When the mother is unmarried, the only way her child can have a legal father is by establishing paternity (M.G.L. c.46, s.1). A young father may question the paternity of the child he has been told is his, which may be an expression of his ambivalence about accepting a responsibility he feels ill equipped to meet. Many report difficulty in dealing with the anger and demands of their partner's families. Although some teen fathers may be absent from the household of their partner and child or may not provide a significant source of child care or financial assistance, many often report strong emotional ties to them and concern for their welfare and do remain involved.

It is important for males to know that they may be financially responsible for a child even if they did not want or plan the pregnancy. According to M.G.L. c.209C, s.8, the age of the person alleged to be the father *"shall not be a bar to the establishment of paternity or entry of a support order."* If a woman's partner will not accept paternity, she can petition a court to order that the man she believes to be her baby's father undergo paternity testing. If he is proven to be the father, he will be required to pay for the cost of the test. If not, the mother pays. For more information about child support services, contact the MA Department of Revenue: http://www.mass.gov/?pageID=doragencylanding&L=4&L0=Home&L1=Individuals+and+Families&L2=Help+%26+Resources&L3=Child+Support+Enforcement&sid=Ador.

Because parenthood during adolescence is often associated with a disruption of social and emotional growth, professional counseling for both adolescent parents should be considered. Counseling services should be consistent, nonthreatening, and directed toward achieving realistic goals. Such services can assist young parents since the competing demands of parenthood may create an additional set of stressors at a time in their lives when independence, identity formation, development of future plans, and establishment of social relationships are naturally a focus.

Adoption/Relinquishment

Adoptions are handled through both public and private agencies. The birth parent(s) relinquish legal custody of the child to the agency for placement with a family selected by the agency. A reputable social service agency provides trained counselors who can help support the decision-making process, both during the planning to place a child for adoption and after the child has been placed. In a "closed" adoption, neither the birth parents nor the adoptive parents know the others' names, addresses, or any identifying characteristics. In an "open" adoption, both sets of parents may meet each other and maintain some form of contact after the adoption.

Unwed fathers have traditionally had fewer rights with regard to their children than either unwed mothers or married parents. According to the National Adoption Information Clearinghouse, the U.S. Supreme Court has affirmed the constitutional protection of an unwed ("putative" or "presumed") father's parental rights when he has established a substantial relationship with his child. The Court defined a "substantial relationship" as the existence of a biological link between

the child and putative father, and it defined the father's commitment to the responsibilities of parenthood as “participating in the child's upbringing.” This, however, leaves unresolved the question of such father’s rights in instances when an infant is placed for adoption at birth and he has never had an opportunity to develop a substantive relationship with his child. The Court has yet to rule on what an unwed father must do to protect his parental rights.

In Massachusetts, the rights of fathers in connection with adoption of children born outside marriage are set forth in M.G.L. c.210, s.4A. This statute requires that notice of adoption proceedings be given to a person who has filed a parental responsibility claim with the Department of Social Services. Within 30 days of notice concerning the child's adoption, the person claiming paternity must file a petition for adoption or custody of the child with the probate court. If he fails to do so, he is not entitled to notice of any subsequent proceedings concerning custody, guardianship, or adoption. If a petition for adoption or custody is filed, the court may approve the petition *“if it finds that such adoption or custody is in the child's best interest and if it finds that such person is the father of the child.”* The court may require that the petitioner produce evidence of paternity and be responsible for any costs for temporary care of the child pending a hearing of his petition.

The Safe Haven Act of Massachusetts, a 2004 amendment to M.G.L. c.119, s.39, allows a parent to legally surrender a newborn infant, 7 days of age or younger, at a hospital, police department, or staffed fire station without fear of criminal prosecution. A voluntary surrender of a child under this law does not automatically terminate parental rights, but does authorize the Department of Social Services to place the child in foster care and initiate a petition to terminate parental rights.

The Role of the School Regarding Pregnant and Parenting Students

Research has shown that early motherhood has potentially damaging effects on the educational, vocational, psychosocial, and subsequent childbearing future of the adolescent girl. Pregnancy is one of the most common reasons girls cite for failing to complete high school, although there is currently some debate about whether pregnancy is more often a cause or a consequence of dropping out.

The school should provide educational and counseling support for students who are pregnant and/or parenting. Under Title IX of the Education Amendments of 1972, schools receiving federal funds are prohibited from discriminating against students on the basis of pregnancy or marital status, and from discriminating against a parenting student on the basis of gender. Health plans, medical benefits, and related services are to be provided to pregnant students in the same manner as services are provided to students with "other temporary disabilities.”

The law also requires schools to provide a pregnant student with an excused medical leave of absence and reinstate her to her previous status upon her return to school. A school is permitted to require a doctor's certificate from a pregnant student only if the school imposes the same requirement upon all other students with physical or emotional conditions requiring a physician's care.

Massachusetts has no law or administrative rule that addresses attendance for pregnant or parenting students. The state neither requires nor prohibits school districts’ operating alternative programs for these students, but such programs must be voluntary and comparable to what is provided for nonpregnant students.

State law prohibits the suspension, expulsion, or disciplining of a pregnant student. M.G.L. c.71, s.84 states: *“No student shall be suspended, expelled, or otherwise disciplined on account of marriage, pregnancy, parenthood or for conduct which is not connected with any school-sponsored*

activities; provided, however, that in the case of a pregnant student, the school committee may require that the student be under the supervision of a physician."

The National Association of State Boards of Education has compiled state-by-state information about policies on pregnant or parenting students. This information is available online at http://www.nasbe.org/HealthySchools/States/Pregnant%20&%20Parenting.html.

Terminating a Pregnancy

Many teens lack information about what terminating a pregnancy entails. Immediate assessment of options and choices is imperative when an adolescent seeks help. It should be noted that abortion is a relatively safe procedure. "The risk of death associated with abortion in the United States is less than 0.6 per 100,000 procedures, which is less than one-tenth as large as the risk associated with childbirth" (Henshaw, 1999).

In Massachusetts, abortion is legal until the 24th week of gestation. By state law (M.G.L. c.112, s.12S), before undergoing an abortion, a woman must sign an informed consent form prepared by the Massachusetts Department of Public Health (DPH). This form contains information about: pregnancy termination procedures, possible medical problems, and choices available other than pregnancy termination. Under the law (M.G.L. c.112, s.12M), pregnancy termination in the last trimester (7th to 9th month) is allowed only when medically necessary to save the life of the mother or when continuing the pregnancy will cause a substantial risk of harm to her physical or mental health.

Current state laws, (M.G.L. c.112, s.12F, previously discussed in this chapter in the section entitled "Pregnancy Options," and M.G.L. c.214, s.1B, regarding confidentiality and parent notification) permit a pregnant adolescent to obtain medical information, treatment, and diagnosis without permission from her parents or a guardian. However, M.G.L. c.112, s.12S includes specific provisions governing consent to abortion for persons under 18 years of age. In general, an abortion may be performed only with the consent of the minor and at least one parent. If there has been a divorce, the consent of the parent with custody is sufficient. If the parents are not available, the consent of the minor and a legal guardian is sufficient.

If an adolescent cannot obtain or does not want to request parental consent, she may seek authorization for an abortion from a Superior Court judge. The law requires the judge to grant the minor's petition for an abortion if she is determined to be mature and capable of giving "informed consent." If not, the judge must decide whether an abortion is in her best interest.

Attorneys in Massachusetts offer their services to minors seeking judicial consent through the Committee for Public Counsel Services (617-482-6212 or http://www.mass.gov/cpcs/) and the Women's Bar Association (617-973-6666 or http://www.womensbar.org). An attorney will arrange the court appointment and accompany the minor to court free of charge.

OTHER SEXUALITY ISSUES

Youth with Disabilities

Providing comprehensive sexuality education to children and youth with disabilities is both especially important and particularly challenging, requiring sensitivity to the needs and abilities of individual students and the concerns of parents/guardians.

The Surgeon General's Call to Action to Promote Sexual Health and Responsible Sexual Behavior (2001) makes specific mention of the needs of the developmentally, physically, and mentally disabled, noting that the sexuality and sexual needs of these populations "have often been ignored, or, at worst, exploited and abused." For additional discussion about bullying and abuse of youth with disabilities, see Chapter 13. Although some appropriate assistance has been developed, it is deemed to be "seriously underutilized," and development of additional materials and programs, as well as further research, is recommended.

As the National Information Center for Children and Youth with Disabilities (NICHCY) noted in a 1992 News Digest on the subject, "These individuals often have fewer opportunities to acquire information from their peers, have fewer chances to observe, develop, and practice appropriate social and sexual behavior, may have a reading level that limits their access to information, may require special materials that explain sexuality in ways they can understand, and may need more time and repetition in order to understand the concepts presented to them."

Recent research indicates that many youths with developmental disabilities are sexually active without their parents' knowledge and, because of inadequate education about sexuality and reproductive issues, are particularly vulnerable to sexual health risks, unwanted pregnancy, and sexual exploitation (Cheng & Udry, 2003).

With opportunities to learn about and discuss the many dimensions of human sexuality, young people with disabilities can learn to protect themselves from such risks, develop the necessary interpersonal skills to foster healthy relationships, and learn to take responsibility for their bodies and their actions.

Presenting information at an appropriate pace and with a tailored format is key, as is inclusion of information about how a specific physical disability affects expression of sexuality and participation in a sexual relationship. NICHCY suggests that health educators consider the following in tailoring sexuality education for students with disabilities:

- how the student's particular disability may affect his or her social-sexual development;
- how the disability affects the student's ability to learn information about sexual issues; and
- what additional information may need to be provided to address any specific characteristics of a particular disability.

The DPH Abstinence Education Project offers two brochures that may be helpful for educators and parents: *Sexuality and Youth with Disabilities: Tips for Parents and Caregivers of Youth with Disabilities* and *Prevent Sexual Exploitation: Tips for Parents and Caregivers of Youth with Disabilities.* Another helpful resource is Report on Sexuality Education for People with Disabilities (SIECUS, 2001), available online at http://www.siecus.org. For additional information, see Resources at the end of this chapter.

GLBT Youth

The acronym GLBT (also known as sexual minority) embraces an extremely diverse population that includes not only gay, lesbian, and bisexual youth, but also transgender/transsexual and inter-sex youth. The definitions below are from a glossary for school employees developed by the Safe Schools Coalition, an organization dedicated to reducing bias-based bullying and violence in schools and to helping schools better meet the needs of GLBT youth and children with GLBT parents/guardians. (See Resources at the end of the chapter.)

> ***Bisexual:*** Romantically and sexually attracted to people of both genders. Does not presume nonmonogamy (or, for that matter, *any* sexual activity). Some people self-identify as "bi" rather than "bisexual."

Cross-dressing: Wearing clothing most often associated (in one's culture and historical timeframe) with people of a different gender.

Gay: Preferred synonym for homosexual (grade-appropriate definitions shown below).

- Grades K–3: "A man who loves another man or a woman who loves another woman."
- Grades 4–8: "A man who gets strong crushes on other guys more often than on women, or who falls in love with a man. Or a woman who falls in love with another woman (but she might prefer to call herself lesbian than gay)."
- Grades 9–12: "A person who is romantically and sexually most attracted to people of his or her own gender. The term refers to people of any gender, but when possible, it's more respectful to use the terms gay *and* lesbian."

Gender identity: One's understanding or feeling about whether one is emotionally or spiritually male or female or both or neither. A person may be congruent (i.e., his/her gender identity and physical gender are consistent) or transsexual (born biologically one gender, but emotionally and spiritually the other) or not quite either one.

Gender role: One's gender expression and one's beliefs and feelings about the appropriate and/or comfortable expression of one's gender. To some degree, gender role is clearly learned (socially constructed and culture-specific). To some degree, people are probably biologically predisposed to be more "feminine" or "masculine."

Heterosexual: Clinical synonym for "straight" (grade-appropriate definitions shown below).

- Grades K–3: "A man who loves a woman or a woman who loves a man."
- Grades 4–8: "A man who gets strong crushes on women more often than on men, or who falls in love with a woman. Or a woman who falls in love with a man."
- Grades 9–12: "A person who is romantically and sexually most attracted to people of the other gender."

Homosexual: Avoid using this term; it is clinical, distancing, and archaic. Sometimes appropriate in referring to behavior (although "same-sex" is the preferred adjective). When referring to people, as opposed to behavior, "homosexual" is considered derogatory, and the terms "gay" and "lesbian" are preferred.

Inter-sexed or inter-sexual: An adjective to describe a person (referred to archaically as a "hermaphrodite") who was born with an anomaly of the reproductive system — with genitals or chromosomes that were not clearly male or female. At least 1 in 2,000 children is born with genitals that make it difficult for even an expert to determine their sex. Some doctors consider anomalies such as hypospadias (in which the urethral opening is somewhere other than the tip of the penis), which occurs in 1 of every 200 baby boys, to be inter-sexed conditions.

Lesbian: Preferred term for gay women. Many lesbians feel invisible when the term "gay" is used to refer to both men *and* women.

Sexual orientation: One's core sense of the gender(s) of people toward whom one feels romantically and sexually attracted; the inclination or capacity to develop intimate emotional and sexual relationships with people of the same gender, a different gender, or more than one gender. Doesn't presume sexual experience or activity (i.e., sexual minority (or GLBT) people are as capable as heterosexual people of choosing to abstain). To some degree, the qualities one finds attractive may be learned, probably in the first few years of life. However, there is growing evidence that people may be biologically (hormonally, genetically) predisposed to be

more attracted to one gender or another or to people of more than one gender. In all instances, use this term instead of “sexual preference” or other misleading terminology.

Sexual preference: Avoid this term; it implies a casual choice, which is rarely, if ever, the case. “Sexual orientation” is the correct term.

Transgender: An umbrella term increasingly preferred by people whose appearance, personal characteristics, or behaviors are gender role nonconforming, which includes individuals who might otherwise call themselves transsexual, cross-dressing or gender-bending. It is also preferred by some people who are emotionally *neither* sex or *both* sexes or whose gender role *expression* is significantly different from what society expects of people of their sex or which changes from time to time. Transgender people may be heterosexual, gay, lesbian, or bisexual. Some people self-identify as “trans” rather than “transgender.”

Transsexual: A person (pre-, post-, or non-operative) who is biologically one sex (at birth), but emotionally and spiritually another. Female-to-male transsexual (FTM) people are born with female bodies, but identify as male. Male-to-female transsexual (MTF) people are born with male bodies, but identify as female.

Transvestite: A person — not necessarily gay — who dresses in clothing most often associated with another gender. The increasingly preferred term is a person who cross-dresses.

Additional resources for understanding the terminology and manifestations of alternative sexuality, including the hand-out “Eleven Overlapping, Complex Aspects of Sexuality,” are available from the Safe Schools Coalition at http://www.safeschoolscoalition.org/ElevenAspectsofSexuality.pdf.

Note: Permission to use materials and information from the Safe Schools Coalition comes from Beth Reis, Public Health — Seattle & King County, and the Safe Schools Coalition, © 1990, 2004. The coalition can be reached at: Elizabeth.reis@metrokc.gov.

Common Problems

Coping with discrimination and stereotypes based on sexual orientation may be difficult for GLBT youth who are surrounded by images, expectations, and assumptions about the “normalcy” of heterosexuality versus the “unacceptability” of other sexual orientations. Often the problems experienced go beyond being treated as outside the norm. GLBT youth also frequently cope with ridicule, abuse, and violence, usually from their peers but sometimes from their families as well. As a result, GLBT youth often suffer from low self-esteem and depression and are more likely than other teens to attempt suicide and engage in early and/or high-risk sexual behavior. Specific information about the risk behaviors associated with GLBT or sexual minority youth is collected by the Massachusetts Youth Risk Behavior Survey. For the most current information, go to http://www.doe.mass.edu/cnp/hprograms/yrbs/.

Advocates for Youth notes the following:

- After coming out to their family or being discovered, many GLBT youth are thrown out of their homes, mistreated, or made the focus of the family's dysfunction (Savin-Williams, 1994).
- Service providers estimate that 25% to 40% of homeless youth may be GLBT. These rates may be conservative because many GLBT youth hide their orientation out of fear (Ryan & Futterman, 1998).
- In one nationwide survey about experiences at school, over 83% of GLBT students reported verbal harassment, 74% of transgender students reported sexual harassment, and

over 21% of all GLBT youth reported being punched, kicked, or injured with a weapon because of their sexual orientation (Kosciw & Cullen, 2001).

What Schools Can Do

Stereotyping is one of the problems that makes school life very difficult for GLBT youth. Given this, it is very important for educators and health personnel to treat these students as individuals and to understand the unique issues with which they are grappling. The Gay, Lesbian, Bisexual, and Transgender Youth Support (GLYS) Project has developed a number of tools that may be helpful for school health personnel in providing support and assistance for GLBT youth and their families. These include a number of index cards containing tips about how to stop anti-gay bullying or homophobic comments in a youth-centered environment and how to support transgender youth.

The Project has also compiled a referral resource: the *Health and Human Service Resource List: A Guide to Agencies Providing Culturally Competent Services to GLBT Youth and Their Families in Massachusetts,* which includes cross-referenced listings of more than 75 youth-serving health and human service agencies throughout Massachusetts that have been trained by GLYS and are committed to providing culturally-competent services to GLBT youth. These tools are available online at http://www.hcsm.org/glys/glystools.htm. For more information about the GLYS Project, see Resources at the end of this chapter.

In order to effectively address the needs of GLBT youth, efforts should be made to normalize the full range of sexual identities. An environment that is perceived to be accessible, nonjudgmental, and inclusive may increase young people's comfort level and may make it easier for them to seek care. Research indicates that targeted interventions to prevent risky behavior can be helpful. One study of GLBT youth who received gay-sensitive HIV prevention education in school showed that they engaged in less risky sexual behavior than did the control group (Blake et al., 2001).

In addition, anti-bullying and anti-discrimination education for students and staff may assist in creating a climate of safety, respect, and tolerance (see Chapters 11 and 13). All youth, regardless of gender or sexual identity, should be made aware of the full range of issues, resources, and services relating to sexuality and sexual development. When appropriate, referrals to education, counseling, and support services are recommended.

Chapter 622 (M.G.L., Acts of 1971, Chapter 76, Section 5) protects students from discrimination in school based on sexual orientation, including prohibitions against verbal or physical harassment in school; denial or discouragement from exercising their right to form a school-based Gay/Straight Alliance; exclusion from school courses, activities, or clubs; being treated unfairly or differently from other students; and being unable to get assistance from school faculty or administration in dealing with homophobic harassment or discrimination based on actual or perceived sexual orientation. For a more complete explanation of the law, contact the Massachusetts Department of Education (DOE) at 781-338-3000.

In 1993, the Massachusetts Board of Education voted to adopt the following steps to improve the safety of schools and school-based support services for these students:

1. **Schools are encouraged to develop policies protecting gay and lesbian students from harassment, violence, and discrimination.**
   In order to guarantee the rights of all students to an education and to prevent dropping out, school policies should include sexual orientation within anti-discrimination policies, as well as within policies which guarantee students' rights to an education and to equal access to school courses and activities.

In order to make schools safe for all students and to prevent violence and harassment, schools should amend existing anti-harassment policies to include prohibiting violence, harassment, and verbal abuse directed against gay and lesbian students and those perceived to be gay or lesbian. Incidents of anti-gay abuse should be treated with the same discipline procedures as other incidents involving bias and hatred.

2. **Schools are encouraged to offer training to school personnel in violence prevention and suicide prevention.**
   In order to prevent violence in schools, teachers, guidance counselors, and all school staff should be provided with training in violence and suicide prevention, including the particular issues/concerns of gay and lesbian students.

3. **Schools are encouraged to offer school-based support groups for gay, lesbian, and heterosexual students.**
   In order to support students who are isolated and may be at high risk for suicide, high schools should establish support groups where all students, gay, lesbian, and heterosexual, may meet on a regular basis to discuss gay and lesbian youth issues in a safe and confidential environment. These gay/heterosexual alliances should be open to all students and should have a faculty advisor and support from the school administration.

4. **Schools are encouraged to provide school-based counseling for family members of gay and lesbian students.**
   School systems should extend existing student support teams, guidance services, and partnerships with community agencies to provide counseling services to gay and lesbian students and their families.

For further information on making schools safe for GLBT students and supporting their emotional health and well-being, please refer to Chapters 11 and 13 of this manual and to the Department of Education document *Gay/Straight Alliances: A Student Guide,* available online at: http://www.doe.mass.edu/cnp/gsa/.

Cultural Diversity

Massachusetts has become increasingly multicultural. School systems are educating students from around the world. Just as age often determines how we communicate with children about sexuality, differences in ethnicity, language, and cultural experience can have equally vast influences on how young people think about sexual development and experience. (See Chapter 16 for discussion of Immigrant and Refugee health care issues.) Some important factors to consider are: language barriers, sources of information, immigration status, access to health care, and cultural values.

Families who have been in this country a short time, or those who live and work in relatively insulated communities, are more likely to think about sexuality from the perspective of their country of origin. For example, Massachusetts is now home to many families emigrating from countries where young girls are expected to refrain from any sexual behavior before marriage. Teaching about contraception or STDs may be considered inappropriate by parents who believe that their children will become sexually active as a result of education. It is important that health educators be sensitive to both the cultural values of families and the needs of students who may be experiencing difficulty in reconciling their own values and beliefs about sexuality with those of their parents and their communities.

SUMMARY

Schools have a responsibility to promote responsible decision making, healthy relationships, and tolerance. Partnering with families and communities, schools are encouraged to implement a comprehensive and culturally-sensitive formal health curriculum for reproductive health and sexuality that is age appropriate and is accompanied by support systems for students, staff, and families. Because school attendance has been identified as a protective factor against risky sexual behavior, schools should also make every possible effort to retain and assist students, including those who are pregnant or parenting, and to create a safe atmosphere for students of all sexual orientations.

RESOURCES: CURRICULA AND PROGRAM INFORMATION

Advocates for Youth
Science & Success—Programs That Work to Prevent Teen Pregnancy, HIV & Sexually Transmitted Infections
Website: http://www.advocatesforyouth.org/programsthatwork/index.htm
In its *Science & Success* series, Advocates for Youth identifies evaluated programs that have been proven to reduce teenage pregnancies and/or sexually transmitted infections (STIs) or to cause at least two beneficial changes in sexual risk behaviors. The full 2003 Study Report is available online at the Web page shown above.

Child Trends
What Works Guide to Effective Programs
Website: http://www.childtrends.org/what_works/youth_development/table_adrehealth.asp
Child Trends is a nonprofit, nonpartisan research organization that conducts research and provides science-based information to improve the decisions, programs, and policies that affect children and their families. It provides research briefs and tables offering essential guidance about the relative effectiveness of interventions targeting adolescent reproductive health.

National Campaign to Prevent Teen Pregnancy
1776 Massachusetts Avenue NW, Suite 200
Washington, DC 20036
Phone: 202-478-8500 or 202-478-8566 (publication inquiries)
E-mail: campaign@teenpregnancy.org
Website: http://www.teenpregnancy.org
The campaign operates the project Putting What Works to Work (PWWTW), funded in part by the Centers for Disease Control and Prevention. Through PWWTW, the Campaign translates research on teen pregnancy prevention and related issues into user-friendly materials for practitioners, policy makers, and advocates. Publications of the PWWTW project include:

- *Not Yet: Programs to Delay First Sex Among Teens.* (2004). Produced in partnership with Child Trends, “Not Yet” provides detailed descriptions of prevention programs that have been shown through careful research to result in delayed first sex among teens. The publication provides detailed descriptions of program curriculum, costs, and evaluation results.
- *Making the List: Understanding, Selecting, and Replicating Effective Teen Pregnancy Prevention Programs*. (2004). *Making the List* helps those working with young people to navigate lists of effective teen pregnancy prevention programs and make informed decisions about how to select the best one(s) for a particular community and population.
- *No Time to Waste: Programs to Reduce Teen Pregnancy Among Middle School-Aged Youth*. (2004). Produced in partnership with Child Trends, *No Time to Waste* provides detailed descriptions of those programs for middle-school-age youth that have been shown through careful research to have a positive impact on adolescent sexual behavior. The publication provides detailed descriptions of program curriculum, costs, and evaluation results.
- *A Good Time: After-School Programs to Reduce Teen Pregnancy.* (2004). Produced in partnership with Child Trends, *A Good Time* is a new report that provides detailed descriptions of those after-school programs that have been shown through careful research to have a positive impact on adolescent behavior.
- *Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy.* (2001). *Emerging Answers* is a comprehensive review of evaluation research that offers practitioners and policy makers the latest information on "what works" to prevent teen pregnancy.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS

AIDS Action Committee
294 Washington Street, 5th Floor
Boston, MA 02108

Phone: 617-437-6200
Fax: 617-437-6445
TTY: 617-437-1394
E-mail: info@aac.org
Website: http://www.aac.org
AIDS Action Hotline 800-235-2331 operates Monday through Friday, 9 am to 9 pm, and Saturday, 10 am to 2 pm.

Center for Young Women's Health
Children's Hospital
333 Longwood Avenue, 5th Floor
Boston, MA 02115
Phone: 617-355-2994
Fax: 617-730-0192
E-mail: cywh@childrens.harvard.edu
Website: http://www.youngwomenshealth.org
The Center offers health information on over 100 topics, clinical care, and a variety of programs and services designed to educate and empower girls and young women aged 12–22. Fact Sheets are available for download on topics such as first pelvic exam, STDs, etc. The site also offers materials developed in conjunction with Harvard Medical School's Center for Excellence in Women's Health, including a curriculum for the Teen Safe Initiative.

Resource:

- The Teen Safe Initiative, which deals with healthy and safe relationships, safety on the Internet, and safety on the street, is available in PDF format at the website shown above. Look for it in the area for educators and health professionals.

The Committee for Public Counsel Services
44 Bromfield Street
Boston, Massachusetts 02108
Phone: 800-882-2095 or 617-482-6212
Website: http://www.mass.gov/cpcs/

Gay, Lesbian, Bisexual, and Transgender
Youth Support (GLYS) Project
942 W. Chestnut Street
Brockton, MA 02301
Phone: 508-583-2250
Website: http://www.hcsm.org/glys
The mission of the GLYS Project is to ensure safe and supportive communities for gay, lesbian, bisexual, transgender, and questioning (GLBTQ) youth. GLYS provides training and ongoing support for educators and health and human service providers to assist them in implementing welcoming and appropriate programs, policies, and services for these young people and their families. The site offers an extensive list of resources, including assessment tools and tools for providing support and fact sheets.

Healthy Futures Program
1855 Dorchester Avenue
Dorchester, MA 02124
Phone: 617-929-1037
Fax: 617-436-5141
E-mail: contact@healthy-futures.org
Website: http://www.healthy-futures.org
Healthy Futures is a federally-funded health program that educates teens in the areas of sexuality, healthy relationships, and self-respect and also empowers them to avoid the social, psychological, and health consequences of early sexual activity. The program is offered at no cost to schools and meets many of the requirements of the Massachusetts Comprehensive Health Curriculum Framework, specifically within the Reproduction/Sexuality and Interpersonal Relationships modules. Healthy Futures also provides parenting programs and a website for teens (see DoinitRight.org under Resources: Online Information for Teens).

Massachusetts Alliance on Teen Pregnancy
105 Chauncy Street, 8th Floor
Boston, MA 02111
Phone: 617-482-9122
Fax: 617-482-9129
Website: http://www.massteenpregnancy.org
The Massachusetts Alliance on Teen Pregnancy provides statewide leadership to prevent adolescent pregnancy and to promote quality services for pregnant and parenting teens and their children through policy analysis, education, research, and advocacy.

Massachusetts Department of Education (DOE)
Health, Safety and Student Support Services
350 Main Street
Malden, MA 02148-5023
Phone: 781-338-3000
Website: http://www.doe.mass.edu/ssce

HIV/AIDS Program
Phone: 781-338-6331
Website: http://www.doe.mass.edu/cnp/hprograms/aids.html

The Safe Schools Program for Gay & Lesbian Students
Phone: 781-338-6330
Website: http://www.doe.mass.edu/cnp/safe/ssch.html

Massachusetts Department of Public Health (DPH)
Bureau of Family and Community Health
250 Washington Street
Boston, MA 02108

Division of STD Prevention
Bureau of Communicable Disease Control
State Laboratory Institute
305 South Street
Jamaica Plain, MA 02130
Phone: 866-749-7122
Fax: 617-983-6962
Website: http://www.mass.gov/dph/cdc/std/education/stdaids.htm
The Division of STD Prevention has as its primary goals the reduction and prevention of the incidence of sexually transmitted diseases, including HIV infections. To accomplish this, the Division works to promote healthy sexual behaviors among sexually active teens and adults through targeted and population-based health education initiatives; improve STI surveillance; maintain access to STI clinical services through state supported STI clinics; maintain state-of-the-art laboratory for STI clinical testing; improve partner notification services; and educate health providers regarding STI trends, standards of care, disease reporting requirements, and partner notification services.

Family Planning Program (Contacts to family planning clinics)
Phone: 877-414-4447 or 617-624-6060
Fax: 617-624-6062
Website: http://www.mass.gov/dph/fch/famplan.htm
Family planning is an integral component of the Department of Public Health's efforts to prevent unintended pregnancies and STDs including HIV/AIDS, reduce infant mortality and morbidity, and improve the health of adolescents. Free brochures such as “Choosing a Birth Control Method” and other resources are available online. The Family Planning Program promotes and provides comprehensive family planning services, which include clinic-based services and may include community education and outreach. The program has over 75 sites statewide serving teens. For a list of family planning centers, go to http://www.mass.gov/dph/fch/fpalist.htm.

HIV/AIDS Bureau
Phone: 617-624-5300
Fax: 617-624-5399
TTD/TTY: 617-624-5387
Website: http://www.mass.gov/dph/aids/hivaids.htm
The HIV/AIDS Bureau seeks to accomplish the following: increase the number of persons (at risk) who know their HIV status, decrease the number of new HIV infections, and improve health and quality of life for infected persons and high-risk uninfected persons. The Bureau provides counseling, testing services, training, technical assistance, and educational materials. It also supports education programming across the Commonwealth. Online resources include an *HIV Resource Guide,* created to assist providers in making appropriate referrals for individuals in need of HIV, Hepatitis, STD and/or substance use-related screening, testing, treatment, and other services.

Office Of Adolescent Health And Youth Development
Phone: 617-624-6060
Website: http://www.mass.gov/dph/fch/adhealth.htm

Massachusetts EC Network
c/o NARAL Pro-Choice Massachusetts
41 Winter Street, Suite 65
Boston, MA 02108-4722
Phone: 617-556-8800
Fax: 617-338-2532
Website: http://www.massECnetwork.org
The Massachusetts Emergency Contraception Network provides a forum for those interested in improving access to and public knowledge of emergency contraception — including medical providers, community organizations, and government agencies — to share ideas, coordinate resources, and maximize the impact of its work on the shared public health goal of reducing unintended pregnancies. The EC Network website provides referrals to health care providers, family planning clinics, and pharmacists who can provide emergency contraception.

Planned Parenthood League of Massachusetts
1055 Commonwealth Avenue
Boston, MA 02215-1001
Phone: 617-616-1660
Fax: 617-616-1665
TTY: 617-787-3276
Website: http://www.plannedparenthood.org/pp2/portal/

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS

Abstinence Clearinghouse
Website: http://www.abstinence.net
The Clearinghouse is a nonprofit educational organization that promotes the appreciation for and practice of sexual abstinence through distribution of age-appropriate, factual, and medically-accurate materials.

Advocates for Youth
2000 M Street NW, Suite 750
Washington, DC 20036
Phone: 202-419-3420
Fax: 202-419-1448
E-mail: questions@advocatesforyouth.org
Website: http://www.advocatesforyouth.org
A wide variety of information and resources is available onsite, including fact sheets, pamphlets written by and for youth, sexuality education program evaluations, and more. Many reports and articles are available

free online. *Transitions,* the organization's quarterly newsletter for professionals and advocates, updates readers on a variety of health and sexuality issues facing adolescents — legislative issues, evaluated programs, services, and new initiatives. Each edition summarizes current research on adolescent reproductive and sexual health. Advocates also operates a number of special interest websites, including sites for gay, lesbian, bisexual, transgender, and questioning (GLBTQ) youth; Latino GLBTQ youth; HIV-positive youth; HIV peer educators; and young women of color.

AIDSinfo
P.O. Box 6303
Rockville, MD 20849-6303
Phone: 800-448-0440
Fax: 301-519-6616
TTY: 888-480-3739
E-mail: ContactUs@aidsinfo.nih.gov
Website: http://aidsinfo.nih.gov
The mission of AIDSinfo is to offer the latest federally approved information on HIV/AIDS clinical research, treatment, and prevention and also medical practice guidelines for consumers and health care providers.

American Social Health Association (ASHA)
P.O. Box 13827
Research Triangle Park, NC 27709
Phone: 919-361-8400
Fax: 919-361-8425
Website: http://www.ashastd.org
National STD/AIDS Hotline at 800-342-AIDS (800-342-2437)
ASHA is a nongovernmental resource that develops and delivers accurate, medically reliable information about STDs. Information on its site is based upon well-researched and documented medical facts and follows approved treatment guidelines as recommended by the Centers for Disease Control and Prevention.

American Society for Reproductive Medicine (ASRM)
1209 Montgomery Hwy.
Birmingham, AL 35216-2809
Phone: 205-978-5000 ext. 106
Fax: 205-978-5005
E-mail: pmccormack@asrm.org
Website: http://www.asrm.org
This organization includes a special interest group on Pediatric and Adolescent Gynecology (PAGSIG).

Association of Reproductive Health Professionals (ARHP)
Adolescent Health Resource Center
2401 Pennsylvania Avenue NW, Suite 350
Washington, DC 20037
Phone: 202-466-3825
Fax: 202-466-3826
Website: http://www.arhp.org/healthcareproviders/resources/rap/index.cfm
ARHP is a multidisciplinary association of professionals who provide reproductive health services or education, conduct reproductive health research, or influence reproductive health policy. The Adolescent Health Resource Center is a website created by ARHP to provide resources to health care providers and the general public, in order to strengthen and improve adolescent reproductive health.

Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion
Division of Reproductive Health
4770 Buford Highway NE, Mail Stop K-22
Atlanta, GA 30341-3717
Phone: 770-488-5200

E-mail: ccdinfo@cdc.gov
Website: http://www.cdc.gov/nccdphp/drh

Unintended and Teen Pregnancy Prevention Program
Phone: 770-488-6260

Child Trends
4301 Connecticut Avenue NW, Suite 100
Washington, DC 20008
Phone: 202-572-6000
Fax: 202-362-8420
Website: http://www.childtrends.org
Child Trends is a nonprofit, nonpartisan research organization dedicated to improving the lives of children by conducting research and providing science-based information to improve the decisions, programs, and policies that affect children and their families. Its research areas include education, youth development, and adolescent sexual behavior. Its "What Works: A Guide to Effective Programs" provides information about the effectiveness of interventions targeting adolescent reproductive health (see Resources: Curricula and Program Information above).

Child Welfare Information Gateway
Children's Bureau/ACYF
1250 Maryland Avenue, SW, 8th Floor
Washington, DC 20024
Website: http://www.childwelfare.gov/
Child Welfare Information Gateway is a service of the Children's Bureau, Administration for Children and Families, and the U.S. Department of Health and Human Services. It provides access to print and electronic publications, websites, and online databases covering a wide range of topics from prevention to permanency, including child welfare, child abuse and neglect, adoption, search and reunion, and more.

Consortium for Emergency Contraception
8930 Camp Road
Welcome, MD 20693
Website: http://www.cecinfo.org
The mission of the Consortium is to expand access to and ensure safe and locally appropriate use of emergency contraception worldwide, within the broader context of family planning and reproductive health.

Publication: *Emergency Contraceptive Pills: A Resource Packet for Health Care Providers and Program Managers.* (Much of the content is available online.)

ETR Associates
4 Carbonero Way
Scotts Valley, CA 95066
Phone: 831-438-4060
Website: http://www.etr.org
ETR (Education, Training, and Research) Associates is a nonprofit organization that provides educational resources, training, and research in health promotion, with an emphasis on sexuality and health education. Their website provides information on reproductive health, high-risk sexual behavior, STD/HIV/AIDS prevention, and comprehensive school health. ETR's Research Department conducts a wide range of qualitative and quantitative studies, including both local and statewide surveys of adolescent risk-taking and healthful behaviors. Their Training Department administers the Resource Center for Adolescent Pregnancy Prevention (ReCAPP), an online resource that provides practical tools and information to enable teachers and health educators to most effectively reduce teen sexual risk-taking behaviors.

Gay and Lesbian Medical Association (GLMA)
459 Fulton Street, Suite 107
San Francisco, CA 94102
Phone: 415-255-4547
Fax: 415-255-4784

E-mail: info@glma.org
Website: http://www.glma.org
GLMA is a national organization committed to ensuring equality in health care for gay, lesbian, bisexual, and transgender (GLBT) individuals. It develops and promulgates standards for competency in the specific issues related to GLBT health and is a resource for individuals seeking information and research in this area.

Girls Incorporated
120 Wall Street
New York, NY 10005-3902
Phone: 800-374-4475
Website: http://www.girlsinc.org
Girls Incorporated is a national youth organization that provides educational programs. They have developed research-based and informal education programs that address pregnancy prevention and adolescent health. The website provides information about the organization's Preventing Adolescent Pregnancy program. This program goes beyond traditional sexuality education to focus on girls' motivation to avoid early pregnancy.

Guttmacher Institute
120 Wall Street, 21st Floor
New York, NY 10005
Phone: 800-355-0244 or 212-248-1111
Fax: 212-248-1951
or
1301 Connecticut Avenue NW, Suite 700
Washington, DC 20036
Phone: 877-823-0262 or 202-296-4012
Fax: 202-223-5756
E-mail: info@guttmacher.org
Website: http://www.guttmacher.org
The Guttmacher Institute (formerly the Alan Guttmacher Institute) is a nonprofit organization focused on sexual and reproductive health research, policy analysis, and public education. The Institute publishes *Perspectives on Sexual and Reproductive Health, International Family Planning Perspectives, The Guttmacher Policy Review,* and special reports on topics pertaining to sexual and reproductive health and rights.

Healthy Teen Network, Inc.
(Formerly National Organization on Adolescent Pregnancy, Parenting and Prevention, Inc., NOAPPP)
509 2nd Street, NE
Washington, DC 20002
Phone: 202-547-8814
Fax: 202-547-8815
E-mail: HealthyTeens@HealthyTeenNetwork.Org
Website: http://www.HealthyTeenNetwork.org
Healthy Teen Network's mission is to provide leadership, education, information, training, advocacy, resources, and support to professional individuals and organizations in the field of adolescent health, with an emphasis on teen pregnancy, pregnancy prevention, and teen parenting. The organization maintains an electronic resource clearinghouse of research, programs, and other information on these topics. It also uses research and program evaluation to develop and promote science-based programs and policy.

Intersex Society of North America (ISNA)
979 Golf Course Drive #282
Rohnert Park CA 94928
Website: http://www.isna.org
The Intersex Society of North America (ISNA) is the premier resource for people seeking information and advice about atypical reproductive anatomies and disorders of sexual differentiation (DSDs).

Kaiser Family Foundation (KFF)
2400 Sand Hill Road

Menlo Park, CA 94025
Phone: 800-656-4533 or 650-854-9400
Fax: 650-854-4800
Website: http://www.kff.org
KFF is a is a non-profit, private operating foundation focusing on the major health care issues facing the U.S., with a growing role in global health.

National Campaign to Prevent Teen Pregnancy
1776 Massachusetts Avenue NW, Suite 200
Washington, DC 20036
Phone: 202-478-8500 or 202-478-8566 (publication inquiries)
E-mail: campaign@teenpregnancy.org
Website: http://www.teenpregnancy.org
The campaign operates the project Putting What Works to Work (PWWTW), funded in part by the Centers for Disease Control and Prevention. Through PWWTW, the Campaign translates research on teen pregnancy prevention and related issues into user-friendly materials for practitioners, policy makers, and advocates. See Resources: Curricula and Program Information above for Campaign publications that detail evaluated curricula and interventions. Other publications include:

- *Progress Pending: How to Sustain and Extend Recent Reductions in Teen Pregnancy Rates.* Explores why certain areas and groups continue to have high rates and what can be done to extend successes to these areas.
- *Families Matter: a Research Synthesis of Family Influences on Adolescent Pregnancy.* Synthesizes research on the relationship between adult/parent actions and sexual risk-taking among teenagers.

National Education Association Health Information Network (NEAHIN)
Can We Talk? Program
1201 16th Street NW, Suite 521
Washington, DC 20036
Phone: 202-822-7570
Website: http://www.neahin.org/canwetalk/
Can We Talk? is a parent education program designed to help bridge the gulf that often exists between schools, parents, and their children around difficult topics related to sexuality and health.

National Family Planning and Reproductive Health Association (NFPRHA)
1627 K Street NW, 12th Floor
Washington, DC 20006
Phone: 202-293-3114
E-mail: info@nfprha.org
Website: http://www.nfprha.org
NFPRHA is a nonprofit membership organization which assures access to voluntary, comprehensive, and culturally-sensitive family planning and reproductive health care services. The website offers information on legislative affairs, fact sheets on family planning, articles on reproductive health, monthly facts on reproductive health, reports, publications, and links to related sites.

National School Health Education Clearinghouse (See SIECUS)

National Women's Health Information Center
8550 Arlington Boulevard, Suite 300
Fairfax, VA 22031
Phone: 800-994-9662
TDD: 888-220-5446
Website: http://www.4woman.gov
The federal government source for women's health information, sponsored by the Department of Health and Human Services.

National Sexuality Resource Center (NSRC)
2017 Mission Street, Suite 300
San Francisco, California 94110
Phone: 415-437-5121
Fax: 415-621-3783
E-mail: nsrcinfo@sfsu.edu
Website: http://nsrc.sfsu.edu
NSRC is a project of the Human Sexuality Studies Program at San Francisco State University. It gathers and disseminates the latest accurate information and research on sexual health, education, and rights.

Parents, Families & Friends of Lesbians & Gays (PFLAG)
1726 M Street NW, Suite 400
Washington, DC 20036
Phone: 202-467-8180
Fax: 202-467-8194
E-mail: info@pflag.org
Website: http://www.pflag.org
PFLAG is a national support, education, and advocacy organization for gay, lesbian, bisexual, and transgender (GLBT) people and their families, friends, and allies.

Physicians for Reproductive Choice and Health (PRCH)
Phone: 646-366-1890
Website: http://www.prch.org
PRCH is a national network of pro-choice physicians who are committed to providing and advocating high-quality care for patients.

Materials:

- Minors' Rights Cards
- *Minors' Access to Confidential Reproductive Health Care in Massachusetts: A Practitioner's Resource* (2003).

Planned Parenthood Federation of America
434 West 33rd Street
New York, NY 10001
Phone: 212-541-7800
Fax: 212-245-1845
Website: http://www.plannedparenthood.org/pp2/portal/
Founded by Margaret Sanger in 1916 as America's first birth control clinic, Planned Parenthood provides reproductive health care and maternal and child care services.

Safe Schools Coalition (SSC)
Public Health — Seattle & King County
MS: NTH-PH-0100
10501 Meridian Avenue N.
Seattle, WA 98133
Phone: 206-632-0662 x49
E-mail: questions@safeschoolscoalition.org
Website: http://www.safeschoolscoalition.org
SSC works to reduce bias-based bullying and violence in schools and to help schools better meet the needs of sexual minority youth and children with sexual minority parents/guardians, by conducting and disseminating research and providing resources for schools, students, families, and advocates.

SIECUS (Sexuality Information and Education Council of the United States)
130 West 42nd Street, Suite 350
New York, NY 10036-7802
Phone: 212-819-9770
Fax: 212-819-9776
E-mail: siecus@siecus.org

Website: http://www.siecus.org
The *Guidelines for Comprehensive Sexuality Education: Grades K through 12,* produced by The National Guidelines Task Force convened by SIECUS, are a framework designed to promote and facilitate the development of comprehensive sexuality education programs nationwide. The *Guidelines* include curricula, textbooks, and programs, as well as evaluations of existing programs. The second edition of the *Guidelines,* produced in 1996, is available for viewing on the SIECUS website. SIECUS has also produced a video, *Sexuality Education for the 21st Century,* to help people better understand the concept of comprehensive sexuality education. In addition, the SIECUS *Community Action Kit* includes information on building support for comprehensive sexuality education. All are available through the SIECUS Publications Department (see contact information above). Other SIECUS projects include:

- SIECUS School Health Project (http://www.siecus.org/school): A project, sponsored by a five-year cooperative agreement with the Centers for Disease Control and Prevention's (CDC) Division of Adolescent and School Health (DASH). Its aim is to strengthen the capacity of state and local education, health, and social service agencies to help young people at risk for HIV infection, sexually transmitted diseases (STDs), unintended pregnancy, and other important health problems. As part of this project, SIECUS operates the National School Health Education Clearinghouse, which provides access to state and local policies, sexual health promotion programs, national guidelines, information on curricula, and links to additional information on the Web.
- *Developing Guidelines for Comprehensive Sexuality Education* (2000): A "how to" handbook for educators, providers, policy makers, and activists that provides a step-by-step outline on developing guidelines for comprehensive sexuality education programs. The handbook includes the components of comprehensive sexuality education, the steps and processes involved in developing a guidelines project, suggestions for using the guidelines, suggestions for distribution and advocacy, suggestions for coalition building, and resources. http://www.siecus.org/pubs/pubs0004.html.

RESOURCES: GLBT YOUTH

BAGLY INC. (The Boston Alliance of Gay, Lesbian, Bisexual & Transgender Youth)
P.O. Box 960814
Boston, MA 02196-0814
Phone: 617-227-4313
Fax: 617-227-3266
Website: http://www.bagly.org
BAGLY is a youth-led, adult supported organization that creates, sustains, and advocates for programs, policies, and services for the Gay, Lesbian, Bisexual, and Transgender youth community.

Bodies Like Ours
P.O. Box 362
Glen Gardner, NJ 08826
Website: http://www.bodieslikeours.org
Intersex information and peer support.

Boston GLASS Community Center (Gay and Lesbian Adolescent Social Services)
93 Massachusetts Avenue
Boston, MA 02115
Phone: 617-266-3349
Website: http://www.bostonglass.org
Boston GLASS is a drop-in center for gay, lesbian, bisexual, transgender, and questioning young people between the ages of 13 and 25.

Gay, Lesbian, Bisexual, and Transgender Helpline
c/o Fenway Community Health Center
7 Haviland Street
Boston, MA 02115
Phone: 617-267-9001
Helpline: 888-340-4528 or 617-267-9001 (7 days, 6–11 pm)

Gay, Lesbian, Bisexual, and Transgender
Youth Support (GLYS) Project
942 W. Chestnut Street
Brockton, MA 02301
Phone: 508-583-2250
Website: http://www.hcsm.org/glys
GLYS provides training and ongoing support for educators and health and human service providers to assist them in implementing programs, policies, and services for gay, lesbian, bisexual, transgender, and questioning (GLBTQ) youth.

GLASS (Gay, Lesbian and Straight Society)
c/o Becky Lockwood
FCAC Youth Program
393 Main Street
Greenfield, MA 01301
Phone: 413-774-7028

GLBT Youth Group Network of Massachusetts
Phone: 877-GAY-TEEN (877-429-8336) or 617-227-4313
TTY: 617-983-9845
A statewide support and development partnership of community-based direct service organizations, offering services, support, and opportunities for GLBT youth. To find resources in specific towns or cities, call the number above or access the clickable list at http://www.bagly.org/network.

Gay, Lesbian and Straight Education Network (GLSEN)
National headquarters
121 West 27th Street, Suite 804
New York, New York 10001
Phone: 212-727-0135
E-mail: glsen@glsen.org
Website: http://www.glsen.org/cgi-bin/iowa/all/home.html
GLSEN is a national education organization focused on ensuring safe schools for all students.

Massachusetts Chapter (GLSEN Boston)
29 Stanhope Street
Boston, MA 02116
Phone: 617-536-9669
Fax: 617-236-0334
E-mail: glsenboston@glsenboston.org
Website: http://www.glsenboston.org/

International Foundation for Gender Education (IFGE)
P.O. Box 540229
Waltham, MA 02154-02454
Phone: 781-899-2212
Fax: 781-899-5703
E-mail: info@ifge.org
Website: http://www.ifge.org
IFGE is an advocacy organization that supports the freedom of gender expression, understanding, and acceptance for all people.

Latino GLBTQ Youth (Advocates for Youth)
Website: http://www.ambientejoven.org
An online resource center for Latino GLBTQ youth.

Massachusetts Department of Education (DOE)
Safe Schools Program for Gay and Lesbian Students
Health, Safety and Student Support Services
350 Main Street
Malden, MA 02118
Phone: 781-388-6330
Website: http://www.doe.mass.edu/cnp/safe/ssch.html
Responding to evidence indicating increased levels of suicidality and other risk behaviors among gay and lesbian students, the Safe Schools Program provides a range of services designed to help schools implement Chapter 76, Section 5 (the Massachusetts Student Anti-Discrimination Law), the State Board of Education's Recommendations on the Support and Safety of Gay and Lesbian Students, and the Access to Equal Educational Opportunity Regulations (603 CMR 26.00).

National Youth Advocacy Coalition (NYAC)
1638 R Street, NW
1711 Connecticut Avenue NW, Suite 206
Washington, DC 20009
Phone: 800-541-6922 or 202-319-7596
Fax: 202-319-7365
Website: http://www.nyacyouth.org
A national GLBTQ advocacy organization.

A Slice of Rice (See Boston GLASS Community Center)
(A support group for GLBT Asian, Asian-American, and Pacific Islander youth.)

The Trevor Helpline
Phone: 866-4U-TREVOR (866-488-7386)
National 24-hour, toll-free suicide prevention hotline aimed at gay and questioning youth.

YouthResource.com
Website: http://www.youthresource.com
Site for gay, lesbian, bisexual, transgender, and questioning (GLBTQ) youth.

RESOURCES: ONLINE INFORMATION FOR TEENS

Adolescence Directory On-Line (ADOL)
Website: http://education.indiana.edu/cas/adol/adol.html
ADOL is an electronic guide to information on adolescent issues. It is a service of the Center for Adolescent Studies at Indiana University. Educators, counselors, parents, researchers, health practitioners, and teens can use ADOL to find Web resources for topics such as sexuality and other health related concerns.

Center for Young Women's Health
Website: http://www.youngwomenshealth.org
Health information, including FAQs, guides, quizzes, and moderated chats.

Coalition for Positive Sexuality (CPS)
P.O. Box 77212
Washington, DC 20013-7212
Phone: 773-604-1654
Website: http://www.positive.org
A grassroots, nonprofit, activist organization dedicated to providing teens with candid sex education materials.

Doin' it Right
Website: http://www.doinitright.org

Doin' It Right is the teen website of Healthy Futures, a sexual health program in Eastern Massachusetts serving youth and adults who care about them. The site offers information, advice, and a place to share experiences.

GirlsHealth.gov
Website: http://www.GirlsHealth.gov
Developed by the Office on Women's Health in the U. S. Department of Health and Human Services, this website seeks to promote healthy, positive behaviors in girls between the ages of 10 and 16. The site gives girls reliable, useful information on the health issues they will face as they become young women and tips on handling relationships with family and friends, both at school and at home.

Go Ask Alice!
Website: http://www.goaskalice.columbia.edu
Go Ask Alice is a Q & A Internet service that addresses sexuality and health related issues. The site is produced by Columbia University's Health Education Program.

iwannaknow
Website: http://www.iwannaknow.org
Developed by The American Social Health Association, this website answers questions about teen sexual health and sexually transmitted diseases.

Kids Health
Website: http://www.kidshealth.org
Developed by The Nemours Foundation's Center for Children's Health Media, this website provides children, adolescents, and parents with age-appropriate health and sexuality information.

Mysistahs.org
Website: http://www.mysistahs.org
Mysistahs.org is a website created by and for young women of color to provide information and offer support on sexual and reproductive health issues.

Not Me, Not Now
Website: http://www.notmenotnow.org
An interactive site for teens designed to reinforce the abstinence message, Not Me, Not Now was created by Monroe County, New York, as part of its adolescent pregnancy prevention communication program.

Say Not Yet to Sex
Website: http://www.saynotyet.com/index.htm
Produced by the Minnesota Department of Health as part of its statewide initiative “Minnesota Education Now and Babies Later,” this site offers facts, tips, links, and more for teens.

Scarleteen.com
Website: http://www.scarleteen.com
Provides sexuality and sexual health information to teens, supplementing the information that young people learn at home and in school-based programs.

SEX, etc.
Website: http://www.sexetc.org
Developed by the Network for Family Life Education, this site provides information by and for teens, on a variety of sexual health issues.

Teenwire.com
Teenwire: http://www.teenwire.com
Designed to provide teens with sexuality and sexual health information, this was developed by Planned Parenthood Federation of America.

RESOURCES: READING MATERIAL FOR STUDENTS

Elementary and Middle School

Am I Blue? Baurer, M. D. (Ed.). Anthology of stories by well-known children's authors, each portraying the subject and theme of growing up gay or lesbian, or with gay or lesbian parents or friends. Recommended for age 12 and up. Harper Trophy (paper), 1995.

From Boys to Men: All About Adolescence and You (Plugged in). M. Gurian, B. Floca. Price Stern Sloan, 1999.

GLBTQ: The Survival Guide for Queer and Questioning Teens. K. Huegel. (grades 7 and up). Free Spirit Publishing, 2003

Growing Up: It's a Girl Thing. M. Jukes. Knopf Books for Young Readers, 1998.

It's Perfectly Normal: Changing Bodies, Growing Up, Sex, and Sexual Health. R. Harris with illustrations by M. Emberley, Candlewick Press, Revised 2005.

The Period Book: Everything You Don't Want to Ask (But Need to Know). K. Gravelle, J. Gravelle, D. Palen, (illustrator). Walker & Co., 1996.

What's Going on Down There: Answers to Questions Boys Find Hard to Ask. D. Gravelle, et al. (grades 5–10) Walker and Co., 1998.

The What's Happening to My Body? Book for Boys. L. Madaras, A. Madaras. Newmarket Press, 2000.

The What's Happening to My Body? Book for Girls (3rd ed.). L. Madaras, A. Madaras. Newmarket Press, 2000.

What If Someone I Know Is Gay?: Answers to Questions About Gay and Lesbian People. E. Marcus and J. O'Connor (Eds.) Price Stern Sloan Publishing, 2000.

What's the Big Secret?: Talking about Sex with Girls and Boys. Brown, M. (illustrator), Krasny Brown, L. (author), Reprint edition, Little Brown & Co, 2000.

High School

Becoming Visible. Jennings, K. (for GLBT high-school-age youth) Alyson Publishing, 1994.

Changing Bodies, Changing Lives: A Book for Teens on Sex and Relationships. Bell, R. and other co-authors, together with members of the Teen Book Project, Turtleback Books, 1998.

Caution: Do Not Open Until Puberty! An Introduction to Sexuality for Young Adults with Disabilities. Enright, R., Van Hamme, S. L. (illus.) Devinjer House, 1995.

Free Your Mind: The Book for Gay, Lesbian, and Bisexual Youth and Their Allies. Bass, E., Kaufman K. Harper Collins, 1996.

The Go Ask Alice Book of Answers: A Guide to Good Physical, Sexual and Emotional Health. Columbia University Health Education Program, 1998.

Growing Up Gay in America: Informative and Practical Advice for Teen Guys Questioning Their Sexuality and Growing Up Gay. J. Rich. Franklin Street Books, 2002.

The Truth about Sex by High School Senior Girls. Anderson, K., Kristen Anderson Publishing, 2001.

Two Teenagers in Twenty: Writings by Gay and Lesbian Youth. A. Heron (Ed.). Alyson Publishing, Inc, 1995.

What Smart Teenagers Know...About Dating, Relationships & Sex. D. Hatchell. Piper Books, 2003.

What Teenagers Want to Know About Sex: Questions and Answers. R. Masland. Little, Brown, 1988.

RESOURCES: TEEN PREGNANCY AND PARENTING

CARE Center (Community Adolescent Resource Center, Inc.)
Holyoke, MA
Phone: 413-532-2900
The CARE Center is a nonprofit, multiservice center for low-income pregnant and parenting teens and their children that has provided a variety of education and support services. The CARE Center is one of the largest such programs in Massachusetts. The "New Directions" program combines an innovative, educationally enhanced curriculum with comprehensive support services designed to significantly increase the capacity, interest, and drive of young parents to excel academically and to develop the skills and motivation they need to lift their families out of a lifetime of poverty and despair.

Father Friendly Initiative
Boston Healthy Start
434 Massachusetts Avenue
Boston, MA 02118
Phone: 617-534-5484
Serves low income and at-risk fathers.

Fathers, Inc.
1234 Columbus Avenue
Roxbury, MA 02120
Phone: 617-445-1956
A program to teach minority males how to be role models and the fathers they never had.

Healthy Families Home Visiting Program
Children's Trust Fund (CTF)
294 Washington Street, Suite 640
Boston, MA 02108
Phone: 617-727-8957
Fax: 617-727-8997
E-mail: info@mctf.state.ma.us
Website: http://www.mctf.org
Provides a trained home visitor who offers information and support on a voluntary basis to all first-time parents age 20 and under. Families may enroll during pregnancy, and services continue for infants 0–3 months old. The statewide program is funded and administered by CTF.

Lawrence Adolescent Family Life (AFL) Partnership
Family Service Inc.
Lawrence, MA
Phone: 800-683-9544
Website: http://www.familyserviceinc.com/index.htm
The AFL Partnership is a collaboration of the Massachusetts Society for the Prevention of Cruelty to Children, Community Day Care, the Lawrence High School, and the Greater Lawrence Family Health Center. The Partnership program, administered by Family Service, Inc., implements a case management model for care services to pregnant and parenting teens, linking the currently fragmented care services in the city of Lawrence.

Massachusetts Alliance on Teen Pregnancy
Phone: 617-482-9122
Website: http://www.massteenpregnancy.org
(For full address, see Massachusetts Agencies and Organizations.)

The Alliance operates a toll-free helpline that provides information about programs in Massachusetts for teen parents and about how to access public benefits: **The Teen Parent Benefits Access Line (800-645-3750 x115).** The Alliance also offers the following helpful print resources: *A Teen Parent Guide to Massachusetts Public Benefits and Services* and *Day Care, Diplomas, and Other Dilemmas* (advice and information from teen parents).

Project RAFT (Raising Adolescent Families Together)
Children's Hospital and Brigham and Women's Hospital
Boston, MA
Phone: 617-355-7701
Project RAFT provides culturally-appropriate comprehensive and individualized care for young parents and their families. Parenting groups are fully integrated with prenatal care, child/adolescent health services, mental health services, life skills training, father's programming, and community services, and are provided for continuously from the prenatal period through age 3. The intervention is based on a combination of the "Nurturing," "Teen Parents and the Law" (TPAL), and "Fatherhood Development" curricula. Goals of the group intervention are to enhance parenting skills, help participants optimize family interaction, and build self-efficacy.

SAFE (Services for Adolescent Family Enhancement) Program for Young Parents, The Family Planning Council of Western Massachusetts
365 Bay Street
Springfield, MA
Phone: 413-737-9774
Counseling for and support services for adolescent/young adult individuals and couples. Support services include education about child care and birth control; health and prenatal care; assistance finishing school (GED); finding housing and a job; and getting legal aid, welfare, and health insurance.

The Teen Living Program
Massachusetts Department of Social Services and the Department of Transitional Assistance
Phone: 617-748-2400 (Department of Social Services)
Website: http://www.state.ma.us/dta (Department of Transitional Assistance)
The Teen Living Program is a collaboration between the Massachusetts Department of Social Services and the Department of Transitional Assistance. The program offers support and guidance about pregnancy and parenting issues to young women aged 13–19, while allowing the teen families to remain intact. This initiative provides pregnant and parenting teens with a safe and caring environment in which to develop the skills necessary to make healthy choices for themselves and their children, and to lead independent and productive lives.

Teen Tot Connection
Worcester, MA
Phone: 508-334-1000
The Teen Tot Connection operates a clinic for adolescent mothers and their infants, as well as a young fathers outreach program. It is a collaborative effort between the University of Massachusetts Department of Pediatrics and the Center for Women and Children of the U. Mass. Memorial Health Care System.

Young Fathers Program
Crittenton Hastings House
10 Perthshire Road
Boston, MA 02135
Phone: 617-782-7600
The Young Fathers Program offers case management, needs assessment, family and personal life skills training, child development training, sex education, and vocational education.

RESOURCES: YOUTH WITH DISABILITIES

The ERIC Clearinghouse on Disabilities and Gifted Education (ERIC EC)
The Council for Exceptional Children
Website: http://eric.hoagiesgifted.org
An archive of information on sex education and students with disabilities.

National Dissemination Center for Children with Disabilities
NICHCY Connections to Sexuality Education
Website: http://www.nichcy.org/resources/sexualityeducation.asp#general
Offers a resource page that provides links to sources of information on sexuality education for young people with disabilities.

REFERENCES

Alan Guttmacher Institute (see Guttmacher Institute).

Albert, B., Brown, S. & Flanigan, C. (Eds.). (2003). *14 and younger: The sexual behavior of young adolescents.* Washington, DC: National Campaign to Prevent Teen Pregnancy.

Alderman, E. (1999). Breast problems in the adolescent. *Contemporary Pediatrics, 16*(9), 99–120.

Alford, S. (2003). *Science and success: Sex education and other programs that work to prevent teen pregnancy, HIV & sexually transmitted infections*. Washington, DC: Advocates for Youth.

Amin, R. & Sato, T. (2004). Impact of school-based comprehensive program for pregnant teens on their contraceptive use, future contraceptive intention, desire for more children. *Journal of Community Health Nursing, 21*(1), 39–47.

Bakker, L. J. & Cavender, A. (2003). Promoting culturally competent care for gay youth. *Journal of School Nursing, 19*(2), 65–72. PMID: 12653617.

Barnet, B., et al. (2004). Reduced school dropout rates among adolescent mothers receiving school-based prenatal care. *Archives of Pediatric & Adolescent Medicine, 158,* 262–268.

Benton, J. (2003). Making schools safer and healthier for lesbian, gay, bisexual, and questioning students. *Journal of School Nursing, 19*(5), 251–259. PMID: 14498773.

Blake, S. M., Ledsky, R., Goodenow, C., Sawyer, R., Lohrmann, D. & Windsor, R. (2003). Condom availability programs in Massachusetts high schools: Relationships with condom use and sexual behavior. *American Journal of Public Health, 93*(6), 955–962.

Blake, S. M., Ledsky, R., Lehman, T., Goodenow, C., Sawyer, R. & Hack, T. (2001). Preventing sexual risk behaviors among gay, lesbian, and bisexual adolescents: the benefits of gay-sensitive HIV instruction in schools. *American Journal of Public Health, 91,* 940–946.

Blondell, R. D., et al. (1999). Disorders of Puberty. *American Family Physician, 60*(1), 209–218, 223–224.

Bruckner, H. & Bearman, P. (2005). After the promise: The STD consequences of adolescent virginity pledges. *Journal of Adolescent Health, 36,* 271–278.

Buzi, R. S., Saleh, M., Weinman, M. L. & Smith, P. B. (2004). Young fathers participating in a fatherhood program: Their expectations and perceived benefits. *The Prevention Researcher, 11*(4), 18–20.

Carlson, M. J. (2004). Involvement by young, unmarried fathers before and after their baby's birth. *The Prevention Researcher, 11*(4), 14–17.

Casserly, K. R., et al. (2001). Adolescent parenting: Relationship to school attendance and achievement. *Journal of School Nursing, 17*(6), 329–335.

Center for Health and Health Care in Schools. (2000). School-based screening/treatment cut chlamydia in boys by half. *Health and Health Care in Schools, 1*(1).

Center for Health Information, Statistics, Research, and Evaluation. (2007). Massachusetts births 2005. Boston, MA: Massachusetts Department of Public Health, Division of Research and Epidemiology.

Centers for Disease Control and Prevention. (2004). CDC HIV/STD/TB Prevention News Update - May 11, 2004.

Centers for Disease Control and Prevention, HIV/AIDS Prevention Research Synthesis Project. (1999, revised 2001). Compendium of HIV prevention interventions with evidence of effectiveness. Atlanta, GA: Centers for Disease Control and Prevention. Retrieved in 2007 from http://www.cdc.gov/hiv/resources/reports/hiv_compendium/index.htm.

Chandra, A., Abma, J., Maza, P. & Bachrach, C. (1999). Adoption, adoption seeking, and relinquishment for adoption in the United States. *Advance Data* (No. 306) from Vital and Health Statistics of the Centers for Disease Control and Prevention, National Center for Health Statistics, U.S. Department of Health and Human Services.

Cheng, M. M. & Udry, J. R. (2003). How much do mentally disabled adolescents know about sex and birth control? *Adolescent & Family Health, 3*(1), 28–38.

Chumlea, W. C., et al. (2003). Age at menarche and racial comparisons in U.S. girls. *Pediatrics, 111,* 110–113.

Collins, C., Alagiri, P., Summers, T., & Morin, S. F. (2002). *Abstinence only vs. comprehensive sex education: What are the arguments? What is the evidence?* Policy Monograph Series — March 2002. University of California, San Francisco: AIDS Research Institute.

Coupey, S. M. (2000). *Primary care of adolescent girls*. Philadelphia: Hanley and Belfus.

Costello, C., et al. (2003). Breaking ground: Lessons learned from the Centers for Disease Control and Prevention's community coalition partnership programs for the preventions of teen pregnancy. The National Campaign to Prevent Teen Pregnancy and Centers for Disease Control and Prevention. Available online at http://www.teenpregnancy.org/resources/data/pdf/BreakingGround.pdf.

Darroch, J. E. (2001). Adolescent pregnancy trends and demographics. Alan Guttmacher Institute. *Current Women's Health Reports, 1*(2), 102–110.

da Silva, A. A., et al. (2003). Young maternal age and preterm birth. *Paediatric and Perinatal Epidemiology, 17*(4), 332–339.

Didion, J. & Gatzke, H. (2004). The Baby Think It Over experience to prevent teen pregnancy: a post intervention evaluation. *Public Health Nursing, 21*(4), 331–337. PMID: 15260838.

Duncan P., et al. (2003). Childhood and adolescent sexuality. *Pediatric Clinics of North America, 50*(4), 765–780. PMID: 12964693.

Edmunds, L., Rink, E. & Zukoski, A. P. (2004). Male involvement: Implications for reproductive and sexual health programs. *The Prevention Researcher, 11*(Supp.), 10–14.

Emans, S., et al. (2005). *Pediatric and adolescent gynecology* (5th ed.). Philadelphia: Lippincott Raven.

Facente, A. C. (2001). Adolescents and HIV: Knowledge, behaviors, influences, and risk perceptions. *Journal of School Nursing, 17*(4), 198–203.

Frankowski, B. L. (2002). Sexual orientation of adolescent girls. *Current Women's Health Reports, 2,* 457–463.

Griffith, J. & Omar, H. (2003). Association between vegetarian diet and menstrual problems in young women: a case presentation and brief review. *Journal of Pediatric and Adolescent Gynecology, 16*(5), 319–323. Review. PMID: 14597022.

Gruber, E. & Grube, J. W. (2000). Adolescent sexuality and the media: A review of current knowledge and implications. *Western Journal of Medicine, 172,* 210–214.

Guttmacher, S., Lieberman, L., Ward, D., Freudenberg, N., Radosh, A. & Des Jarlais, D. (1997). Condom availability in New York City public schools: Relationships to condom use and sexual behavior. *American Journal of Public Health, 87,* 1427–1433.

Guttmacher Institute (formerly the Alan Guttmacher Institute). (2004). *U.S. teenage pregnancy statistics: Overall trends, trends by race and ethnicity and state by state information*. New York: AGI. Available online at http://www.guttmacher.org.

Haffener, D. W. & Goldfarb, E. S. (1997). But does it work? Improving evaluations of sexuality education. Report on the status of current evaluation research and methodologies to improve education programs. New York, NY: SIECUS.

Harrison, T. W. (2003). Adolescent homosexuality and concerns regarding disclosure. *Journal of School Health, 73*(3), 107–112. PMID: 12677729.

Hatcher, R. A. (2005). *Contraceptive Technology.* Book and CD. New York: Ardent Media Inc.

Hatcher, R. A., et al. (2004). *A pocket guide to managing contraception 2004–2005*. New York: Ardent Media, Inc.

Henshaw, S. K. (1999). Unintended pregnancy and abortion: A public health perspective. In *A Clinician's Guide to Medical and Surgical Abortion,* ed. M. Paul, E. S. Lichtenberg, L. Borgatta, D. A. Grimes, & P. G. Stubblefield. New York: Churchill.

Hoyt, H. H. & Broom, B. L. (2002). School-based teen pregnancy prevention programs: A review of the literature. *Journal of School Nursing, 18*(1), 11–16.

Huppert, J. S., et al. (2003). Sexually transmitted disease screening in teens*. Current Women's Health Reports, 3,* 451–458.

Irvine, J. M. (1995). *Sexuality education across cultures.* San Francisco: Jossey-Bass Inc.

Kaiser Family Foundation, National Public Radio, & the Harvard University John F. Kennedy School of Government. (2004). *Sex education in America.* A survey in an ongoing series of national surveys. Menlo Park, CA: Henry J. Kaiser Family Foundation. Available online at http://www.kff.org/kaiserpolls/pomr012904oth.cfm.

Kalichman, S. C. (2003). *The inside story on AIDS.* Washington, DC: APA Books.

Keller, S. N., LaBelle, H., Karimi, N. & Gupta, S. (2002). STD/HIV prevention for teenagers: a look at the Internet universe. *Journal of Health Communications, 7*(4), 341–353. PMID: 12356291.

Kimball. C. (2004). Teen fathers: An introduction. *The Prevention Researcher, 11*(4), 3–5.

Kirby, D. (2002). The impact of schools and school programs upon adolescent sexual behavior. *Journal of Sex Research, 39*(1), 51–57.

Kirby, D. (2001). Emerging answers: Research findings on programs to reduce teen pregnancy. Washington, DC: National Campaign to Prevent Teen Pregnancy. Available online at http://www.teenpregnancy.org.

Kirby, D. (2000). School-based interventions to prevent unprotected sex and HIV among adolescents. In J. L. Peterson & R. J. DiClemente (Eds.), *Handbook of HIV prevention.* (pp.103–127). New York, NY: Kluwer Academics/Plenum Publishers.

Kosciw, J. G. & Cullen, M. K. (2001). The school-related experiences of our nation's lesbian, gay, bisexual, and transgender youth: The GLSEN 2001 national school climate survey. New York: GLSEN.

Leland, N. L., Peterson, D. J., Braddock, M. & Alexander, G. R. (1995). Variations in pregnancy outcomes by race among 10–14 year-old mothers in the United States. *Public Health Reports, 110,* 53–58.

Lightfoot, M. & Rotheram-Borus, M. J. (2000). Interventions for high-risk youth. In Peterson, J. H. L. & DiClemente, R. J. (Eds.). *Handbook of HIV Prevention* (pp. 129–145). New York, NY: Kluwer Academics/Plenum Publishers.

Lipkin, A. (2000). *Understanding homosexuality, changing schools*. Boulder, CO: Westview Press.

Logsdon, M. C., Cross, R., Williams, B. & Simpson, T. (2004). Prediction of postpartum social support and symptoms of depression in pregnant adolescents: A pilot study. *Journal of School Nursing, 20*(1), 36–42.

Low-Beer, D. & Stoneburger, R. (2001). *In search of the magic bullet: evaluating and replicating prevention programs*. Menlo Park, CA: Henry J. Kaiser Family Foundation.

Main, D. S., Iverson, D. C, McGloin, J., Banspach, S. W., Collins, J. L., Rugg, D. L., et al. (1994). Preventing HIV infection among adolescents: Evaluation of a school-based education program. *Preventive Medicine, 23*, 409–417.

Marx, E., Harrison V. & Strauss Riggs, K. (2005). *Promoting sexual responsibility: A teen pregnancy prevention resource for school employees.* Alphareta, GA: NEA Health Information Network and the NEA Professional Library.

Massachusetts Department of Education. (2004). *2003 Massachusetts youth risk behavior survey*. Malden, MA: Massachusetts DOE. Available online at http://www.doe.mass.edu/cnp/hprograms/yrbs/.

Maynard, R., Trenholm, C., Devaney, B., Johnson, A., Clark, M., Homrighausen, J., et al. (2005). *First-year impacts of four Title V, Section 510 abstinence education programs.* Princeton, NJ: Mathematica Policy Research. Retrieved online in 2005: http://www.mathematica-mpr.com/.

McDonald, T. P. & Kaplan, D. (2002). Adolescent preventive services for girls.
Current Women's Health Reports, 2, 450–456.

Michael A., et al. (2003). To do it or not to do it is not the only question: Early adolescent girls' and boys' experiences with dating and sexuality. Research paper, Wellesley Center for Research on Women. Available for purchase at http://www.wcwonline.org/title384.html.

Mullen, P. D., Ramirez, G., Strouse, D., Hedges, L. V. & Sogolow, E. (2002). Meta-analysis of the effects of behavioral HIV prevention interventions on the sexual risk behavior of sexually experienced adolescents in controlled studies in the United States. *Journal of Acquired Immune Deficiency Syndromes, 30,* Suppl 1, S94–S105.

Neufeld, J. A., et al. (2002). Adolescent sexuality and disability. *Physical Medicine and Rehabilitation Clinics of North America, 13*(4), 857–873. PMID: 12465564.

Nurses Campaign to Reduce Adolescent High Risk Behaviors. (2001). *Lessons learned: A grassroots approach to addressing HIV infection in schools.* Washington, DC: American Nurses Association. Available at no charge from American Nurses Foundation at 202-651-7231.

O'Donnell, L., Stueve, A., O'Donnell, C., Duran, R., San Doval, A., Wilson, R. F., et al. (2002). Long-term reductions in sexual initiation and sexual activity among urban middle schoolers in the Reach for Health service learning program. *Journal of Adolescent Health. 31*(1), 93–100.

Olenik Lynch, C. (2001). Risk and protective factors associated with adolescent sexual activity. *Adolescent & Family Health, 2*(3), 99–107.

Parker, J. T. (2001). School-based sex education: A new millennium update. *Eric Digest*. Washington DC: ERIC Clearinghouse on Teaching and Teacher Education, ED460130.

Pedlow, C. T. & Carey, M. P. (2004). Developmentally appropriate sexual risk reduction interventions for adolescents: Rationale, review of interventions, and recommendations for research and practice. *Annals of Behavioral Medicine, 27*(3), 172–184.

Perrin, K. M. & Dorman, K. A. (2003). Teen parents and academic success. *Journal of School Nursing, 19*(5), 288–293.

Perrotti, J. & Westheimer, K. (2002). *When the drama club is not enough: Lessons from the safe schools program for gay and lesbian students*. Boston: Beacon Press.

Peter D. Hart Research Associates, Inc., (1999). *Teaching sex education in the public elementary schools*. Phone survey. February 20–26, 1999.

Porter, C. P. (2002). Female "tweens" and sexual development. *Journal of Pediatric Nursing, 17*(6), 402–406. PMID: 12518280.

Preves, S. E. (2003). *Intersex and identity: The contested self*. Piscataway, NJ: Rutgers University Press.

Rager, K. M. & Kahn, J. A. (2002). Human papillomavirus and adolescent girls. *Current Women's Health Reports, 2,* 468–475.

Remez, L. (2000). Oral sex among adolescents: Is it sex or is it abstinence? *Family Planning Perspectives, 32*(6), 298–304.

Romo, L. F., et al. (2001). Determinants of mother-adolescent communication about sex in Latino families. *Adolescent & Family Health, 2*(2), 72–82.

Rose, L. E. & Gallup, A. M. (1998). The 30th Annual Phi Delta Kappa/Gallup Poll of the Public's Attitudes Toward Public Schools. *Phi Delta Kappan,* September: 41–56.

Ryan, C. C. & Futterman, D. (1998). *Lesbian & gay youth: Care and counseling.* New York, NY: Columbia University Press.

Santelli, J. S., Duberstein Lindberg, L., Finer, L. B. & Singh, S. (2007). Explaining recent declines in adolescent pregnancy in the United States: the contribution of abstinence and improved contraception use. *American Journal of Public Health, 97,* 150–156.

Santelli, J. S., Ott, M. A., Lyon, M., Rogers, J., Summers, D. & Schleifer, R. (2006). Abstinence and abstinence-only education: A review of U.S. policies and programs. *Journal of Adolescent Health 38,* 72–81.

Santelli, J. S., Abma, J., Ventura, S., Lindberg, L., Morrow, B., Anderson, J. E., et al. (2004). Can changes in sexual behaviors among high school students explain the decline in teen pregnancy rates in the 1990s? *Journal of Adolescent Health, 35*(2), 80–90.

Savin-Williams, R. C. (1994). Verbal and physical abuse as stressors in the lives of lesbian, gay male, and bisexual youths: associations with school problems, running away, substance abuse, prostitution, and suicide. *Journal of Consulting and Clinical Psychology, 62,* 261–69.

Schmiedl, R. (2004). School-based condom availability programs. *Journal of School Nursing, 20*(1), 16–21.

Shapland, C. (2000). *Sexuality issues for youth with disabilities and chronic health conditions.* Gainesville, FL: Center for Policy and Partnerships at the Institute for Child Health Policy. Available online at http://www.hrtw.org/tools/hrtw_go.html.

SIECUS. (2001). Issues and answers: Fact sheet on sexuality education. *SIECUS Report, 29*(6). Available online at http://www.siecus.org/pubs/fact/fact0007.html.

SIECUS and Advocates for Youth. (1999). *SIECUS/advocates for youth survey of Americans' views on sexuality education*. Washington, DC: SIECUS.

Silva, M. (2002). The effectiveness of school-based sex education programs in the promotion of abstinent behavior: a meta-analysis. *Health Education Research, 17*(4), 471–481.

Smith, G. (2003). Emergency contraception: a pilot study by school nurses. *Nursing Times, 99*(12), 36–38.

Sipski, M. & Alexander, C. (1997). *Sexual function in people with disability and chronic illness: a health professional's guide*. Gaithersburg, MD: Aspen Press.

St. Lawrence, J. S., Crosby, R. A., Brasfield, T. L. & O'Bannon, R. E. (2002). Reducing STD and HIV risk behavior of substance-dependent adolescents: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 70,* 1010–1021.

Stephens, S. A., Wolf, W. & Batten, S. T. (2003). Strengthening school based programs for teen parents: challenges and solutions. *The Prevention Researcher, 10*(3), 5–8.

Sutton, A. (1998). 'Lesley': the struggle of a teenager with an intersex disorder to find an identity—its impact on the 'I' of the beholder. Case Study D in *A Stranger in My Own Body,* Di Ceglie, D. & Freedman, D. (Eds.). London: Karnac Books.

Tanner, J. M. (1955). *Growth at adolescence*. Springfield, IL: C. C. Thomas.

Tanner, J. M. (1990). *Foetus into man: Physical growth from conception to maturity* (revised and enlarged edition). Cambridge: Harvard University Press.

Trussel, J. (2004). Contraceptive efficiency. In Hatcher, et al., *Contraceptive Technology.* (18th ed.). New York: Ardent Media.

Upchurch, D. M. (1993). Early schooling and childbearing experiences: Implications for postsecondary school attendance. *Journal of Research on Adolescent Health, 3*(4), 423–443.

U. S. Department of Health & Human Services. (2001). *The Surgeon general's call to action to promote sexual health and responsible sexual behavior*. Available online at http://www.surgeongeneral.gov/library/calls.htm.

van Wormer, K. & McKinney, R. (2003). What schools can do to help gay/lesbian/bisexual youth. *Adolescence, 38*(151), 409–420. PMID: 14768989.

Way, N. & Chu, J. (Eds.). (2004). *Adolescent boys: Exploring diverse cultures of boyhood*. New York, NY: New York University Press.

Wilson, K., Goodson, P., Pruitt, B. E., Buhi, E. & Davis-Gunnels, E. (2005). A review of 21 curricula for abstinence-only-until-marriage programs. *Journal of School Health, 75*(3), 90–98.

Wu, T., et al. (2002). Differences in the presence of secondary sex characteristics and menarche among U.S. girls: The third national health and nutrition examination survey, 1988–1994. *Pediatrics, 110*(4), 752.

Note: Articles with PMID number have been indexed by PubMed for MEDLINE.

EXHIBITS

Exhibit 12-1 Tanner Classification of Pubertal Development

Exhibit 12-1 Tanner Classification of Pubertal Development

Female Breast

Stage 1: No breast tissue and flat areola.
Stage 2: Breast budding with widening of the areola.
Stage 3: Larger and more elevated breast, extending beyond the areola.
Stage 4: Larger and even more elevated breast. Areola and nipple projecting from the breast contour.
Stage 5: Adult size with nipple projecting above areola.

Male Genital

Stage 1: Testes small in size. Childlike penis.
Stage 2: Testes reddened, thinner, and larger (volume 2–6 cc). Childlike penis.
Stage 3: Testes larger (6–12 cc) and scrotum enlarging. Increase in penile length.
Stage 4: Testes larger (12–20 cc) with greater enlargement and darkening of the scrotum. Increase in length and circumference of penis.
Stage 5: Testes larger (>20 cc) with adult scrotum and penis.

Male and female pubic hair

Stage 1: None.
Stage 2: Small amount of long hair at base of male scrotum or female labia majora.
Stage 3: Moderate amount of curly and coarser hair extending outwards.
Stage 4: Resembles adult hair but does not extend to inner surface of thigh.
Stage 5: Adult type and quantity extending to the medial thigh surface.

Chapter 13

INJURY AND VIOLENCE PREVENTION

Scope of the Problem

Policy Implications for Schools

Role of Education

Unintentional Injuries

Violence

Guidelines for Policy/Program Development and Screening Tools

Summary

Resources: Curricula/Teaching Tools and Registries of Effective Programs

Resources: Massachusetts Agencies and Organizations

Resources: National Agencies and Organizations

Resources: Specific Issues Related to Unintentional Injury

Resources: Specific Issues Related to Violence

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 13

INJURY AND VIOLENCE PREVENTION

Injury and violence are serious threats to the health of children and adolescents in the United States. Children and adolescents are at high risk for many injuries leading to death or disability. The Centers for Disease Control and Prevention (CDC) estimates approximately three quarters of all deaths among children and adolescents aged 5–19 result from injury-related causes (CDC, 2006).

Unintentional injuries include those injuries occurring without intent of harm and are not purposely inflicted. Examples of unintentional injuries include pedestrian, bicycle and motor vehicle crashes, playground falls, sports injuries, and injuries sustained by teenage workers. Violence includes the broad spectrum of behavior ranging from child abuse, domestic violence and bullying to sexual assault/harassment, aggravated assault and homicide as well as to self inflicted injury, including anorexia, cutting, and suicide. Injuries resulting from violence may be referred to as “intentional injuries”. Some injuries, such as some poisonings, may be of undetermined intent.

This chapter addresses issues involved in the promotion of safety and the prevention of violence. It also explores the various of types of injuries for which children and adolescents are at risk, as well as specific actions schools can take.

SCOPE OF THE PROBLEM

Keeping students safe and injury-free is a critical concern for school personnel. Children and adolescents are more at risk of death from an injury than from all other causes combined, and almost two-thirds (63%) of these injuries are unintentional (CDC, 2006). An estimated 50,000 children acquire permanent disabilities each year, most of which are the result of closed head injuries (Alterman et al., 2006). More than 250 out of every thousand children and adolescents annually sustain injuries that require medical attention or result in restricted activity (CDC, 2006; Danseco, Miller & Spicer, 2000). Many of these injuries occur at or near schools. Approximately 4 million children and adolescents are injured at school each year (CDC, 2006; Spicer et al., 2003; Danseco, et al., 2000). Injuries sustained in or around schools account for 10%–25% of the annual unintentional injuries to children age 14 and under (Safe Kids, 2006). Some additional statistics that bring the seriousness of this issue into sharp focus appear below.

Deaths of School-Age Youth

- From July 1, 2004 through June 30, 2005, there were 21 homicides and 7 suicides of school-age youth in elementary and secondary schools in the United States. Although the number of homicides committed either at or en route to or from school and school activities remained less than 2% of all youth homicides for the time period, the 2004–2005 figure was almost double the number of school-related homicides in the 2000–2001 school year (Bureau of Justice Statistics et al., 2006).

- Three-quarters of teen deaths are due to preventable causes. Accidents (especially automobile accidents) are by far the leading cause of teen death, accounting for three times as many teen deaths as any other cause (Shore, 2005).
- In 2003, teenagers accounted for 10 percent of the U.S. population deaths and 13 percent of motor vehicle crash deaths (Insurance Institute for Highway Safety, 2005).

Unintentional Injuries

- Each year in the U.S., emergency departments treat more than 200,000 children age 14 and younger for playground-related injuries (Tinsworth, 2001).
- About 75% of nonfatal injuries related to playground equipment occur on public playgrounds (Tinsworth, 2001). Most occur at schools and childcare centers (Phelan, 2001).
- Each year, almost 60,000 children and adolescents survive traumatic brain injuries serious enough to require hospitalization (Dunn, Thurman & Alverson, 2006).
- About 100,000 young people seek treatment in hospital emergency departments for work-related injuries each year (Annie E. Casey Foundation, 2005).

Violence

- Thirty-three percent of high school students nationwide reported having engaged in a physical fight one or more times in the previous 12 months (Grunbaum et al., 2004). In Massachusetts, the proportion was 31%, down from a high of 36% in 1997 (DOE, *2003 MYRBS*, 2004).
- Nationwide, 9% of high school students reported having been hit, slapped, or physically hurt on purpose by their boyfriend or girlfriend in the previous 12 months (Grunbaum et al., 2004). In Massachusetts, 11% of high school students (15% of females and 7% of males) reported experiencing violence in a dating relationship. Five percent of all students reported being hurt physically, 3% were hurt sexually, and another 3% were hurt both physically and sexually (DOE, *2003 MYRBS*, 2004).
- 10% of Massachusetts high school students reported sexual contact against their will. Females reported such experiences at higher rates than males (14% vs. 6%). (DOE, *2003 MYRBS,* 2004).

Healthy People 2010 is a national consensus document that sets the health promotion and disease prevention agenda for the U.S. It identifies injury, violence, and mental health problems, including suicide, as leading health indicators, and it includes objectives to reduce the toll from these issues (U.S. Department of Health and Human Services, 2000).

Healthy People 2010's objectives aimed at reducing unintentional injuries include:

- increase use of safety belts, motorcycle helmets, bicycle helmets, smoke alarms, and sports-related protective gear;
- reduce the proportion of adolescents who ride with a driver who has been drinking alcohol;
- increase the number of states that have adopted graduated driver licensing laws; and
- reduce adolescent work-related injuries resulting in medical treatment, lost time from work, or restricted work activity.

Objectives aimed at reducing violence include:

- reduce maltreatment and maltreatment fatalities of children;
- reduce the rate of physical assault by current or former intimate partners;
- reduce the annual rate of rape, attempted rape, and sexual assault;
- reduce the proportion of adolescents who engage in physical fighting, carry weapons, and ride with a driver who has been drinking alcohol;

- reduce intentional injuries resulting from use of alcohol and illicit drugs; and
- reduce harassment and bullying.

According to Healthy People 2010, the specific objective for schools is to prevent unintentional injury, violence, and suicide. Creating and ensuring safety in the schools is essential for all students to be able to learn. For this reason, it is critical for schools to provide comprehensive school health education.

POLICY IMPLICATIONS FOR SCHOOLS

A CDC guidance document on injury and violence prevention, *School Health Guidelines to Prevent Unintentional Injuries and Violence* (CDC, 2001), defines 8 specific areas on which to concentrate school health efforts:

- a social environment that promotes safety;
- a safe physical environment;
- health education curricula and instruction;
- safe physical education, sports, and recreational activities;
- health, counseling, psychological, and social services for students;
- appropriate crisis and emergency response;
- involvement of families and communities; and
- staff development to promote safety and prevent unintentional injuries, violence, and suicide.

The recommendations, as well as specific strategy suggestions, are shown below. The full text of this document is available online at http://www.cdc.gov/MMWR/preview/mmwrhtml/rr5022a1.htm.

Recommendation 1 - Establish a social environment that promotes safety and prevents unintentional injuries, violence, and suicide:

- Ensure high academic standards, and provide faculty, staff members, and students with the support and administrative leadership to promote the academic success, health, and safety of students.
- Encourage students' feelings of connectedness to school.
- Designate a person with responsibility for coordinating safety activities.
- Establish a climate that demonstrates respect, support, and caring and that does not tolerate harassment or bullying.
- Develop and implement written policies regarding unintentional injury, violence, and suicide prevention.
- Infuse unintentional injury, violence, and suicide prevention into multiple school activities and classes.
- Establish unambiguous disciplinary policies, communicate them to students, faculty, staff members, and families; and implement them consistently.
- Assess unintentional injury, violence, and suicide prevention strategies and policies at regular intervals.

Note: Exhibit 13-1 provides a list of tools for evaluating a school's social and emotional climate.

Recommendation 2 - Provide a physical environment, inside and outside school buildings, that promotes safety and prevents unintentional injuries and violence:

- Conduct regular safety and hazard assessments.

- Maintain structures, playground and other equipment, school buses and other vehicles, and physical grounds; make repairs immediately following identification of hazards.
- Actively supervise all student activities to promote safety and prevent unintentional injuries and violence.
- Ensure that the school environment, including school buses, is free from weapons.

Recommendation 3 - Implement health and safety education curricula and instruction that help students develop the knowledge, attitudes, behavioral skills, and confidence needed to adopt and maintain safe lifestyles and to advocate for health and safety:

- Choose prevention programs and curricula that are grounded in theory or that have scientific evidence of effectiveness.
- Implement unintentional injury and violence prevention curricula consistent with national and state standards for health education.
- Use active learning strategies, interactive teaching methods, and proactive classroom management to encourage student involvement in learning about unintentional injury and violence prevention.
- Provide adequate staffing and resources, including budget, facilities, staff development, and class time, to provide comprehensive unintentional injury and violence prevention education for all students.

Recommendation 4 - Provide safe physical education and extracurricular physical activity programs:

- Develop, teach, implement, and enforce safety rules.
- Promote unintentional injury prevention and nonviolence through physical education and physical activity program participation.
- Ensure that spaces and facilities for physical activity meet or exceed recommended safety standards for design, installation, and maintenance.
- Hire physical education teachers, coaches, athletic trainers, and other physical activity program staff members who are trained in injury prevention, first aid, and CPR; and provide them with ongoing staff development.

Recommendation 5 - Provide health, counseling, psychological, and social services to meet the physical, mental, emotional, and social health needs of students:

- Coordinate school-based counseling, psychological, social, and health services; and the educational curriculum.
- Establish strong links with community resources, and identify providers to bring services into the schools.
- Identify and provide assistance to students who have been seriously injured, who have witnessed violence, who have been the victims of violence or harassment, and who are being victimized or harassed.
- Assess the extent to which injuries occur on school property.
- Develop and implement emergency plans for assessing, managing, and referring injured students and staff members to appropriate levels of care.

Recommendation 6 - Establish mechanisms for short- and long-term responses to crises, disasters, and injuries that affect the school community:

- Establish a written plan for responding to crises, disasters, and associated injuries.
- Prepare to implement the school's plan in the event of a crisis.
- Have short-term responses and services established after a crisis.

- Have long-term responses and services established after a crisis.

Recommendation 7 - Integrate school, family, and community efforts to prevent unintentional injuries, violence, and suicide:

- Involve parents, students, and other family members in all aspects of school life, including planning and implementing unintentional injury, violence, and suicide prevention programs and policies.
- Educate, support, and involve family members in child and adolescent unintentional injury, violence, and suicide prevention.
- Coordinate school and community services.

Recommendation 8 - For all school personnel, provide regular staff development opportunities that impart the knowledge, skills, and confidence to effectively promote safety and prevent unintentional injury, violence, and suicide, and support students in their efforts to do the same:

- Ensure that staff members are knowledgeable about unintentional injury, violence, and suicide prevention and have the skills needed to prevent injuries and violence at school, at home, and in the community.
- Train and support all personnel to be positive role models for a healthy and safe lifestyle.

ROLE OF EDUCATION

Enabling Legislation

M.G.L. c.71, s.1 includes health education among the subjects of instruction to be taught in public schools (see http://www.mass.gov/legis/laws/mgl/71-1.htm):

> "Instruction in health education shall include, but not be limited to: consumer health, ecology, community health, body structure and function, safety, nutrition, fitness and body dynamics, dental health, emotional development, and training in the administration of first aid, including cardiopulmonary resuscitation. In connection with physiology and hygiene, instruction as to the effects of alcoholic drinks and of stimulants, including tobacco, and narcotics on the human system, as to tuberculosis and its prevention, as to the detection and prevention of breast and uterine cancer, and as to fire safety, including instruction in the flammable qualities of certain fabrics, and as to the prevention and treatment of burn injuries, shall be given to pupils in all schools under public control, except schools maintained solely for instruction in particular subject areas. . . . No pupil shall be required to take or participate in instruction on disease, its symptoms, development and treatment, whose parent or guardian shall object thereto in writing on the grounds that such instruction conflicts with his sincerely held religious beliefs, and no pupil so exempt shall be penalized by reason of such exemption."

Under its authority to adopt curriculum frameworks for use in the public schools (M.G.L. c.69, s.1D), the Massachusetts Board of Education has adopted the Massachusetts Comprehensive Health Curriculum Framework. Incorporating health education, physical education, and family and consumer sciences, the framework provides guidelines for schools' comprehensive K–12 health education curricula. Implementation of health education requirements is the responsibility of local school districts. See Chapter 3 for further discussion of health education.

All current curriculum frameworks, including the framework for comprehensive health, are posted at http://www.doe.mass.edu/frameworks/current.html.

Recommended Content and Standards

The Massachusetts Comprehensive Health Curriculum Framework discusses recommended health education content in terms of 4 separate, but interrelated, strands: physical health, social and emotional health, safety and prevention, and personal and community health. Each strand includes several PreK–12 standards defining topic-oriented content and setting expectations for knowledge and skills that students should acquire. The standards most relevant to injury and violence prevention are: Mental Health, Family Relationships, Interpersonal Relationships (Social and Emotional Health Strand), Safety and Injury Prevention and Violence Prevention (Safety and Prevention Strand), and Community and Public Health (Personal and Community Health Strand).

- *Mental Health:* Students will acquire knowledge about emotional and physical health, the management of emotions, personality, character development, and social awareness; and will learn skills to promote self-acceptance, healthy decision making, and the ability to cope with stress, including suicide prevention.
- *Family Relationships:* Students will gain knowledge about the significance of the family and will learn skills needed to support the family structure, balance work and family life, be an effective parent, and nurture the development of children.
- *Interpersonal Relationships:* Students will learn that relationships are an integral part of the human life experience, and the factors that contribute to healthy interpersonal relationships. They will also acquire skills to maintain and enhance relationships through communication.
- *Safety and Injury Prevention:* Students will gain the knowledge and skills to administer first aid and carry out emergency procedures, including CPR. They will learn to avoid, recognize, and report verbal, physical, and emotional abuse situations, and to assess the factors that contribute to violence and unintentional injury, including motor vehicle accidents, fire hazards, and weapons.
- *Violence Prevention:* Students will learn how their actions affect others and how positive character traits can have an effect on violence prevention. Students will acquire the necessary skills to report incidents of violence and hurtful behavior to adults in school and in the community. They will avoid engaging in violence and identify constructive alternatives to violence, including discouraging others from engaging in violence.
- *Community and Public Health:* Students will learn the influence of social factors upon health and the contribution of public health. They will gain skills to promote health and to collaborate with others to facilitate healthy, safe, and supportive communities.

The standards are broken down further to reflect measurable student competencies at each grade span (PreK–5, 6–8, 9–12). These competencies, along with examples of activities that promote skill acquisition, can be accessed online at the DOE website. Print copies are also available from DOE.

Teaching About Safety and Violence Prevention by Developmental Level

Safety and violence prevention curricula must take students' ages and developmental levels into account. Injury and violence prevention curricula should also target injuries and violence for which the age group being taught is most at risk. There is considerable evidence that targeting to a slightly younger age group than those most at risk is also an important strategy for primary prevention (Carter, 2005; Wolfe & Jaffe, 2003). Comprehensive and topic-specific curricula exist for many safety issues. (See Resources at the end of this chapter and in Chapter 3.)

Kindergarten Through Grade 6

During these years, instill and reinforce good safety habits. Because younger children are particularly eager to learn and to earn adults' approval, teachers have ample opportunity to teach and practice safety behaviors in school that can carry over to life outside of school.

Poster contests and popular figures can be used to reinforce the safety messages. Guest speakers who are powerful role models for children (e.g., police and fire-prevention officers) can be an effective strategy in captivating the attention of younger students to convey a safety message. However, it should be noted that assemblies or one time speakers are not effective in teaching students skill development. Begin teaching the concept that "injuries are not accidents" and injuries and accidents may be prevented through careful planning and certain behaviors. For example, discussing the importance of safety belts with younger children can instill lifesaving habits.

It is also developmentally appropriate to talk about violence prevention in the context of respecting oneself and others, managing one's feelings, safe versus unsafe touch, and adults' responsibility to keep children safe. Because some children will have already experienced and/or witnessed violence by this age, it is important to create clear protocols and to train staff to respond to any disclosures triggered by such discussions.

Any discussions or classes at this age should incorporate and reflect the school's mission statement and codes of conduct, and reinforce the identified desired school culture. In this light, many school districts have begun to include social competency programs at this early level as a measure to increase positive school climate and reduce bullying.

Middle School

Prevention efforts targeted for middle schoolers are especially important. It is during the pre-adolescent and early adolescent years of middle school that elementary school bullying turns to violence and youth most often begin experimenting with risky behaviors (Mertens, 2006). Children and early adolescents are at a developmental stage in which patterns of thought and behavior are not yet fixed. And while students at this age are generally better able to learn facts and figures than are younger students, it is critical to present this age group with safety lessons that challenge them to solve problems or to assume a level of responsibility.

Middle school students should be provided with safe opportunities to be role models for younger children. A school might offer such opportunities as leadership classes, mentoring, and peer mediation groups. In addition, the community can partner with the school in offering other skill development opportunities such as a babysitting readiness class or conflict resolution classes, in which preadolescents are taught safety lessons in the context of being responsible community members. Lifesaving skills such as CPR, as well as leadership skills, can help develop self-confidence and a sense of responsibility for one's own safety and that of others.

The middle school, in partnership with the community, might offer students the opportunity to build relationships with others through mentoring, leadership, or advisor programs to communicate responsible messages about important topics such as bullying and violence prevention, sexual harassment, healthy relationships, respecting diversity, car safety, or wearing a helmet while biking, skateboarding, or skating.

Adolescents

Although adolescents are at high risk for serious injury and death, particularly from motor vehicle crashes, alcohol abuse, homicide, and suicide, many perceive themselves as invulnerable. In their transition to adulthood, teens face many important developmental tasks: gaining autonomy and

mastery, seeking intimacy, and separating from parents and family. Risk-taking is one way they pursue these tasks.

Reducing both violence and injury requires a youth development approach that focuses on resiliency and protective factors. Therefore, it is important for adolescents to receive effective training in sequential skill development, as it is known to support health promotion and reduce high-risk taking behaviors.

Need for a Comprehensive and Coordinated Approach

Most injury and violence prevention experts agree that truly effective prevention efforts must be comprehensive — consisting of *education*, supplemented by a safety evaluation of the physical and emotional *environment*, the development and *enforcement* of safety laws, guidelines, and recommendations, and the coordination of *community prevention* efforts and messages. Understanding the scope of injury and violence, as well as successful prevention and intervention strategies, is essential in efforts to keep students safe before, during, and after school. Successful injury and violence prevention usually involves multiple stakeholders: school faculty and staff, parents, students, community representatives, and others in the community. All stakeholders, especially students, should be able to recognize signs of potential injury or violence, and should be well informed about safety protocols, including reporting potential threatening situations.

Although injury and violence prevention is best addressed in a comprehensive and coordinated fashion, the balance of this chapter will address separately unintentional injury topics and topics related to violence. This is done in the interest of making information on specific topics easier to locate.

UNINTENTIONAL INJURIES

Most injuries are predictable and preventable. In fact, injury prevention professionals are trying to remove the word *accident* from our vocabulary, because it implies that an event happened randomly and nothing could have been done to prevent it. For example, if a child falls off the monkey bars on a school playground and breaks an arm, the injury may have occurred because the bars were too far apart for a younger child, or the school did not restrict usage for younger children. Additionally, the injury may have been prevented if the child had fallen on an adequate, impact-absorbing surface instead of asphalt, or if established playground rules were consistently enforced.

Prevalence of Unintentional Injuries Among School-Age Children (5–18 Years) in Massachusetts

- Each year, 85 school-age children die, 2,670 are hospitalized, and 157,360 visit hospital emergency departments due to unintentional injuries.
- In a single year, approximately 1 in 7 children sustains an injury serious enough to require a hospitalization or an emergency department visit.
- School-age boys are 4 times more likely to die of an unintentional injury than are school-age girls.
- Adolescents 15–18 years of age are a particularly high-risk population for unintentional injury.

Legal/Regulatory Issues: Unintentional Injury

This section provides a brief overview of some general laws relevant to health, safety, and prevention of unintentional injuries in Massachusetts's public schools. For more detailed

information on each law, please check the DOE website at http://www.doe.mass.edu, as well as other websites listed in this section.

Bicycle and Other Manually Propelled Wheeled Vehicle Safety

M.G.L. c.85, s.11B (2)(iii) requires a secured, approved, fitted helmet be worn by persons 16 years of age and under who are operating or being carried as a passenger on a bicycle, in-line skates, a skateboard, a scooter, or other manually propelled wheeled vehicle. See http://www.mass.gov/legis/laws/mgl/85-11b.htm.

School Fire Safety and Fire Drill Regulations

The Massachusetts Fire Code regulations pertaining to schools are contained in 527 CMR 10.09. The regulations specify the requirements for schools relating to fire prevention and conducting mandated fire drills. Among other things, they require: 1) school officials to inform every instructor and supervisor about fire drill procedures, and 2) every student in all schools to be advised of the fire drill procedures or to take part in a fire drill within 3 days after entering the school. A 2003 amendment to the regulations relates to the exhibiting of student work and teaching materials in schools (527 CMR 10.09(6)). Refer to Chapter 4 for detailed information on this amendment and discussion of building-related fire safety issues. The regulations are posted at http://www.mass.gov/dfs/osfm/fireprevention/cmr/index.htm.

Residential Fire-Related Regulations

M.G.L. c.148 s.26F requires all newly built homes in the Commonwealth, as well as all homes sold or transferred in Massachusetts, have working smoke alarms. In addition, in November 2005, Massachusetts passed “Nicole’s Law,” M.G.L. c.148 s.26F1/2, which required all owners of residential property containing fossil fuel-burning equipment or enclosed parking (i.e., attached or enclosed garage) to install carbon monoxide (CO) alarms by March 31, 2006. The Board of Fire Prevention Regulations developed the regulations (527 CMR 31.00) establishing the specific requirements of the law, including the type, location, maintenance, and inspection requirements for the alarms. Additional information about the regulations may be obtained from local fire departments and on the Massachusetts Department of Fire Services website at http://www.mass.gov/dfs/osfm/pubed/firesafetytopics/carbon_monoxide_safety.htm.

Motor Vehicle Safety — Child Safety Seats

M.G.L. c.90, s.7AA requires child passengers in automobiles to ride in federally approved child safety seats until they are 5 years old and over 40 pounds. For children aged 5–12 weighing over 40 pounds, a booster seat or safety belt must be used. The only exceptions are:

- a child riding as a passenger in a school bus;
- a child riding as a passenger in a vehicle made before July 1, 1966 that is not equipped with safety belts; and
- a child who is physically unable to use either a conventional child passenger restraint or a child restraint specifically designed for children with special needs. In such a case, a physician’s written certification is required.

Motor Vehicle Safety — Safety Belts

Children 12 and older must wear a safety belt, as required by the Massachusetts Safety Belt Law (M.G.L. c.90, s.13A), which requires everyone over age 12, with a few exceptions, to wear a safety belt when riding in a motor vehicle. Driver-education instructors and students must wear safety belts during every driving lesson. See http://www.mass.gov/legis/laws/mgl/90-13a.htm.

Motor Vehicle Safety — Teen Drivers

The Massachusetts Junior Operator's License Law (M.G.L. c.90, s.8) specifies rules and restrictions for drivers between the ages of 16½ and 18. See http://www.mass.gov/legis/laws/mgl/90-8.htm. Detailed information is posted on the Registry of Motor Vehicles website at http://www.mass.gov/rmv/jol/.

School Bus Safety

M.G.L. c.90, s.7B (15) addresses instruction in bus safety:

> All pupils transported in a school bus shall receive classroom instruction in safe riding practices at least three times during the following periods of each school year: the first week of the school year, the period between the months of September and January and the period between the month of January and the end of the school year. During each school year all such pupils shall participate at least twice in on-bus emergency evacuation drills.

M.G.L. c.90, s.7D-1/2 states any motor vehicle used to transport vocational students participating in a work project to and from the work site, and having permanent seating accommodations for not more than 14 persons in addition to the operator, must be "equipped with a seat belt for each permanent seating accommodation designed and installed in compliance with U.S. Department of Transportation motor vehicle safety standards, which seat belt shall be fastened about each passenger at all times during vehicle operation."

School Laboratory and Vocational Program Safety

M.G.L. c.71, s.55C requires teachers and students to wear industrial-quality eye protection during activities that may endanger eyes. See http://www.mass.gov/legis/laws/mgl/71-55c.htm.

Child Labor Laws

Federal child labor laws can be found in 29 CFR Part 570. The federal Fair Labor Standards Act (FLSA) includes protections for youth aged 14–17 who enter the workforce. Child Labor Bulletin 101, "Youth Employment Provisions for Nonagricultural Occupations Under the Fair Labor Standards Act," available at http://www.dol.gov/esa/regs/compliance/whd/childlabor101.htm, specifies who is covered by the FLSA youth provisions and who is exempt, minimum age and wage standards, and the hazardous occupations in which youth under 18 cannot be employed. Massachusetts child labor laws are found in M.G.L. c.149. Detailed information on child labor laws is available on the Massachusetts Department of Public Health's (DPH) website at http://mass.gov/Eeohhs2/docs/dph/occupational_health/under18_laws.pdf. A compilation of the most protective state and federal child labor laws may also be found in Exhibit 13-2 at the end of this chapter.

Note: The above is a brief overview of some state and federal laws relevant to health and safety in Massachusetts's public schools. It is not exhaustive. In addition, individual cities, towns, or school districts may have local rules or policies regulating such issues as first aid and CPR certification, placement of fire extinguishers, and health education requirements.

Preventing Unintentional Injuries

While it may not be possible to prevent all injuries, the study of injury control has revealed ways to reduce the number and severity. It is generally understood that the most effective injury-prevention efforts address multiple factors and use multiple approaches simultaneously. Rather than concentrating exclusively on individual behavior, effective injury-prevention efforts also make remedial changes in the environment, products, social norms, legislation, and policy. Legislation requiring use of bicycle helmets should be accompanied by an educational campaign for children and parents, police enforcement, and discounted sales of helmets by local merchants (CDC, 2001).

Passive injury-prevention strategies requiring little or no action on the part of individual persons are often most effective, however they are not always achievable. Product modifications, environmental changes (e.g., adding soft surfaces under playground equipment), and legislation (e.g., mandating bicycle helmet use) are usually more effective methods of injury prevention than strategies requiring voluntary, consistent, and frequent individual protective behaviors (e.g., explaining playground safety rules). However, behavioral change is a necessary component of even the most effective passive strategies; for example, personal protective equipment must be used properly, and depth and quality of playground surface materials must be maintained regularly (CDC, 2001).

Categories of Unintentional Injuries

This section contains descriptions of the most common causes of injuries to children, with strategies for schools to be involved in prevention and intervention. Fact Sheets on many of these injury topics are available for download and duplication from the DPH website at http://www.mass.gov/dph/fch/schoolhealth/shpubs.htm and at http://www.mass.gov/dph/fch/injury/resources.htm.

Bicycle and Wheel-Related Sports Injuries

Bicycles, which are ridden by nearly 28 million U.S. children aged 5–14, are associated with more childhood injuries than any consumer product except the automobile. In 2002, 130 children age 14 and under died in bicycle-related crashes. In 2003, nearly 285,600 children age 14 and under were treated in hospital emergency rooms for bicycle-related injuries (Safe Kids Worldwide, 2007). Nearly six million children and adolescents younger than 18 years old ride skateboards, of which 750,000 ride a skateboard weekly. Skateboarding injuries result in 50,000 visits to hospital emergency rooms annually, and 1,500 hospitalizations (Injury Free Coalition for Kids, 2003). Seventeen million people under 18 years engage in in-line skating. Each year, some 153,000 injuries are attributable to in-line skating (Injury Free Coalition for Kids, 2003; Forjuoh, 2002; American Academy of Pediatrics, 1998). In 2000, 40,500 scooter injuries were treated in emergency departments and 85% of those injuries were sustained by children younger than 15 years of age (US Consumer Product Safety Commission, 2003).

Education about bicycle and wheeled sport safety and the promotion of bike helmet use by children on all forms of wheeled recreation equipment is a major concern for injury professionals. They regard this as an area in which safety compliance could make a significant difference in injury occurrence. Experts agree that use of properly fitted and approved bike helmets (ANSI or SNELL) can reduce head injury by as much as 85% and the risk of brain injury by as much as 88%. Head injuries account for more than 60% of bicycle-related deaths. Fewer than half (41%) of children aged 5–14 wear helmets when participating in wheeled activities, and more than a third (35%) of children who use helmets wear them improperly (Safe Kids Worldwide, 2007).

Research shows that 63% of “tweens” (age 8–12) do not think they could suffer a brain injury while riding, yet the reality is that nearly half (47%) of children hospitalized for bike-related injuries suffer a traumatic brain injury. Brain injury can result from a fall of as little as 2 feet (National SAFE KIDS Campaign, 2002).

What Schools Can Do

- Teach bike/scooter/skateboard/skate safety in the classroom.
- Encourage the purchase and wearing of bike helmets.
- Develop a policy requiring helmet use for students riding bikes/scooters to school.
- Model safe bicycling behaviors.

- Organize bulk discount helmet purchase and distribution.
- Incorporate bike helmet simulation experiments into science curricula.
- Work with the local police department, Kiwanis and other groups to organize bike rodeos.
- Invite local retailers to provide incentives to children observed wearing helmets.
- Initiate a bike helmet safety day with skilled adults to assess proper use of helmets and advise students accordingly.
- Work with local community providers and business to convey a consistent message of wheel safety.

A bicycle safety fact sheet is available from DPH at http://www.mass.gov/dph/fch/schoolhealth/shpubs.htm.

Fire and Burn Injuries

Children account for 15%–20% of fire deaths and 14% of fire injuries. The number of fire injuries are highest in the under 5 age group, decline in the middle years of childhood, but rise again in the 10–14 age group. Fire deaths follow a different pattern, decreasing as children mature (U.S. Fire Administration, 2004).

Teaching home fire prevention and fire safety behaviors to young children, as well as to older children with self-care and childcare responsibilities, can save lives. In-school lessons can be supplemented with take-home materials on smoke alarms, carbon monoxide detectors, home escape plans, and practice fire drills.

Despite Massachusetts' smoke alarm laws, many fatal fires occur in residences in which smoke alarms are missing or not functioning. Families living in older housing are at especially high risk. Parents and caregivers can help children turn their understanding into useable knowledge by making and practicing individual home escape plans that take into account the needs of each family member and by conducting home fire drills after children have fallen asleep.

Burn injuries occur for preschool and school-age children in a variety of ways. Scald burn injury (caused by hot liquids or steam) is the most common type of burn-related injury among young children, while flame burns (caused by direct contact with fire) are more prevalent among older children. All children are also at risk for contact, electrical, and chemical burns (National SAFE KIDS Campaign, 2004). Scalds, while rarely fatal, are very common among preschoolers, via hot tap water, hot beverages, boiling water, and hot food. Burns may be caused by contact with cigarette lighters, home heating devices, and other hot appliances. Among children age 14 and under, hair curlers and curling irons, room heaters, ovens and ranges, irons, gasoline, and fireworks are the most common causes of product-related thermal burn injuries (National SAFE KIDS Campaign, 2004). In addition, many first-time jobs involve food preparation, which may entail a high risk of burns. (See Chapter 4 for information about school fire safety and the setting of fires at school.)

Carbon monoxide poisoning is a significant hazard and should be discussed in conjunction with fire safety. A flyer from the Massachusetts Department of Fire Services about carbon monoxide safety is available at http://www.mass.gov/dfs/osfm/pubed/firesafetytopics/carbon_monoxide_safety.htm. The U.S. Consumer Product Safety Commission also publishes a pamphlet, *The Invisible Killer,* containing information about common sources of carbon monoxide (CO) in the home and about symptoms of CO poisoning (http://www.cpsc.gov/CPSCPUB/PUBS/464.pdf).

What Schools Can Do

- Use local fire prevention officers as resources in classroom activities. Fire services have a special curriculum for use in schools.
- Teach children about basic home fire safety practices, such as installation and maintenance of smoke alarms and carbon monoxide detectors, and encourage family involvement through take-home activities.
- Teach children the "Stop, drop, and roll" principles for use if clothing catches fire, as well as the need to cool a burn with cold water and call 911.
- Teach children fire exit procedures and practice techniques such as "crawling low" under a sheet held to simulate level of good air during a fire.
- Teach children how to call for emergency help.
- Encourage families to practice home fire drills.
- Teach children about the dangers of playing with fire and fireworks.
- Include discussion of burn/scald risks and proper handling of hot or flammable materials in the safety curriculum.
- Refer students who play with fire or who set fires to appropriate services immediately (as consistent with school policy).
- Make sure staff are familiar with all safety protocols and emergency drills.

A fact sheet about fire and burn safety is available on the DPH website at http://www.mass.gov/dph/fch/schoolhealth/shpubs.htm.

Motor Vehicle Injuries

Children and Young Adolescents

Motor vehicle injuries are the greatest public health problem and leading cause of death for children (CDC, 2004). In the U.S. during 2003, 1,591 children age 14 and younger died in motor vehicle crashes, and approximately 220,000 were injured, an average of 4 deaths and 602 injuries each day (NHTSA, 2004).

Alcohol and lack of restraints are the 2 major factors resulting in deaths from motor vehicle accidents. Alcohol is a factor in 1 out of 4 vehicle occupant deaths among children 14 and younger. More than two-thirds of these fatally injured children were passengers in vehicles driven by alcohol-impaired drivers (Shults, 2004). Of the children aged 0–14 who were killed in motor vehicle crashes during 2003, more than half were unrestrained (NHTSA, 2004).

Drivers who don't use seat belts themselves are less likely to properly restrain child passengers. One study found that in almost 40% of instances where children were not properly restrained, the drivers were also unbelted (Cody, 2002). In addition, many children who ride in child safety seats are improperly secured. A survey of more than 17,500 children found only 15% of children in safety seats were correctly harnessed into correctly installed seats (Taft, 1999).

Older Teens

Two out of five deaths among U.S. teens are the result of a motor vehicle crash (CDC, 2004). In 2005, nearly 7,500 15- to 20-year-old drivers were involved in fatal crashes (National Highway Traffic Safety Administration (NHTSA), U.S. Department of Transportation, 2006). The risk for motor vehicle crashes is higher among drivers aged 16–19 than among any other age group. The presence of teen passengers increases the crash risk for unsupervised teen drivers; the risk increases with the number of teen passengers. The presence of one teenage passenger with a teen driver doubles the risk of a fatal crash, while the risk is five times higher when two or more teens ride along (Children's Hospital of Philadelphia and State Farm Insurance, 2006).

Per mile driven, teen drivers aged 16–19 are 4 times more likely than older drivers to crash (Insurance Institute for Highway Safety, 2004). The fatality rate for drivers in this age group, based on miles driven, is four times that of drivers aged 25–69 years (Children's Hospital of Philadelphia and State Farm Insurance, 2006).

This is not entirely a function of alcohol and/or drug use, although both are a factor in many teen motor vehicle accidents. Teens are actually less likely than adults to get behind the wheel after drinking, but when they do, their risk of crashing is far greater, even with low or moderate blood-alcohol levels (Zador, Krawchuck & Voas, 2000). In 2005, 25% of 16–20 year-old passenger vehicle drivers fatally injured in crashes had blood alcohol counts of 0.08 percent or higher (Insurance Institute for Highway Safety, 2007). At all levels of blood alcohol concentration, the risk of involvement in a motor vehicle crash is greater for teens than for older drivers (Insurance Institute for Highway Safety, 2000).

Other factors contributing to risk follow:

- Teens, especially those who are driving with a learner's permit or are just newly licensed, are more likely than older drivers to both underestimate and fail to recognize hazardous or dangerous situations (Fisher, Pollatsek & Pradhan, 2006).
- Teens are more likely to be impaired by sleep loss than drivers even a few years older (Groeger, 2006). In a survey of teen drivers by the National Sleep Foundation, over half said they had driven while drowsy at least once in the last year, and 15% at least once per week (Carskadon, Minell & Drake, 2006).
- Teenagers' crashes and violations are more likely to involve speeding than those of older drivers (Insurance Institute for Highway Safety, 2005).
- Compared with older drivers, teenagers as a group are more willing to take risks and less likely to use safety belts (Williams, McCartt & Geary, 2003).
- Teens frequently drive in the midst of risky distractions, including loud music, passengers who are using alcohol or marijuana, and cell phone conversations (Children's Hospital of Philadelphia and State Farm Insurance, 2006).

When compared with other age groups, teens have the *lowest* rate of seat belt use. In 2003, 18% of high school students reported that they rarely or never wear seat belts when riding with someone else (CDC, 2004).

What Schools Can Do

- Provide educational materials to parents.
- Encourage students to buckle up on every ride, and remind family and friends to buckle up also.
- Provide age-appropriate instruction in passenger safety.
- Develop school policies reinforcing Massachusetts law. Driver-education instructors and students must wear a safety belt on every ride.
- Work with local law enforcement and community groups to increase compliance with the law.
- Sponsor alcohol-free prom and graduation parties, as part of a comprehensive education and prevention curriculum.
- Invite local ambulance services to bring in their educational programs that target teens. (It should be noted that although many communities provide a mock car accident during prom season, this has not been evaluated as an effective strategy in reducing drinking and driving or increasing safe driving among teens. It can, however, increase awareness of and reinforce sound community safety emergency planning.)

A fact sheet on motor vehicle occupant protection is available on the DPH website at http://www.mass.gov/dph/fch/schoolhealth/shpubs.htm.

Pedestrian Injuries

Prevalence

Pedestrian injuries are the second leading cause of fatal unintentional deaths among school-age children (5–18 years of age) in Massachusetts and the most frequent cause of motor vehicle traffic-related hospitalizations for children aged 5–9. Each year, there are approximately 11 deaths and more than 1,300 nonfatal pedestrian injuries in the school-age population. Adolescents aged 15–18 years old have the highest rates of nonfatal pedestrian injuries, and boys are 1.5 times more likely to be injured as pedestrians than girls.

According to the Harborview Injury Prevention and Research Center, the most common actions by children leading to pedestrian injuries involve dashing or darting into the street. These actions account for 60%–70% of pedestrian injuries for children under the age of 10. Contributing to the vulnerability of younger school-age children is their inability to judge the speed and distance of oncoming cars, their small size, their narrow field of vision, poor impulse control, and difficulty judging the direction of sounds. According to Safe Kids Worldwide, auditory and visual acuity, depth perception, and proper scanning ability develop gradually and do not fully mature until at least age 10. For this reason, the National SAFE KIDS Campaign (NSKC) recommends that children under 10 never be allowed to cross streets alone.

Important Preventive Messages

Pedestrian safety training for children should teach about traffic signs and signals and safe walking zones, while emphasizing that motorist compliance cannot be relied upon. National surveys by the NSKC in 2000 and 2003 found that two-thirds of drivers speed in school zones, and nearly half do not stop at stop signs in school zones and residential areas.

Additional points the NSKC recommends emphasizing in safety training include:

- Cross streets only at a corner, using traffic signals and crosswalks whenever possible;
- Do not enter the crosswalk if a car is oncoming. The car may not have enough stop time.
- Make eye contact with drivers prior to crossing in front of them;
- Don’t assume because you can see the driver, the driver can see you;
- Look left, right, and left again when crossing a street, and continue looking as you cross;
- Never run into the street; and
- Walk facing traffic, as far to the left as possible, when sidewalks are not available.

What Schools Can Do

- Teach pedestrian safety in the classroom at the beginning of each year.
- Demonstrate and practice safe street crossing.
- Demonstrate proper school arrival and departure as well as safe crossing of the street in front of the school bus.
- Encourage school personnel to use opportunities such as walking field trips to reinforce safe pedestrian behaviors among children.
- Help students notice pedestrian hazards and learn how to avoid them.
- Promote the use of retro-reflective clothing and/or accessories for use at those times when walking in the dark is unavoidable.
- Develop pedestrian policies for the school community.
- Create pedestrian crossing areas protected from bus and auto traffic.

- Encourage parent participation in teaching and reinforcement of safe pedestrian behaviors.
- Promote involvement of public safety and community agencies in creating safe walking policies and safe areas while enforcing pedestrian-related traffic laws.

A fact sheet about pedestrian safety is available on the DPH website at http://www.mass.gov/dph/fch/schoolhealth/shpubs.htm.

Playground Injuries

Prevalence

Playgrounds are the setting for most of the injuries sustained by children aged 5–14 in the school environment. A special study of playground injuries and deaths, conducted in 2001 for the U.S. Consumer Product Safety Commission, concluded that each year emergency departments treat more than 200,000 children 14 and younger for playground-related injuries. Approximately 45% of those injuries are severe, including fractures, internal injuries, concussions, dislocations, and amputations. Injuries due to falls from playground equipment result in a higher proportion of severe injuries than either bicycle or motor vehicle crashes (Phelan, 2001). Because playgrounds pose a higher risk of injury than most other areas of the school, this topic is discussed in 2 chapters of this manual: Chapter 4 covers playground design considerations and equipment safety, and this chapter concentrates on issues related to safe play and supervision.

Prevention Issues

It is natural for children to take risks while playing on school playgrounds, however it is important that playgrounds not contain items that can cause injury in the natural course of play. Continuous attention must be given to ensuring playgrounds are a safe play area. Children, especially younger children, may not know the limits of their own physical development, making them especially prone to injury. One recent study of trends and patterns of injury in public playgrounds (Phelan, 2001) found that children aged 5–9 are the age group most often requiring emergency department care for playground injuries. Furthermore, most school populations include some children with cognitive and physical limitations that increase injury risk. The most critical areas to address are equipment height, surfaces, maintenance, supervision, and equipment spacing. Detailed information about the importance of shock absorbing surfaces and their maintenance can be found at http://www.kidsource.com/CPSC/playground_surface.html. (See Chapter 4 for a detailed discussion of safe playground facilities and equipment maintenance.)

Lack of supervision is associated with 40% of playground injuries (National SAFE KIDS Campaign, 2004). A recent study found that children play without adult supervision more often on school playgrounds (32% of the time) than they do on playgrounds in parks (22%) or at child care centers (5%) (National SAFE KIDS Campaign, 2004). Effective supervision requires:

- removing visual barriers;
- positioning adults for optimal viewing;
- requiring adults assigned to playground supervision to focus on supervision and observation of the children;
- promulgating rules and protocols regarding clothing, restrictions, and safe play; and
- sharing those rules with students and parents.

What Schools Can Do

- Establish and promulgate safe playground policies, and provide training for staff monitors and families to ensure compliance.
- Routinely conduct hazard assessments of the playground, and reduce risk by repairing or removing hazards such as broken equipment or insect hives.

- Promote safe play behaviors regularly through classroom lessons, audiovisuals, and rules developed with student input.
- Ensure adequate adult supervision on playgrounds, using trained playground monitors.
- To prevent strangulation, do not allow children to wear upper outerwear with drawstrings while playing on playground equipment.
- Provide appropriate surfacing under playground equipment.
- Provide safe access and, when necessary, adapted play equipment and higher levels of supervision for children with disabilities.
- Require school personnel to track playground injuries, including the age of the child and the equipment involved.

Additional information may be found in Chapter 4 of this manual and in the Consumer Product Safety Commission's *Handbook for Public Playground Safety*, available at http://www.cpsc.gov/SPSCPUB/PUBS/playpubs.html. A fact sheet about playground safety is available on the DPH website at http://www.mass.gov/dph/fch/schoolhealth/shpubs.htm.

School Bus Safety

School buses are associated with relatively few injuries and deaths. Children aged 4–7 are at highest risk of injury, with two-thirds of deaths occurring as children get on or off the bus. The National Highway Traffic Safety Administration recommends that all children who are school bus passengers be taught to:

- be at the bus stop at least 5 minutes before the bus is scheduled to arrive;
- stand at least 6 feet away from the curb, lining up away from the street when the bus approaches;
- as the bus approaches, stand still until the bus stops, the door opens, and the driver gives a go-ahead to step into the bus;
- walk on the sidewalk or along the side of the road to a point at least 10 feet ahead of the bus before crossing, when it is necessary to cross the street in front of the bus;
- when walking beside or in front of the bus, make sure that the bus driver can see you and that you can see the bus driver;
- use the handrails to avoid falls;
- be careful with straps and drawstrings on clothing and book bags to avoid getting caught on handrails or doors when exiting the bus;
- never walk behind the bus or any closer than 6 feet from the side of the bus; and
- tell the bus driver if you drop something near the bus (never try to pick it up).

What Schools Can Do

- Educate children and parents/guardians, monitors, and faculty about safe bus-riding behaviors.
- Reinforce safe behaviors on field trips.
- Develop appropriate bus pick-up and drop-off policies.
- Conduct bus safety classes and evacuation drills, as required by Massachusetts law.
- Work with a local traffic enforcement officer to ensure adherence to bus-related traffic laws.
- Assess location of school buses and length of time idling to ensure environmental safety.

A fact sheet about school bus safety is available on the DPH website at http://www.mass.gov/dph/fch/schoolhealth/shpubs.htm.

Sports Safety

Sports, including activities such as cheerleading, are the most frequent cause of injuries for adolescents. While the vast majority of these injuries are minor, serious injuries and even deaths

can occur on playing fields and in gymnasiums, and must be taken into account in schools' safety and emergency planning. Schools should provide training for activities advisors to ensure safe student participation.

Severe and Potential Fatal Injuries

Concussions account for 3%–5% of injuries sustained by athletic participants (Mueller & Cantu, 2003). A concussion is a traumatic brain injury caused by a blow or jolt to the head. It can range from mild to severe and can disrupt the way the brain normally works. Concussions can happen in any sport and should never be ignored or taken lightly. A concussion is a major injury that can have life-threatening results. Symptoms of a concussion may include:

- dizziness;
- confusion;
- nausea;
- vomiting;
- headache;
- blurred or double vision;
- ringing in the ears;
- a funny taste in the mouth;
- poor coordination or balance;
- concentration or memory problems;
- sensitivity to light or noise;
- feeling foggy or groggy;
- feeling sluggish; and
- emotional instability (anger, crying, and anxiety).

The most serious danger of concussion is **Second Impact Syndrome (SIS)**, a sudden swelling of the brain, occurring when an athlete sustains a second blow to the head while still symptomatic from a previous concussion. Even though the second blow may occur days or weeks after the first or may be no more powerful than a slap, it can cause a sudden swelling of the brain that quickly leads (within 2 or 3 minutes) to unconsciousness or cardiac arrest. Fifty percent of people who sustain SIS die, while the rest have a very high risk of permanent brain damage (Massachusetts Medical Society, 1999, 2003).

Recognizing these dangers, CDC, with the support of partners and experts in the field, has developed a multimedia educational toolkit called *Heads Up: Concussion in High School Sports,* which is available at http://www.cdc.gov/ncipc/tbi/Coaches_Tool_Kit.htm. This tool kit is designed for athletic staff (coaches, athletic directors, and trainers) as well as parents/guardians and school health personnel, and is meant to "provide a commonsense approach to help raise awareness and prevent sports-related concussions among athletes" (CDC Injury Center director Dr. Ileana Arias in the Introduction to the Tool Kit, 2005).

The Massachusetts Medical Society also offers a free, downloadable brochure, *Concussion, A Coaches' Guide for Sideline Evaluation*, which explains the symptoms of concussion and includes tests for assessing the condition and recommendations for basic treatment at the time of injury. The brochure is available at http://www.massmed.org/pages/concussion_brochure.asp.

Death in healthy children and adolescents participating in sports can also be caused by a relatively uncommon event called **Commotio Cordis,** an episode of ventricular fibrillation (VF) induced by a sudden blunt force or trauma to the chest, typically from a baseball, hockey puck, other high-velocity object, or collision with another player or stationary object. For VF to occur, the blow must

happen at a precise moment in the heart's electrical cycle, causing the heart to "fibrillate" (Link et al., 1999).

Research suggests that, while use of improved sports equipment such as chest protectors and softer balls may provide some protection, such events are not completely preventable. However, according to the American Heart Association, the high rate of fatalities associated with Commotio Cordis is preventable.

Note: With early recognition and prompt action, a large percentage of the sudden cardiac arrests caused by Commotio Cordis are reversible with early application of CPR and defibrillation, and a phone call for advanced support at 9-1-1. (see Chapter 2 for additional information on emergency training and equipment). Response time is a critical factor in resuscitating victims of Commotio Cordis. Although the general survival rate is 16%, it approaches 25% when CPR and an automatic external defibrillator (AED) are employed within 3 minutes of the event (Salib et al., 2005).

Other severe injuries associated with sports include spinal cord injury and eye trauma.

Common Acute Sports Injuries

Acute injuries are injuries that occur suddenly during activity. Of this type, as described by the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS, 2004), the most common injuries are:

- *Sprains*, stretches or tears of a ligament, the band of connective tissues that joins the end of one bone with another;
- *Strains*, the twisting, pulling, or tearing of a muscle or tendon, a cord of tissue connecting muscle to bone;
- *Knee injuries*, including bone bruises or damage to the cartilage or ligaments;
- *Compartment Syndrome*, in which swollen muscles fill the membranous compartment in which they are enclosed, along with nerves and blood vessels, causing interference with nerves and blood vessels, as well as damage to the muscles themselves;
- *Achilles Tendon injuries,* including severed or torn tendons;
- *Fractures of bones or growth plates* (the area of developing tissues at the end of the long bones in growing children and adolescents). **Note:** Growth plate injuries can have potentially serious complications that impede proper development of limbs. For this reason, growth plate fractures should be treated by an orthopedic surgeon who treats bone injuries in children and adolescents (American Academy of Orthopaedic Surgeons, 2004); and
- *Joint dislocations*, most frequently hand and shoulder.

Overuse or Chronic Injuries

Overuse or chronic injuries are usually the result of repetitive training activities such as running, overhand throwing, or tennis serves. These include:

- *Stress fractures,* tiny cracks in the bone's surface often caused by repetitive overloading (such as in the feet of a basketball player who is continually jumping on the court);
- *Shin splints,* pain along the tibia or shin bone, the large bone in the front of the lower leg which may be caused by overuse or incorrect use of the lower leg; improper stretching, warmup, or exercise technique; overtraining; running or jumping on hard surfaces; and running in shoes that don't have enough support (NIAMS, 2004);
- *Tendonitis,* inflammation of the tendon caused by repetitive stretching, which can result in rupture of the Achilles Tendon; and
- *Bursitis,* an inflammation of the bursa (small sacs present in joints such as the shoulder, elbow, or knee).

Although overuse injuries are less urgent and may seem less important than acute injuries, they can result in lifelong conditions such as tendonitis and other mobility impairments.

Heat-Related Illnesses and Sun Exposure

Playing rigorous sports in hot weather requires close monitoring of both body and weather conditions. Heat injuries are always dangerous and can be fatal. Children perspire less than adults and require a higher core body temperature to trigger sweating. Heat-related illnesses include dehydration, heat exhaustion (nausea, dizziness, weakness, headache, pale and moist skin, heavy perspiration, normal or low body temperature, weak pulse, dilated pupils, disorientation, fainting), and heat stroke (headache, dizziness, confusion, and hot, dry skin, possibly leading to vascular collapse, coma, and death). A further health concern is sun safety: Students and staff should take precautions to avoid excessive sun exposure. See Chapter 5 for further discussion of sun safety.

What Schools Can Do

- Require coaches to be trained in each sport they coach and in sports injury prevention and safety.
- Require preseason physical exams for all participants (consistent with M.G.L. c.71, s.57), and ensure particular attention is paid to identifying athletes with a history of brain or spinal injuries.
- Collect and maintain injury data from all practices and games.
- Discourage injured athletes from playing while injured and reinforce this message through coaches.
- Require that sports participants use the right protective equipment during all practices and games and that all equipment, particularly helmets, are properly fitted.
- Maintain and improve protective equipment.
- Develop clinics that assist athletes and coaches with training and conditioning.
- Enforce rules prohibiting dangerous moves (e.g., “spearing” in football, or free-falling flips or swan dives from any type of toss, partner stunt, or pyramid in cheerleading).
- Make sure that coaches, athletic directors, and sports participants know the signs and symptoms of concussion and are aware of the danger of Commotio Cordis.
- Develop a year-round concussion action plan that can be used for all athletic activities including games and practice.
- Make sure that coaches and athletic directors keep athletes with known or suspected concussions from play until appropriate medical personnel have evaluated them and given them permission to return to play.
- Inform parents/guardians and athletes about specific risks and protective strategies.
- Arrange to have EMTs or paramedics, at a minimum, and a physician if possible, present at all games
- Train coaches, athletic directors, and other sports personnel in CPR and use of an AED.
- Have an AED and a fully stocked emergency kit available at all games, sporting events, and practices, with trained personnel available.
- Maintain and improve the surfaces of playing fields.
- Develop and implement policies for heat and sun safety (see Chapter 5).

For additional information on sports safety, see Chapter 10. A fact sheet about sports safety is also available on the DPH website at http://www.mass.gov/dph/fch/schoolhealth/shpubs.htm.

Work-Related Injuries

Large numbers of teens work after school, during school vacations, and on weekends. Teens also work during school hours, in jobs secured through school in cooperative education, school-to-career, internship, and career technical education programs. According to the Bureau of Labor

Statistics' Current Population Survey, in 2002, 34% — over 50,000 — of the Commonwealth's 16- and 17-year-olds worked on any given day, compared with 27% nationally. In addition, many younger teens also work, and national studies have found that 80% of adolescents have held jobs by the time they have completed high school.

Work-related injuries constitute a significant proportion of injuries to adolescents. The leading causes of work related injuries are: sprains and strains (e.g., back injuries from heavy lifting); cuts, lacerations, and punctures (e.g., lacerations from opening boxes); bruises, contusions, and crushings; and heat burns (e.g., in restaurant kitchens, repairing hot equipment). The *Teens at Work Project* of DPH's Occupational Health Surveillance Program identified 5,530 work-related injuries to Massachusetts teens sustained between July 1993 and June 2003 — approximately 550 injuries per year. More than half of the injuries occurred in just 4 industries: restaurants (35%), grocery stores (14%), nursing homes (5%), and department stores (5%). For each of these industries, the *Teens at Work Project* has created fact sheets that may be used by industry, labor, educators, parents, and teens themselves in developing injury prevention strategies. These fact sheets and other *Teens at Work* materials are available on the DPH website, http://www.mass.gov/dph/ohsp, under "Work-related injuries to Workers under Age 18."

Violence in the workplace is another hazard many teen workers face. Among working teens surveyed at one large Massachusetts high school, 26% reported having been verbally assaulted at work, 10% reported being sexually harassed, and 11% reported being physically assaulted on the job (Personal Communication with K. Rauscher, 2002). Another study reported that 27% of teens and managers working in retail pharmacies in Massachusetts reported having experienced a robbery in their workplace (MassCOSH, 2005).

As adolescents begin to explore the world of work, they need to learn how to recognize the hazards existing in all types of jobs and how to say no to unsafe or restricted work. Guiding adolescents and parents toward choosing a safe and meaningful working experience that does not detract from school should be a goal of Massachusetts schools and communities. In addition, schools have a responsibility to ensure that students are provided safe and healthy work experiences when placing students in internships and job placements. (See also Chapter 5 for physical examination requirements for work permits for teens aged 14–16.)

What Schools Can Do

- Incorporate workplace health and safety education into curricula for all students.
- Include workplace health and safety instruction for students in job readiness programs.
- Ensure that schools have the necessary training to issue work permits, in accordance with child labor laws.
- Provide training to teachers, staff, and students on recognizing and preventing job hazards, including vulnerability to violence, and inform students of their rights and responsibilities under child labor laws and workplace health and safety regulations.
- Disseminate materials to parents/guardians, students, and internship locations on child labor laws and workplace health and safety.
- Work with employers of teens to ensure compliance with child labor laws and a safe and healthful workplace for all employees.
- Regularly visit employers of teens placed by the school to ensure that health and safety standards are being met.
- Ensure that all shops in schools comply with OSHA standards.
- Review cases of injuries among working teens, identify causes of injuries, and identify ways to prevent similar injuries from happening to others.

- Conduct field trips to or view slides of workplaces, and have students use a checklist to identify potential job hazards.
- Report cases of work-related injuries to teens under 18 immediately to DPH's Occupational Health Surveillance Program.

Exhibit 13-2 provides a compilation of key child labor laws, and Exhibit 13-3 provides a fact sheet about teens at work.

Dangerous Games (The Choking Game)

The most prominent example of an activity that is regarded as a game by children and adolescents and having catastrophic or deadly consequences is the "choking game," also known as "airplaning," "the passout game," "space monkey," "space cowboy," "blackout," "rising sun," "knockout," or by other names. In this activity, pressure is applied to the neck to restrict blood flow to the brain to the point of unconsciousness, and then the pressure is released, resulting in a feeling of euphoria. Many children and teens, unaware of the dangers of such games, regard them as "cool" and a harmless way to obtain a drug-free high. Although children and teens have been known for many years to engage in such activities, the dangers are now increased by the fact that youth are using ligature devices and playing the game alone rather than with others.

Information about this activity is spread among children and adolescents by word of mouth, frequently at school. A recent survey of 1,000 children ages 10-14 found that the most frequent response to questions about where they had learned about the game and where they had played it was "at school" (The DB Foundation, 2007).

Obtaining reliable statistics on the exact number of injuries or deaths caused by the choking game is difficult because incidents may be reported as attempted or completed suicides. In 2006, there were 83 reported deaths or injuries in the U.S., however there are statistical estimates that place the likely actual number of deaths and injuries resulting from this activity above 500 per year (The DB Foundation, 2007).

Who Is at Risk?

A brochure for parents prepared by the Collier Country (FL) Sheriff's Office describes the population most likely to engage in this potentially deadly activity:

- primarily children in age range 9–15 (middle school);
- children as young as 6 or 7, especially if their older siblings play the game;
- high achievers, who are not using drugs or alcohol;
- children looking for a thrill-seeking activity; and
- children looking for a "secret" activity.

Signs of Involvement

Some signs that children may be engaging in the choking game are:

- questions about the sensation or dangers of strangulation;
- disorientation after being alone;
- bloodshot eyes;
- changes in attitude (aggressive behavior);
- chatroom conversations about the game, or websites visited;
- complaints of headaches;
- petechiae (tiny red dots) on face or cheeks;
- ligatures (belts, leashes, ropes, cords) tied in knots and found in unusual places;
- bruising or red marks around the neck; and
- wear marks on furniture.

What Schools Can Do

- Inform all staff about the dangers of the choking game and the code names by which it is known, so they can be alert for references to this activity.
- Ensure adequate supervision on playgrounds during recess periods and in bathrooms.
- Lock unused rooms and storage areas.
- Educate parents/guardians about this dangerous practice and signs to watch for.

Prevention materials for parents and schools are available online at:
http://www.deadlygameschildrenplay.com/en/aware-download.asp
http://www.thedbfoundation.com/

VIOLENCE

Violence is a preventable public health problem characterized by threatened or actual human use of force or power against oneself, another person, or a group or community that is likely to result in physical or psychological harm or deprivation. Violence disproportionately affects youth and often occurs in environments traditionally viewed as safe havens, such as homes and schools (Edwards, Rubin, & Rubin/Louisiana Public Broadcasting, 2005). Although school shootings receive the bulk of media attention, incidents such as physical assaults, property crimes, intimidation, and sexual harassment are much more common (National Center for Education Statistics, 2006). More information is available at: http://nces.ed.gov/programs/crimeindicators/.

This section contains descriptions of the most common forms of interpersonal violence and self-inflicted injury, with suggestions about what school staff can do to create a positive school climate, prevent violence, and intervene when required. It should be noted that various types of violence often overlap. (**Note:** Suicide is covered in greater detail in Chapter 11.)

Legal/Regulatory Issues

This section provides a brief overview of *some* general laws relevant to prevention of intentional injuries and violence in Massachusetts's public schools. For more detailed information on each law, please check the DOE website at http://www.doe.mass.edu, as well as other websites listed here.

Protecting Students and Preventing Harm

Child Abuse and Neglect:

Child abuse and neglect encompass the following, as defined in DSS regulations 110 CMR 2.00:

- *Abuse:* The non-accidental commission of any act *by a caretaker* upon a child under age 18 which causes, or creates a substantial risk of physical or emotional injury; or constitutes a sexual offense under the laws of the Commonwealth; or any sexual contact between a caretaker and a child under the care of that individual. This definition is not dependent upon location (i.e., abuse can occur while the child is in an out-of-home or in-home setting).
- *Neglect:* Failure *by a caretaker,* either deliberately or through negligence or inability, to take those actions necessary to provide a child with minimally adequate food, clothing, shelter, medical care, supervision, emotional stability and growth or other essential care; provided, however, that such inability is not due solely to inadequate economic resources or solely to the existence of a handicapping condition. This definition is not dependent upon location (i.e., neglect can occur while the child is in an out-of-home or in-home setting).
- *Physical Injury:* Death; or fracture of a bone, a subdural hematoma, burns, impairment of any organ, and any other such nontrivial injury; or soft tissue swelling or skin bruising,

depending upon such factors as the child's age, circumstances under which the injury occurred, and the number and location of bruises; or addiction to a drug or drugs at birth; or failure to thrive.

- *Emotional Injury:* An impairment to or disorder of the intellectual or psychological capacity of a child as evidenced by observable and substantial reduction in the child's ability to function within a normal range of performance and behavior.
- *Shaken Baby Syndrome:* Infants, babies, or small children who suffer injuries or death from severe shaking, jerking, pushing or pulling may have been victims of Shaken Baby Syndrome. The act of shaking a baby is considered physical abuse, as spinal, head and neck injuries often result from violently shaking young children.
- *Institutional Abuse or Neglect:* Abuse or neglect which occurs in any facility for children, including, but not limited to, group homes, residential or public or private schools, hospitals, detention and treatment facilities, family foster care homes, group day care centers, and family day care homes.

Under Massachusetts law (M.G.L. c.119, s.51A) Department of Social Services (DSS) is the state agency that receives all reports of suspected abuse or neglect of children. This statute requires professionals whose work brings them into contact with children to notify the Department of Social Services (DSS) if, in their professional capacity, they have "reasonable cause to believe that a child under the age of eighteen years is suffering physical or emotional injury" resulting from abuse, including sexual abuse, or from neglect, including malnutrition, or if they suspect the child is at risk of being abused or neglected.

The following school personnel are "mandated reporters" under this law: physicians, dentists, nurses, public or private school teachers, educational administrators, psychologists, guidance or family counselors, social workers, school attendance officers, and allied mental health and licensed human service professionals. Other professionals who may come into contact with children through schools and are considered mandated reporters include drug and alcoholism counselors, clergypersons, persons performing clergypersons' duties on behalf of a church or religious body, and persons employed by a church or religious body to supervise, educate, coach, train, or counsel a child on a regular basis.

Mandated reporters who suspect abuse and neglect must immediately make an oral report of the situation to DSS and follow up with a written report within 48 hours. Employees of institutions such as schools may, however, choose to notify the person in charge of the school (e.g., principal) or that person's designated agent, in which instance that person becomes responsible for making the report to DSS as described above. For additional detail, see http://www.mass.gov/legis/laws/mgl/119-51a.htm.

In addition to mandated reporters, reports may be filed by any person who has reasonable cause to suspect that a child is suffering from or is at risk of abuse and neglect. If an allegation of abuse is made against a school staff member and brought to the school district administration, school administration, or school staff, the administration must immediately file a report of suspected abuse or neglect of the staff member directly with DSS. M.G.L. c.71, s.37L requires school districts to inform all professional staff of their reporting responsibilities under the child abuse reporting law. There is a sizeable fine for failure to report suspected incidents of abuse or neglect.

For additional information on child abuse, including signs and symptoms, see the section on Child Abuse and Neglect further on in this chapter and go to the DSS website: http://www.mass.gov/dss.

Reckless Endangerment to Children: It is a felony punishable by up to 5 years in state prison for any person with temporary or permanent responsibility for the care of a child under age 14 to

"wantonly or recklessly" permit such child to suffer substantial bodily injury (M.G.L. c.265, s.3J). Further, section 13L of the same law makes it a crime, punishable by up to 2½ years in jail, for any person (whether responsible for the care of the child or not), by his or her actions or failure to act when obliged to, to "wantonly or recklessly" create "a substantial risk of serious bodily injury or sexual abuse" to a child under the age of 14 (and in certain circumstances under the age of 18).

Child Enticement: Under M.G.L. c.265, s.26C, it is a felony punishable by up to 5 years in state prison to "entice, lure, induce, persuade, tempt, incite, solicit, coax, or invite" any child under 16 (or older person believed to be underage) to enter or leave or stay in any building, vehicle, or place, if such act is done with the use of force or with the intent to commit rape, indecent assault and battery, dissemination of material harmful to children, unnatural and lascivious acts, indecent exposure, or certain other sexual offenses.

Protection Against Discrimination and Harassment: State and federal laws protect students against discrimination and harassment based on race, color, religion, national origin, sexual orientation, gender, and/or disability. M.G.L. c.76, s.5 prohibits public schools from discriminating against students on the basis of race, color, sex, religion, national origin, or sexual orientation. See http://www.mass.gov/legis/laws/mgl/76-5.htm. The Massachusetts Board of Education's regulations on equal educational opportunity are posted at http://www.doe.mass.edu/lawsregs/603cmr26.html?section=all.

Federal civil rights laws prohibit institutions receiving federal funding, such as school districts, from discriminating on the basis of race, color, or national origin (Title VI of the Civil Rights Act of 1964), sex (Title IX of the Education Amendments of 1972), and disability (Section 504 of the Rehabilitation Act of 1973). Information on these federal civil rights laws is available from the Office for Civil Rights of the U.S. Department of Education at http://www.ed.gov/about/offices/list/ocr/know.html.

Prohibition Against Hazing: M.G.L. c.269, ss.17, 18, and 19 prohibit the crime of hazing and require secondary schools to notify students and student groups of this prohibition. See http://www.mass.gov/legis/laws/mgl/269-17.htm.

Prevention of Dating Violence: Several laws may be implicated in dating violence situations. See generally: M.G.L. c.209A (restraining orders and abuse prevention) and M.G.L. c.265 (crimes of assault, stalking, and rape). Information on programs to prevent and address dating violence is available on the DOE website at http://www.doe.mass.edu/ssce/tdv/.

Providing a Safe Environment

Criminal Background (CORI) Checks: M.G.L. c.71, s.38R requires all public and private schools to conduct criminal background checks on current and prospective employees, volunteers, school transportation providers, and others who may have direct and unmonitored contact with children. M.G.L. c.6, s.172I requires schools to obtain CORI data of employees of taxicab companies that have contracted with schools to provide transportation to pupils pursuant to M.G.L. c.71, s.7A. See http://www.mass.gov/legis/laws/mgl/71-38r.htm and http://www.mass.gov/legis/laws/mgl/6-172i.htm. Detailed information on CORI requirements for schools is available on the DOE website at http://www.doe.mass.edu/lawsregs/advisory/cori.html and on the Criminal History Systems Board's website at http://www.mass.gov/chsb/.

Sex Offender Registry Information: M.G.L. c. 6, ss.178C-178O created a sex offender registry and a system of community notification regarding the presence of sex offenders. Information about the law, a listing of certain identified sex offenders, and information about how communities can support sex offender management is available at http://www.mass.gov/sorb.

A Department of Education advisory opinion on this law in connection with schools is posted at http://www.doe.mass.edu/lawsregs/advisories.html.

Internet Safety: The federal Children's Internet Protection Act of 2000 (CIPA) requires public schools and libraries receiving funding support for Internet access or internal connections from the Schools and Libraries Program of the Universal Service Fund (commonly known as "E-Rate") to put Internet safety policies and technology protection measures in place. In early 2001, the Federal Communications Commission (FCC) issued rules implementing CIPA, stating:

- An Internet safety policy must include technology protection measures to block or filter Internet access to pictures that (a) are obscene, (b) are child pornography, or (c) are harmful to minors, for computers that are accessed by minors.
- Schools subject to CIPA are required to adopt and enforce a policy to monitor online activities of minors.
- Schools and libraries subject to CIPA are required to adopt and implement a policy addressing: (a) access by minors to inappropriate matter on the Internet; (b) the safety and security of minors when using electronic mail, chatrooms, and other forms of direct electronic communications; (c) unauthorized access, including so-called "hacking," and other unlawful activities by minors online; (d) unauthorized disclosure, use, and dissemination of personal information regarding minors; and (e) restricting minors' access to materials harmful to them.

Additional information about CIPA requirements and certification are available from the Universal Service Administrative Company (USAC), which administers the E-Rate program under the direction of the FCC. See http://www.sl.universalservice.org.

Student Conduct and School Disciplinary Authority

Codes of Conduct/Student Handbooks: M.G.L. c.71, s.37H requires the superintendent of every school district to publish the district's policies pertaining to the conduct of teachers and students. The code of discipline and student handbook must include procedures assuring due process, standards and procedures for suspension and expulsion of students, and standards and procedures to ensure school building security and safety of students and school personnel.

In each school building containing grades 9–12 inclusive, the principal, in consultation with the school council, prepares a student handbook setting forth rules of student conduct. The handbook must be distributed to all students and made available to anyone who requests it. The school council reviews the student handbook each spring to consider changes to take effect the following September, but it may consider policy changes at any time. The full text of M.G.L. c.71, s.37H is at http://www.mass.gov/legis/laws/mgl/71-37h.htm.

School Principal's Authority to Expel Students for Certain Types of Misconduct: M.G.L. c.71, s.37H authorizes (but does not require) the school principal to expel a student for the following offenses at school or school-related events: possession of a dangerous weapon, possession of a controlled substance as defined in M.G.L. c.94C, and assault on school staff. See http://www.mass.gov/legis/laws/mgl/71-37h.htm.

M.G.L. c.71, s.37H½ authorizes the school principal to suspend a student upon issuance of a criminal complaint charging the student with a felony or upon issuance of a felony delinquency complaint against a student, if the principal "determines that the student's continued presence in school would have a substantial detrimental effect on the general welfare of the school." The principal may expel a student who is convicted of a felony or upon an adjudication or admission in

court of guilt with respect to such a felony or felony delinquency, after the same determination. See http://www.mass.gov/legis/laws/mgl/71-37h.5.htm.

Prior to suspension or expulsion, students are entitled to due process protections, including notice of the charges, the opportunity to respond, and the right to appeal the decision. For additional guidance and updates on laws affecting school discipline, check the following section of the DOE website: http://www.doe.mass.edu/lawsregs/advisories.html. M.G.L. c.71, s.37H½

Discipline of Special Education Students: Discipline procedures for students with disabilities (particularly long-term suspensions and expulsions) are governed by the federal Individuals with Disabilities Education Act (IDEA), which should be read in conjunction with the state laws on student discipline, M.G.L. c.71, s.37H and 37H½. The 2004 reauthorization of IDEA made several changes regarding discipline of students with disabilities, effective July 1, 2005. See Section 615(k) of P.L. 108-446, available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108_cong_public_laws&docid=f:publ446.108. Guidance from the U.S. Department of Education Office of Special Education Programs (OSEP) on the discipline provisions in IDEA is posted at http://www.ed.gov/policy/speced/guid/idea/tb-discipline.doc.

Firearms and Other Dangerous Weapons: M.G.L. c.269, s.10 prohibits the carrying of loaded or unloaded firearms on school grounds without specific authorization. See http://www.mass.gov/legis/laws/mgl/269-10.htm. Additionally, the federal Gun-Free Schools Act requires school districts receiving certain federal funds to expel from school for not less than 1 year any student in possession of a firearm at school. The superintendent of schools may modify the expulsion requirement on a case-by-case basis. The federal law also requires the school district to refer to the criminal justice or juvenile delinquency system any student who brings a firearm to school. For further information, see http://www.ed.gov/programs/dvpformula/gfsaguid03.doc.

M.G.L. c.71, s.37L requires school personnel to take certain steps, including notifying police and DSS, if a student possesses or uses a dangerous weapon on school grounds. See http://www.mass.gov/legis/laws/mgl/71-37l.htm.

Use of Physical Restraint: M.G.L. c.71, s.37G forbids the use of corporal punishment, but it does permit the use of reasonable force by teachers, employees, or other agents of the school committee “as is necessary to protect pupils, other persons, and themselves from an assault by a pupil.” When such an assault occurs, the principal is required to file a detailed report with the school committee.

DOE regulations 603 CMR 46.00 address the use of physical restraints in schools. According to these regulations, physical restraint of a student may be necessary when other, nonphysical interventions have been tried and failed or are judged to be inadequate to the circumstances, and when a student’s behavior poses a threat of *imminent, serious, physical harm* to self and/or others. Physical restraint should not be used as a response to property destruction, school disruption, refusal to comply, or verbal threats.

The primary definition of physical restraint in these regulations is “the use of bodily force to limit a student’s freedom of movement.” Other types of restraint addressed include:

- Chemical restraint (must have physician’s order and parent/guardian consent);
- Mechanical restraint (must have physician’s order and parent/guardian consent);
- Seclusion restraint (defined as “physically confining a student alone in a room or limited space without access to school staff”; this type of restraint is prohibited by law);
- Time-out (staff remains accessible to the student); and

- Extended restraint (longer than 20 minutes; this type of restraint increases the risk of injury and requires additional written documentation and report to DOE).

603 CMR 46.00 ensures every student participating in a Massachusetts public education program is protected from the unreasonable use of physical restraint. The regulation permits use of physical restraint only after other less intrusive alternatives have failed or been deemed inappropriate, and it requires that it be administered with extreme caution and only by trained personnel.

Schools are expected to develop written policies regarding appropriate responses to student behavior that may require immediate intervention. These procedures must be reviewed annually and provided annually to school staff and to parents/guardians of enrolled students. Key aspects of the school restraint policy, which is reviewed annually by all school staff, include:

- methods of prevention of need for physical restraint;
- types of restraint and related safety considerations;
- administering restraint in accordance with student needs and limitations; and
- required reporting and documentation.

If physical restraint is needed, and whenever possible, an adult witness should be available, if possible. Schools must designate staff members who are authorized to serve as schoolwide resources to assist in ensuring proper administration of physical restraint. These staff members are expected to participate in in-depth training in the use of physical restraint. DOE recommends that such training be at least 16 hours in length.

Only the amount of force necessary and the safest method possible to protect the student or others should be used. Any method of physical restraint should be discontinued as soon as possible. Safe administration of physical restraint requires the student be continually assessed for ability to breathe and speak. If the student experiences any physical distress, the restraint should be released and medical assistance called immediately.

Reporting requirements include notification of any restraint over 5 minutes or in any case of an injury (to student or staff). The school principal or director of the program must notify the parent, verbally as soon as possible, and by written report within 3 school working days. Documentation should include who participated, who observed the restraint, the date and time, a description of what happened before, during, and after the restraint, a description of any alternative efforts attempted and the outcomes of those efforts, a description of the restraint itself, details of any injury that occurred to students or staff, and details of any further actions taken, including disciplinary consequences and any other parties informed of the incident.

A report must be filed with DOE if any extended restraint (over 20 minutes) is used or if any serious injury results. It must be sent within 5 school working days of the restraint. DOE will determine any additional required action.

For additional information, see the full text of the regulation on the DOE website at http://www.doe.mass.edu/lawsregs/603cmr46.html?section=all.

Categories of Violence

Bullying

In 2003, the Council on Scientific Affairs of the American Medical Association defined bullying as:

> "negative behavior involving (a) a pattern of repeated aggression, (b) a deliberate intent to harm or disturb a victim despite apparent victim distress, and (c) a real or perceived imbalance of power (e.g., due to age, strength, size, gender), with the more powerful child or group attacking a physically or psychologically vulnerable victim. Bullying encompasses a range of behaviors that include teasing and ridicule, verbal abuse, harassment, public shunning, private humiliation, threats and physical assault."

Prevalence

Bullying is a widespread and serious problem in schools from elementary through senior high school. Bullying is a form of abuse that is damaging and may also result in serious physical injury. In recent years, identification of bullying has become more prominent and bullying incidents have become more violent and lethal. Bullying has also been considered a contributing factor in other violent acts: Two-thirds of 41 perpetrators in recent school shooting incidents described feeling persecuted, bullied, or threatened by their peers (National Association of State Boards of Education, 2003).

Although bullying is often thought of as affecting a small proportion of youth, primarily during late elementary and middle school years, several studies (shown below) suggest that it is more widespread, more persistent, and more damaging to all concerned — victims, perpetrators, and bystanders — than previously suspected.

A 2001 study funded by the National Institute of Child Health and Human Development (NICHD), which is still relevant today, found that of over 15,000 public, private, and parochial school students in grades 6–10 estimated almost a third of 6th–10th graders — 5.7 million children nationwide — had experienced some kind of bullying (Nansel et al., 2001).

The damage toll may actually be significantly higher than that, however. A subsequent study, which also focused on the middle school and early high school age group (Juvonen, Graham & Schuster, 2003) found that bullying has negative consequences for both bullies and victims, some of whom go on to become bullies themselves. When bullies, as well as victims and "victim-bullies" are taken into account, this study concluded that bullying is a "big problem" for up to two-thirds of students aged 12–15. Even bystanders, who are not themselves victimized, can be negatively affected by witnessing bullying, particularly if they would like to stop the incident but either don't know how or are too afraid to intervene. Bystander witnesses to bullying often experience anger, helplessness, and guilt, as well as fear of becoming the next victim. They also feel unsafe in the area where the bullying incident has taken place (National Crime Prevention Council, 2006).

The problem does not begin or end with the middle-school age group. A large-scale study of third, fourth, and fifth grade students (Glew, 2005) found that 22% of the children surveyed were involved in bullying either as a victim, bully, or both. No matter what the nature of their involvement, these children were more likely than their peers to feel unsafe at school and to report that they felt sad most days. Victims and bully-victims also exhibited low school achievement and reported that they didn't belong at school. The persistence of bullying behavior well into high school is also evident in responses to the 2005 Massachusetts Youth Risk Behavior Survey (Massachusetts Department of Education, 2006), in which, nearly one fourth (24%) of public high school students (grades 9-12) reported they had been bullied at school in the past year.

Where It Happens

Research (Olweus & Substance Abuse and Mental Health Services Administration, 2003; National Crime Prevention Council, 2006) indicates that most school-related bullying takes place in unsupervised or poorly supervised environs: during breaks, in the schoolyard, in corridors, on school buses, in bathrooms, on cell phones, and via the internet. However, incidents also occur

during class if teachers are not attuned, attentive, and/or unwilling to take action. According to the National Association of School Psychologists' National Mental Health and Education Center, 25% of teachers see nothing wrong with bullying or putdowns, and they consequently intervene in only 4% of bullying incidents. Not surprisingly, more than two-thirds of students believe schools respond poorly to bullying and say adult help is infrequent and ineffective. This indicates a need for faculty training in proven effective violence prevention strategies and programs.

Risks for Victimization

Often, the abuse and harassment focuses on a perceived difference or power imbalance between the victimized individual and his or her peers. Bullying may focus on gender, race, religion, appearance, perceived intelligence, class, sexual orientation, disability, or a variety of other issues that may be used to help to abuse power and establish dominance. Data regarding higher victimization rates of children and youth with disabilities and gay/lesbian/bisexual or transgender (GLBT) youth (or youth perceived to be GLBT) is of concern.

In 2003, the National Center on Secondary Education and Transition issued a brief on bullying and teasing of youth with disabilities. The brief noted that disability harassment has been steadily increasing, as evidenced by rising numbers of complaints and consultation calls to the U.S. Department of Education's Office for Civil Rights and the Office of Special Education and Rehabilitative Services. According to the authors, bullying can erode equal access to educational opportunities and benefits for youth with disabilities, and it constitutes denial of rights under the Individuals with Disabilities Education Act (IDEA), Section 504 of the Rehabilitation Act, Title II, and provisions of a Free Appropriate Public Education (FAPE). Several features of U.S. schools may contribute to the problem, including "labeling and separating students, based on athletic or academic aptitude" and "non-participation by students with disabilities in general education classes, mainstream education clubs and organizations and athletic programs."

The 2003 National School Climate Survey conducted by the Gay, Lesbian and Straight Education Network (GLSEN) found harassment of GLBT (gay, lesbian, bisexual, and transgender) students continues to be a major problem, with 84% of GLBT students reporting incidents of verbal harassment because of their sexual orientation and 83% saying faculty never or rarely intervene when present. The biannual study also reported a direct relationship between in-school victimization, grade point averages (GPAs), and the college aspirations of GLBT students. GLBT youth who report significant verbal harassment are twice as likely to report they do not intend to go to college, and their GPAs are significantly lower (2.9 vs. 3.3).

Cyberbullying

The Internet and rapidly evolving communication technologies have given young people new ways to learn, socialize, and hurt or harm one another. The term "cyberbullying" refers to the misuse of the Internet or Internet-enabled services such as instant messaging to harass, intimidate, threaten, or embarrass.

Examples of cyberbullying (based on information from WiredSafety.org, an online safety and help group) include:

- *Instant messaging harassment:* Sending unkind, hurtful, or threatening messages through instant messaging interfaces.
- *Stealing screen names/passwords:* Stealing another person's screen name and using it to say unkind or offensive things in chat sessions. Password theft also creates an opportunity to change a person's online profile (self-description) to include sexual, racist, and other inappropriate comments.

- *Websites and blogs*: Maligning, insulting, or endangering others through websites or blogs (online journals). Individuals who post pictures or personal information about themselves or other people also put them at risk of being contacted by predators.
- *Sending pictures through e-mail and cell phones:* Transmitting embarrassing pictures of people — potentially to everyone in the sender's address book.
- *Internet polling:* Targeting others through online polls with questions like "Who's hot? Who's not?" and "Who's ugly?"

The Center for Safe and Responsible Internet Use produced "An Educators Guide to Cyberbullying and Cyberthreats." This resource (available at http://www.cyberbully.org/docs/cbcteducator.pdf) recommends comprehensive school and community-based approaches to addressing cyberbullying and cyberthreats. Additional information on cyber bullying is available at WiredSafety.org, WiredKids.org, InternetSuperheroes.org, or http://www.cyberbullying.ca, a Canadian site devoted to this topic. To address students' misuse of e-mail and cell phones to bully or harass other students, a sample e-mail use policy adapted for K-12 schools by the Lower Hudson Regional Information Center is available at http://www.lhric.org/inside/email.html.

What Schools Can Do

- Educate all school personnel about the serious nature of bullying in all its forms, and its consequences.
- Implement a comprehensive, whole-school antibullying/social competency program (see Resources section at the end of this chapter) that includes discussion of the important role bystanders can play in discouraging bullying as well as instruction about safe and effective ways to intervene.
- Survey all students about bullying to gain an understanding of the extent of the problem within the school.
- Encourage students, staff, parents, and community members to discuss bullying and harassment and to report it when they become aware of it.
- Include discussion of cyberbullying in policies and open dialogue, emphasizing the fact that cruelties do not have to be delivered face-to-face to inflict harm.
- Train staff on GLBT issues including non-discrimination laws and expectations for establishing an atmosphere of acceptance and understanding within the school.
- Support the development and presence of a school-based Gay/Straight Alliance (GSA).
- Weave discussion of bullying into the school curriculum or extracurricular programs.
- Develop clear policies and procedures regarding bullying and harassment behavior, and inform students of the consequences for policy violations.
- Ensure policies and procedures are implemented by all faculty and staff and consistently enforced.
- Develop procedures for the reporting of incidents that encourage bystanders to report incidents to adults, and post those procedures prominently around the school.
- Implement monitoring programs to improve supervision of children during breaks and lunch periods.
- Provide consistent skill reinforcement for all children throughout each building at all grade levels.
- Provide appropriate counseling for both victims and perpetrators. **Note:** Victims should not be required to participate in counseling or in mediation together with perpetrators as this can be both re-traumatizing and unsafe.

Child Abuse and Neglect

Prevalence of Child Abuse and Neglect

During 2004, the latest year for which annual statistics are available, 70,417 reports of child abuse or neglect were recorded by MA DSS, resulting in 45,328 investigations. Fifty-six percent of the investigations resulted in findings that supported the reports.

Child abuse and domestic violence often occur together. It is estimated that in 30%–60% of families affected by intimate partner violence, children are also directly abused (Edleson, 1999). The U.S. Advisory Board on Child Abuse suggests *domestic violence may be the single major precursor to child abuse and neglect fatalities in this country*. Very young children and adolescents are most at risk. Young children cannot get out of harm's way, and adolescents more frequently intervene to stop the violence, thereby putting themselves at greater risk for injury (Christian, 1997). Recognizing the high correlation between domestic violence and child abuse and the negative effects children suffer from exposure to domestic violence, even when it is not directed at them, Massachusetts DSS has established a Domestic Violence Unit whose specialists work side-by-side with Child Protection staff in DSS area offices across the state. For information about the DSS Domestic Violence Unit, call 617-748-2333. DSS provides training in issues of abuse, neglect, and domestic violence for schools that request it.

Recognizing and Reporting Suspected Cases

As mentioned in the section on legal/regulatory issues earlier in this chapter, state law (Massachusetts General Law Chapter 119 Section 51A) requires professionals whose work brings them in contact with children to notify DSS if they have reasonable cause to believe a child is suffering physical or emotional injury from abuse or neglect, or is at substantial risk of harm from abuse. Below is a list of warning signs of abuse and neglect compiled by the Massachusetts Department of Social Services.

Signs of Physical Abuse:

- bruises, welts, burns that cannot be sufficiently explained;
- injuries on places where children don't usually get hurt (the back, neck, back of legs, face);
- repeated injuries; and
- withdrawn, fearful, or extreme behavior.

Signs of Sexual Abuse:

- difficulty walking or sitting;
- pain or itching in the genital area;
- torn, stained, or bloody underclothing;
- frequent complaints of stomachaches or headaches;
- chronic depression;
- withdrawal;
- feeling threatened by physical contact;
- sexually transmitted diseases or urinary tract infections;
- inappropriate sex play or premature understanding of sex; and
- running away from home.

Signs of Emotional Injury:

- inability to play as most children do;
- sleep problems;
- antisocial behavior;
- overly complicit behavior;

- behavioral extremes; and
- lags in emotional and intellectual growth.

Signs of Neglect:

- chronically dirty or unbathed;
- chronic school absences;
- dress inadequate for weather;
- left alone;
- left in the care of siblings too young to baby-sit;
- often fatigued – even falling asleep in school;
- overly responsible;
- hunger; and
- self-destructive feelings or behavior.

The above list highlights possible signs of abuse and/or neglect. It should be noted that any of these can be symptoms of other issues as well. Be mindful that it is not up to the school to determine if there is an incidence of abuse and/or neglect, but to report the suspicion of abuse and/or neglect. The Department of Social Services (DSS) will make the determination through a thorough investigation as to whether there is substantial evidence to make a finding of abuse and/or neglect. For detailed information on reporting suspected child abuse, as well as a directory of regional and area offices, see the DSS website at: http://www.mass.gov/dss. The local DSS office can provide more information about what constitutes abuse and/or neglect, how and where to file a report, assistance with individual situations, and educational programs to train staff.

What Schools Can Do

- Develop a policy and protocol for reporting suspected child abuse and neglect, protecting the safety of families experiencing or fleeing domestic violence, and supporting students living in shelters.
- Provide a workshop on the signs and symptoms of abuse and neglect.
- Help staff and parents learn how to prevent child physical and sexual abuse and neglect.
- Educate faculty and staff regarding the proper procedure for responding to children who disclose that they have been abused, including how to create a school climate that supports such children.
- Provide training about the school system's child abuse and neglect reporting protocol.
- Establish protocols for staff responding to restraining orders.
- In order to encourage faculty and staff confidence about reporting abuse, make counselors available to hear cases. Often such discussions can take place through a teacher assistance or student assistance team (TAT or SAT). The counselors may suggest ways for the child to be seen by the counselor or nurse in a confidential, safe, and sensitive manner.
- Provide a team of psychologists/social workers/nurses/teachers/administrators who will respond to individual situations of suspected abuse and neglect.
- Provide education for students about respectful relationships and nonviolent conflict resolution.

Domestic Violence

This section discusses domestic violence in the form of intimate partner violence between adult domestic partners in the home. For the purpose of codifying the legal grounds for an Abuse Prevention Order, a civil court protective or restraining order (also called a 209A Order), M.G.L. c. 209A, the Massachusetts Abuse Prevention Act, defines abuse as:

"the occurrence of one or more of the following acts between family or household members:

- attempting to cause or causing physical harm;
- placing another in fear of imminent serious physical harm; and/or
- causing another to engage involuntarily in sexual relations by force, threat or duress."

An Abuse Prevention Order may be obtained against:

- a spouse or former spouse;
- a present or former household member;
- a relative by blood or a present or former relative by marriage;
- the parent of the complainant's minor child; or
- a person with whom the complainant has or had a substantial dating relationship.

Violations of certain terms of an Abuse Prevention Order (e.g., to refrain from abuse, to have no contact, to vacate a household, multiple family dwelling, or workplace) can be prosecuted criminally under chapter 209A.

Domestic violence can include many forms of abuse beyond actual or threatened physical and/or sexual assault. In broader terms, domestic violence can be defined as a "pattern of coercive control that one individual intermittently asserts over another" by means that include spiritual, emotional, and economic abuse (Domestic Violence Victim Assistance Program, 2007) or "any behavior that is used against an intimate partner or child to establish power and control" (Waitt Institute for Violence Prevention, 2007). Examples of such behaviors include forced isolation, public belittling, harassment, stalking, verbal abuse, intimidation, threats regarding immigration status, attempts to destroy a person's financial credit rating, the restriction of access to money, rating transportation, medical care and other resources, and excessive possessiveness (Domestic Violence Victim Assistance Program, 2007; Waitt Institute for Violence Prevention, 2007; Mayo Foundation for Medical Education and Research, 2005).

When children are not directly targeted by domestic violence, they may often suffer from abuse directed at their adult caretakers. The significance of domestic violence as a pediatric issue has been identified in many papers including: a 1998 position statement issued by the American Academy of Pediatrics (AAP) and a joint 2002 consensus statement by the AAP, the American Academy of Family Practice (AAFP), and the American College of Obstetrics/Gynecology (ACOG) and others.

Interviews with children from families with domestic violence show that they are almost always aware of the violence and respond in a variety of ways, often related to their age and gender. Some may develop behavioral problems, either acting out aggressively or internalizing their distress in depression, withdrawal, eating disorders, or substance abuse. Often children who witness violence develop stress-related illnesses or sleeping disturbances. One study found that exposure to intimate partner violence (without being directly victimized) was sufficiently traumatic to precipitate moderate to severe symptoms of posttraumatic stress in 85% of the children (Kilpatrick, 1997). Some children suffer from inadequate health care because of the abuse. Domestic violence also interrupts or delays children's emotional and cognitive development and can affect school performance (Rossman, 1998).

While many children exhibit incredible resilience, research indicates children who come from home situations with intimate partner violence are more likely to attempt suicide, abuse drugs and alcohol, run away from home, engage in teenage prostitution, and commit sexual assault crimes (Wolfe, 1995). Children who grow up with violence in the home may learn early and powerful lessons about the use of violence and power differentials in interpersonal relationships. They may

learn violence is an acceptable way to assert one's views, get one's way or discharge stress. They may come to think of it as an acceptable and inherent part of loving relationships. (Spaccarelli, 1995).

Prevalence

Studies of domestic violence consistently demonstrate it occurs at epidemic levels throughout society, in families of all socioeconomic groups, educational levels, ethnic or religious groups, or sexual orientations. One study found that 31% of women surveyed reported experiencing abuse by a husband or boyfriend (Commonwealth Fund, 1998). In fiscal year 2003, more than 72,000 calls were received by domestic violence hotlines across Massachusetts.

Given these statistics, it is clear that many children in our schools are struggling with the experience of intimate partner violence within their families. The Department of Education and others are beginning to recognize that responding to domestic violence, as well as to other forms of violence, is not simply a matter of identifying such children. Rather, classrooms should increasingly become "trauma-sensitive" so that those who are not identified are not retraumatized by the school environment. DOE has provided information on its website addressing trauma-sensitive schools and providing information about policies and procedures that can help. For more information see http://www.doe.mass.edu/tss/.

What Schools Can Do

- Educate school personnel about domestic violence and its impact on children.
- Train nurses and guidance staff to identify, appropriately refer, and assist children living with domestic violence.
- Have information regarding local domestic violence resources available for staff, students, and parents.
- Offer developmentally appropriate workshops or courses to students, in collaboration with a local domestic violence program.
- Provide staff training regarding best practices for creating trauma-sensitive classrooms and schools.

More information about domestic violence can be found at http://janedoe.org and at the CDC's website http://www.cdc.gov/ncipc/factsheets/ipvtips.htm.

Dating Violence

Dating violence, like domestic violence, includes a continuum of behaviors that undermine one partner's self-esteem and establish the other's control and dominance. Such behaviors include insults, embarrassment, rumors, namecalling, jealousy, suspicion, belittlement, attempts to separate a partner from friends and family, and other forms of emotional and verbal abuse, as well as physical and sexual violence. In today's media rich environment, computers and cell phones are increasingly being used as instruments of control and conduits of abuse. Obsessive and controlling individuals are able to check up on and harass dating partners with barrages of text messages and calls, at all hours of the day or night. In some instances, abusive boyfriends/girlfriends track their partners' contacts and whereabouts by monitoring computer and cell phone use, intercepting emails, and using either standalone GPS devices or the GPS features of some cell phones (Teenage Research Unlimited, Liz Claiborne Inc., 2007; Teicher, 2007).

Prevalence

One in 11 adolescents, nearly 1.5 million high school students nationwide, reports being a victim of physical dating abuse each year. Prevalence of physical dating violence victimization is higher

among black males (13.7%) than white males (6.6%) and higher among black females (14.0%) than Hispanic females (9.2%) and white females (7.5%) (Black et al, 2006).

Male and female adolescents are equally likely to report being victims of physical violence in dating relationships (Black et al., 2006). However, according to the National Youth Violence Prevention Resource Center, girls report experiencing dating violence at higher rates and incur more serious physical and emotional injury from the violence and are much more likely to suffer from sexual abuse. One survey of female high school students, conducted in Massachusetts in 2001, found almost one in five had experienced physical and/or sexual violence in a dating relationship. In 2003 when the Massachusetts DOE Youth Risk Behavior Survey polled both male and female high school students, 11% (15% of female students and 7% of male students) reported they had experienced violence in a dating relationship. Dating violence impacts all communities regardless of race, ethnicity, class, gender, religion, sexual orientation, or national origin.

Warning Signs

Since teenagers do not generally tell people when they are involved in a violent or emotionally abusive relationship, it is important for school personnel to be able to recognize signs of potential risk for abuse or actual signs of relationship abuse. However, it is critical to remember that, like domestic violence, it is not always possible to tell when someone is being victimized. The National Youth Violence Prevention Resource Center has compiled a list of possible warning signs of dating violence. These include:

- sudden changes in mood or personality, such as anxiety, depression, acting out, being secretive, avoiding eye contact, having “crying jags,” or “getting hysterical”;
- a boyfriend or girlfriend who seems to try to control a student’s behavior, making all the decisions, checking up on him or her, demanding to know who he or she has been with, acting jealous or possessive;
- reduction in the time a student spends with friends or family;
- unexplained bruises, scratches, or injuries;
- indications that a student is afraid of his/her boyfriend or girlfriend;
- instances of a boyfriend or girlfriend lashing out against, criticizing, or insulting the student;
- instances of a student apologizing for a boyfriend or girlfriend’s behavior or casually, even jokingly, mentioning that person’s temper or violent behavior;
- abusive behavior from the boyfriend or girlfriend toward other people or things;
- loss of interest by a student in school or activities that were once regarded as important;
- sudden changes in appearance or behavior; and
- experimentation with alcohol and/or drugs.

Consequences

Dating violence often hinders academic progress. Additionally, the teen victim is typically isolated from peers because of the partner’s controlling behavior. This isolation may interrupt a number of developmental tasks, including:

- achieving new and mature relationships with peers of both sexes;
- achieving social roles;
- establishing emotional independence; and
- developing personal values and beliefs.

Many studies document a correlation between the experience of dating violence and other health risks, including physical fighting, episodic heavy drinking, depression, anxiety, disordered eating behaviors, suicidality, sexual activity, pregnancy, and drug use (Black et al, 2006; Massachusetts DOE, 2004; Roberts, Klien & Fisher, 2003; Ackard & Neumark-Sztainer, 2002; Silverman et al., 2001).

As in adult relationships, teen dating violence can lead to severe injury or death. Abuse may escalate as a relationship becomes more serious. Violence and harassment may increase when the victim tries to end the relationship.

What Schools Can Do

To assist schools in developing comprehensive responses to teen dating violence, DOE developed *Guidelines for School Districts on Addressing Teen Dating Violence.* The complete guidelines can be found at http://www.doe.mass.edu/ssce/tdv/guidelines/tdv1.html. Major recommendations include:

- establish an advisory board on teen dating violence that includes staff, parents, students, law enforcement, and representatives from concerned community groups;
- develop a written school policy that clearly states dating violence will not be tolerated, defines the range of behaviors that are considered to constitute abuse in teen relationships, spells out procedures for addressing alleged incidents, and provides protocols for action;
- provide awareness training sessions for school administrators, teachers, health educators, school nurses, and other staff, ideally with the participation of a representative from a community agency that services victims of intimate-partner violence;
- teach students about teen dating violence, as part of an in-depth multi-session curriculum, discussing what constitutes abuse in a dating relationship; causes, effects, and consequences; how teens can help themselves or a friend; and problem-solving and decision-making skills (a booklet on this topic, developed with and for teens, is available at http://www.doe.mass.edu/hssss/tdv/brochure.pdf);
- in collaboration with local counseling and juvenile justice programs, law enforcement, and other community-based resources, develop safe and confidential intervention, resource, and referral services, including victim support groups and interventions for perpetrators and potential perpetrators of dating violence;
- foster relationships with local domestic violence victim service programs and certified batterer intervention programs in order to support appropriate referrals; and
- foster a school climate that has zero tolerance for dating violence, through: clear policy that includes a prohibition on all forms of sexism or gender bias (including language and graffiti); consistent enforcement; reporting of all violations; and staff modeling of respectful behaviors.

Resources for dating violence prevention are available at the CDC's "Choose Respect" website: http://www.chooserespect.org as well as the National Youth Violence Prevention Resource Center's website at http://www.safeyouth.org/scripts/teens/dating.asp.

Resources for local domestic violence programs can be found at http://www.janedoe.org and resources for local certified batterer intervention programs are listed at http://www.mass.gov/dph/fch/bi/index.htm.

Gang Activity

The presence of gangs in school is very disruptive to the school environment. They foster fear among students and are often involved in drugs, weapons trafficking, and violence. In Massachusetts, a small but persistent percentage of students are involved in gangs. The Massachusetts Youth Risk Behavior Survey conducted biannually by DOE among public school students in grades 9–12 has found 10% of students reporting gang involvement during the previous year in each survey since 1995. Students involved in gangs were significantly more likely than other students to report a variety of other risk behaviors, including physical fighting (54% vs. 28%) and carrying a weapon (38% vs.11%).

Early identification of gangs can be challenging, especially in emerging gang areas. Important facts to keep in mind are:

- many members of modern adolescent gangs are perceived as “good kids” with college-educated parents;
- white gang members are more prevalent in adolescent gangs than in the past;
- females are more prevalent in adolescent gangs than previously reported;
- gangs in suburban, small-town, and rural areas have different characteristics than gangs in large cities, with more females, whites, and younger youth, and more mixed membership; and
- modern gangs make less use of symbols such as gang names, clothing, and traditional initiation rites than in the past, and the meaning of their graffiti is sometimes murky or unclear (e.g., youth may use a mixture of different gang symbols) (Howell, 2000).

Although youth gangs remain dangerous, recent studies suggest pressures exerted on teens to join or stay in gangs are not as intense or as violent as commonly believed, and can be overcome with attractive alternatives that are supported and sustained by their communities (Howell, 2000).

What Schools Can Do

Many schools have instituted increased security measures in an effort to discourage gang activity and gang violence, but the effectiveness of this approach is subject to debate (Howell, 2006; Howell & Lynch, 2000). Although security officers, metal detectors and security cameras may provide a degree of deterrence, these measures can also increase gang power by creating a climate of fear and heightening the perceived need some students have for joining gangs (Thompkins, 2000).

Other strategies that schools have employed to combat gang influence and promote safety include the following (Arnette & Walsleben, 1998):

- establish ongoing professional development and in-service training programs for all school employees, including techniques of classroom management, dealing with cultural diversity, and handling disruptive students, parents, and campus intruders;
- conduct leadership training classes to assist students in developing insight and skills that enable them to work harmoniously with diverse individuals and groups;
- offer classes incorporating curricula on life skills and resistance to peer pressure, values clarification, and cultural sensitivity;
- implement dress codes designed to eliminate gang colors and clothing, publicize the codes at school, and distribute them to all students and parents;
- adopt school uniforms, particularly for elementary and middle school students, making financial assistance available to families that cannot afford them;
- reduce the length of time between classes to discourage loitering;
- assign trained adult monitors for hallways and bathrooms;
- establish programs such as schools-within-schools, alternative schools, beacon schools, in-school suspension programs, and school-to-work programs, in order to relocate and continue educating students with histories of classroom disruption, lack of motivation, and gang membership;
- implement victim/offender programs requiring juvenile offenders either to make restitution to victims for damage or loss incurred or to perform community service;
- create a climate of ownership and school pride by including students, parents, teachers, and community leaders in the safe-school planning process;
- stage regular campus-wide graffiti and vandalism clean-up campaigns and rallies in response to specific incidents of defacement and destruction;

- organize crisis intervention teams to counsel students coping with troubling violence in and near school; and
- offer students, especially juvenile gang members, special outreach and afterschool programs as an alternative to gang membership.

The Office of Juvenile Justice and Delinquency Prevention (OJJDP) offers a strategic planning tool to assist in assessing community gang problems. The tool describes risk factors contributing to serious delinquency and gang membership and identifies promising programs, strategies, and best practices that address those risk factors. Additional information on the strategic planning tool is available at http://www.iir.com/nygc/tool/.

Hate/Bias Incidents

Tolerance.org, an online project of the Southern Poverty Law Center, defines bias incidents broadly as:

> ". . . any acts directed against people or property that are motivated by prejudice based on race, religion, ethnicity, sexual orientation, gender, social affiliation, ability, or appearance. These include hate crimes, ranging from violent assault and harassment to vandalism and graffiti, as well as hate speech, hate literature, and derogatory language and imagery in all media."

The 2005 edition of *Indicators of School Crime and Safety,* an ongoing series of reports issued by the National Center for Education Statistics and the Bureau of Justice Statistics, reported that, in 2003, 12% of students aged 12–18 had experienced the use of hate-related words directed at them by someone at school, and more than one-third (36%) of students within this age group had seen hate-related graffiti at school. Authors of the report commented: "A student's exposure to hate-related words or symbols at school may increase that student's feeling of vulnerability. Discriminatory behavior in schools can create a hostile environment that is not conducive to learning" (Cobia & Carney, 2002).

What Schools Can Do

- Provide all school staff with comprehensive hate-prevention training, including antibias and conflict resolution, incident reporting procedures, and resources available to assist in dealing with incidents that do occur.
- Provide hate-prevention training to all students through age-appropriate classroom activities, assemblies, and other school-related activities.
- Post the laws against hate crimes in prominent locations.
- Develop policies and provide training indicating that no form of bias, including ethnic slurs, sexual orientation and gender slurs, name-calling, stereotyping, or exclusion, will be tolerated.
- Develop partnerships with families, community organizations, and law enforcement agencies.
- Develop a hate-prevention policy with the input of parents, students, teachers, community members, and school administrators, and distribute it to every student, every student's family, and every employee of the school district.
- Develop a range of both disciplinary and corrective actions for those who violate school hate-prevention policies.
- Collect and use data to focus district-wide hate-prevention efforts.
- Provide structured opportunities for interaction across racial and ethnic lines through school-supported organizations and activities.

- If a hate crime is committed at school, leave all of the evidence in place until the police have arrived on the scene. All hate crimes should be reported to the Anti-Defamation League as well as the police.

The report *Preventing Youth Hate Crime: A Manual for Schools and Communities,* jointly prepared by the U.S. Department of Education's Safe and Drug-Free Schools Program and the U.S. Department of Justice, contains resources and recommended activities for elementary, middle, and secondary schools, including a list of educational videos that promote tolerance. This report is available online at http://www.ed.gov/offices/OESE/SDFS. A collection of sample school policies, published as an appendix to *Protecting Students from Harassment and Hate Crime: A Guide for Schools* is archived online by the U.S. Department of Education at http://www.ed.gov/offices/OCR/archives/Harassment/index.html.

Self-Injury and Suicidal Behavior

Self Injury

Self-injury includes deliberate behaviors that cause immediate physical harm severe enough either to cause tissue damage or to leave marks that last several hours.

Some self-injuries, such as body art and body piercing, may be socially sanctioned and, if not carried to extremes, are not considered harmful. Other self-injurious behaviors such as smoking, drinking, drug use, and failure to exercise, although deleterious in the long run, usually do not cause immediate self-harm.

Cutting, burning, interfering with wound healing, hair-pulling, scratching, and self-hitting are all examples of self-injuries considered dangerous, warranting intervention. Cutting is generally agreed to be the most common type of self-injury, although some who self-harm use multiple methods. "Cutters" use razors, utility knives, scissors, needles, broken glass, or other sharp objects to make repetitive cuts on their arms, legs, or other body parts.

Why People Self-Injure

As maladaptive as self-injuring behavior seems, it is a coping mechanism that helps release pent-up emotions such as anxiety, fear, depression, or anger. Even though a self-inflicted injury may result in life-threatening damage, a person who self-injures does not intend to die by these acts. In fact it is often considered life affirming by the self-injuring person. Often, self-injury by cutting can become habitual and may escalate. It can be experienced as a needed means of discharge by the self injuror as well as a defense against further harm to self. It is most often practiced in secret and can stimulate tremendous shame and guilt. Reasons for self-injury vary, but the most common explanations offered by those who self-injure are:

- it provides quick, temporary relief from intense feelings, pressure, or anxiety;
- it provides a sense of being real, being alive — of feeling *something;*
- it offers a way to feel pain on the outside instead of on the inside;
- it is a pain that can be controlled and managed — unlike the pain experienced through physical or sexual abuse; and
- it is a way to break out of emotional numbness.

Prevalence and Risk Factors

The rates of self-injury revealed through research vary tremendously depending on how researchers phrase their questions. The most widely cited estimate is that self-injurers represent nearly 1% of the population, with a higher proportion of females than males. The range for age of onset has been reported in adolescents as 12–15 years of age (Ross & Heath, 2002). The

behaviors often last 5–10 years, but can persist much longer without appropriate treatment (Nixon et al., 2006). In 2003, the Massachusetts Youth Risk Behavior Survey found that 18% of students had engaged in self-injuring behavior, intentionally cutting, burning, or bruising themselves.

Background and Co-Occurring Issues

A significant number of self-injurers also struggle with eating disorders and alcohol or substance abuse. Nearly 50% report physical and/or sexual abuse during childhood. Even more (as many as 90%) report that they were discouraged from expressing emotions, particularly anger and sadness (Conterio & Lader, 2005).

Possible Signs of Self-Injury

According to the National Mental Health Association, the following may signal that a teen is engaging in, or is at risk for, self-injuring behavior:

- unexplained frequent injury, including cuts and burns;
- wearing long pants and sleeves in warm weather;
- low self-esteem;
- difficulty handling feelings;
- relationship problems;
- the above coupled with obsessive, compulsive behaviors; and
- poor functioning at work, school, or home.

Connection to Suicide

Although a fairly clear distinction may be drawn between self-injury behavior and suicidal behavior, those who engage in self-injury, if discovered, may experience ostracism from their social peers due to the difficulty others have in understanding and accepting such behavior. If such shame and isolation from peers is felt strongly, individuals may become suicidal. This risk must be taken very seriously, since research indicates that, among individuals who attempt suicide, those with a history of self-injury are more impulsive, more prone to persistent suicidal ideation, and more likely to underestimate the lethality of their suicide attempts (Stanley et al., 2001).

Treatment

Self-injury is often associated with other known psychological difficulties and tends to be treated under the umbrella of a co-occurring disorder such as substance abuse or an eating disorder. If the underlying feelings that are causing the behaviors are the same, this approach can work; healthy coping skills learned to address one problem can be applied to another (Gibson, National Center for PTSD Fact Sheet, 2007). There are also some treatments that specifically focus on safely stopping the self-injury. These include:

- Dialectical Behavior Therapy (DBT);
- interpersonal group therapy for borderline personality disorder;
- treatment of complex post-traumatic stress disorder;
- rational-emotive therapy to control anger;
- psychotherapy; and
- pharmacological treatments.

Currently, research (Linehan et al., 2006) indicates that DBT, a treatment by qualified professionals that combines individual therapy with group skills-training sessions that teach alternative ways of managing emotions and tolerating distress, is effective in reducing self-harm behaviors. Opinions vary on the effectiveness of pharmacological treatment in reducing self-harm behaviors; a discussion of various therapeutic approaches may be found at http://www.palace.net/%7ellama/psych/injury.html.

What Schools Can Do

- Educate all school nurses, health teachers, counselors, coaches, classroom teachers, and administrators about self-injury.
- Work cooperatively with the local mental health system to learn about appropriate services available for students and how to access them.
- Incorporate age-appropriate information on self-injury into comprehensive health education programs and school-based health center admission policies and procedures.
- Establish onsite individual counseling for students who practice self-injurious behaviors.
- Post counseling and other resource information widely.
- Advertise responsible health websites for students to visit anonymously.

Suicidal Behavior

Suicide is less about seeking death than it is about seeking relief and release from overpowering feelings of helplessness and hopelessness. People who are suicidal feel as if it is the last resort and the only solution. (For a detailed discussion of suicide, see Chapter 11.)

In the 2005 Massachusetts Youth Risk Behavior Survey, lesbian, gay, and bisexual (LGB) students were over four times more likely than their peers to have attempted suicide and were twice as likely to have been threatened or injured with a weapon in the past year. LGB students in schools with LGB support groups or GSAs reported lower rates of victimization and suicide attempts than those in other schools. (Goodenow, 2006).

In the general student population, 27% of responding students admitted to feeling so sad or hopeless for 2 or more weeks in the preceding 12 months that they stopped engaging in some usual activities. Thirteen percent reported suicidal thoughts and 12% said they had formulated a suicide plan. Six percent of respondents reported making an actual suicide attempt; two percent of these instances required medical treatment. For more information and resources regarding suicide prevention, please see: http://www.mass.gov/dph/fch/injury/resources.htm.

Sexual Assault

Sexual assault is violence. Rape and other sexual assaults are serious violent crimes that can have devastating, long-term effects on the lives and health of survivors. Schools should, first and foremost, do everything possible to prevent victimization of students. Central to this effort is primary prevention education to help all teens recognize and avoid risks and understand the difference between coercive/abusive and healthy, mutually respectful relationships.

Rape in the U.S. has been referred to as “a tragedy of youth” (Kilpatrick & Ruggiero, 2003). While people of all ages are sexually assaulted, school-age children and adolescents appear to be at particular risk. The 2003 Youth Risk Behavior Survey found that 10% of high school students, 14% of females and 6% of males, had already experienced sexual contact against their will (MDOE, 2004). Of the more than 25,000 assaults reported to Massachusetts rape crisis centers in a recent 10-year period, the median age at the time of assault for rape and attempted rape was 20 years for females and 17 years for males. For other forms of physical sexual assault, which can be just as traumatic, the median age was 14 years for females and 10 years for males (DPH, 1999). Many studies have confirmed the correlation between sexual assault experiences and substantial increases in risk for health problems such as suicide attempts, cutting, substance abuse, adolescent pregnancy, eating disorders, and even heart disease (Filletti, 2001).

Sexual assault is both a personal crisis and a health problem. Schools should be prepared to respond with information and services to address both aspects of such an event, whether it occurs in the school setting or elsewhere. Efforts to deal with sexual assault should address the need for

sensitive, timely, and appropriate services for survivors and their families. Students and their families may not be aware, for example, that they can go to an emergency room to have evidence collected for up to five days and that taking such action does not commit them to filing a police report (BARCC, 2005).

The Massachusetts Department of Public Health (DPH) can assist schools in connecting students with appropriate care. In addition, DPH trains, certifies, and supports registered nurses and physicians (known as Sexual Assault Nurse Examiners or SANEs) to provide quality care and forensic evidence collection to sexual assault victims entering designated emergency departments. SANEs create a link between health, legal, and advocacy systems for victims seeking services. For more information see: http://www.mass.gov/dph/fch/sane/index.htm

Since the early 1980's, DPH has also partnered with local rape crisis centers to provide quality sexual assault prevention and survivor services. All rape crisis centers in Massachusetts provide 24-hour confidential counseling, support, information, and referral hotlines for: adolescent and adult survivors of all forms of sexual assault; and non-offending family/guardians of sexual assault survivors of all ages. Free individual sexual assault crisis counseling is also provided. In addition, schools and community groups can arrange for federally-funded Rape Prevention Education consultation, prevention education workshops, and professional training through these centers. Complete contact information is available at http://www.state.ma.us/dph/fch/sapss/sites.htm.

In addition to helping student victims of rape or sexual assault with immediate needs, schools should also be aware of the need to provide longer term support for these students, as they deal with the emotional after-effects of the attack. Although every individual processes such trauma differently, many survivors of sexual assault experience some or all of the following: guilt; fear; anger; distrust; avoidance; mood swings; loss of control; numbness; re-experiencing; and an inability to concentrate on schoolwork, particularly if the rape or assault occurred at school (Boston Area Rape Crisis Center, 2005).

What Schools Can Do

- Provide all school nurses, health teachers, counselors, coaches, faculty, staff, and administrators with training on issues of sexual assault.
- Help all schools respond to sexual assault in a consistent, sensitive manner by establishing a preK-12 protocol covering all issues of sexual assault and sexual harassment, including reporting requirements, handling of disclosures, referrals for services, and confidentiality.
- Develop a partnership with the local rape crisis center to learn about available services.
- Incorporate age-appropriate and culturally sensitive information on sexual assault into comprehensive health education programs and school-based health center intake forms.
- Increase awareness of rape crisis center services by posting information in key locations such as restrooms, locker rooms, and administrative, counseling, and school health offices.
- Set up onsite or offsite counseling groups for sexual assault survivors.
- Contact the Massachusetts Sex Offender Coalition to learn about resources for adolescent sex offenders.
- Maintain up-to-date information on counseling services for adults, adolescents, and children, and provide this information to employee assistance programs and teachers' unions.
- Be aware that sexual assault may be a reportable condition of abuse and neglect.

Additional information concerning sexual assault and sexual assault prevention is available on the DPH website at http://www.mass.gov/dph/fch/sapss/index.htm, through the National Sexual

Violence Resource Center at http://www.nsvrc.org, and at Jane Doe, Inc., the website for the state coalition against sexual and domestic violence: http://www.janedoe.org.

Sexual Harassment

Under federal law, sexual harassment in school encompasses any unwanted or unwelcome sexual attention that interferes with a student's right to pursue an education or participate in school programs and activities. Harassers may include other students, school personnel or anyone else that a student might interact with while attending school or school-related activities. (U.S. Department of Education, Office of Civil Rights, 2001)

Massachusetts treats sexual harassment as a form of sex discrimination and/or sexual orientation discrimination, and states (M.G.L., c. 151C) that sexual harassment of students includes "any sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature when: (i) submission or rejection of such advances, requests or conduct is made either explicitly or implicitly a term or condition of the provision of the benefits, privileges or placement services or as a basis for the evaluation of academic achievement; or (ii) such advances, requests or conduct have the purpose or effect of unreasonably interfering with an individual's education by creating an intimidating, hostile, humiliating or sexually offensive educational environment."

Harassment encompasses a wide range of behaviors that may include grabbing or touching body parts, pulling up dresses or pulling down pants and gym shorts, making sexually explicit comments or jokes either verbally or in writing, making unwanted sexual gestures or using sexual words or names, flashing (exposing genitals), or pornography. Harassment may take place in person, by phone, through U.S. mail, via text messages, and though e-mail.

In 2001, the American Association of University Women (AAUW) Educational Foundation released a report based on a national survey conducted by Harris Interactive of 2,064 public school students in grades 8–11. According to the findings, about 4 out of 5 students (79% of boys and 83% of girls), report that they have experienced some type of sexual harassment in school. More than one-quarter indicated sexual harassment is something that happens to them "often." (American Association of University Women Educational Foundation, 2001).

Although the AAUW/Harris survey found students most often experienced sexual harassment for the first time in grades 6–9, more than one-third of respondents (35%) said they had experienced it in elementary school, in some instances before third grade. Most harassment is committed by peers, although 7% of boys and girls reported being harassed by a teacher. Despite widespread awareness of school policies prohibiting such behavior (69% of students said their school had a policy on sexual harassment, compared to 26% in 1993, when AAUW and Harris conducted the first national survey on this topic), most harassment takes place "under teachers' noses," in classrooms and hallways.

Appropriate Response

At the time of the report's release, AAUW executive director Jacqueline Woods noted: "We have much more work to do in educating our students and training our teachers and administrators — as early as elementary school — in dealing appropriately with sexual harassment." Since then, the AAUW Educational Foundation, in partnership with the National Education Association, has produced a guide for students, parents, and educators entitled *Harassment-Free Hallways: How to Stop Sexual Harassment in Schools*. The guide, as well as the 2001 *Hostile Hallways* report, may be ordered free of charge at http://www.aauw.org/k-12/ or by calling 202-728-7624.

Schools yet to publish a sexual harassment policy and sexual harassment grievance procedures would be well advised to do so. A form of sex discrimination, sexual harassment is prohibited by

both Title IX and general principles of equal protection under the law. Title IX requires public schools, as federal fund recipients, to adopt and publish sexual harassment grievance procedures. School districts and schools should also designate Title IX coordinators, publicize their names and contact information, and encourage them to network with each other and with the state Title IX coordinator. School district Title IX coordinators are often district office employees with related human resources or diversity office assignments. School-level Title IX coordinators are frequently interested teachers or staff with related assignments such as the school Title I coordinator; some school principals also fill this role.

Once school administrators are notified of possible sexual harassment of students, they are legally required to take immediate and appropriate steps to investigate the incident. When a school official has determined that harassment or objectionable conduct has occurred, the district must remedy the harassment and take steps to prevent it from recurring.

Schools are generally allowed to impose gradually increasing discipline, as needed, for students found to have been responsible for harassing. For a severe incident, however, more serious and immediate steps may be required, including police and/or DSS reporting. Responsive measures, such as separating the students, should be designed to minimize the burden on the student who was harassed. In some cases, the school will also be responsible for remedying the effects of the harassment on the student victims, through student and staff training, class changes, developing new polices, and providing counseling services and/or adjustments to coursework and evaluation.

If the school takes no action, or if a student or the student's parent/guardian disagrees with the actions taken by the school administration, the student and parent/guardian have the right to file a complaint at the U.S. Department of Education (DOE), Office of Civil Rights (OCR). OCR subsequently launches an investigation, which often includes contact with school personnel.

In Massachusetts, students who are harassed due to their sex or sexual orientation may also file complaints with the Massachusetts Department of Education (DOE) or the Massachusetts Commission Against Discrimination (MCAD). DOE has established a Problem Resolution System to allow students, parents, and others to file complaints when they believe that harassment is occurring and the school has not addressed the problem appropriately. DOE employees from its Program Quality Assurance Services (PQA) subsequently seek a written reply from the school, and they may also personally go to the school and interview witnesses and the complainant. This system has resolved many instances of discrimination.

Students and parents/guardians may also seek relief or compensation from criminal or civil courts. If a student believes his or her day-to-day safety is imperiled, the student may be able to obtain a "civil rights injunction" ordering the harasser to stop the abuse and refrain from any contact. Students may also bring civil lawsuits against their schools for monetary damages (Bonauto, 1999).

A frequently-asked-questions guide on sexual harassment in schools is available from OCR at http://www.ed.gov/about/offices/list/ocr/qa-sexharass.html. Technical assistance regarding Title IX compliance is available through DOE's Program Quality Assurance Services. A listing of liaison staff is available on the DOE website at http://www.doe.mass.edu/pqa/staff/liaison.asp.

What Schools Can Do

The following suggestions incorporate advice for schools from the NOW Legal Defense & Education Fund:

- develop an easy-to-understand policy on sexual harassment that explains complaint filing and handling procedures, and distribute it widely;

- establish procedures for speedy, fair, and confidential investigations with appropriate punishments;
- make clear that retaliation or intimidation of a complainant will be punished;
- amplify the policy through public statements by school administrators that harassment will not be tolerated;
- designate several people to receive complaints, and provide these designees with special training;
- train the entire staff on how to recognize harassment and on their responsibilities as role models, potential witnesses, and confidants;
- incorporate training in respectful behavior and in ways to deal with sexual harassment into curricula at all grade levels;
- hold school assemblies or teach-ins on the topic and invite an appropriate speaker;
- provide informational resources on sexual harassment in the school library, guidance office, student health center, nurse's office, or other accessible areas;
- encourage students to start a peer group to address harassment and related issues; and
- provide or facilitate individual and/or small group counseling for perpetrators, as well as for victims.

Referrals to professionals who provide specialized assessment and treatment for youth with sexual behavior problems can be obtained from the Massachusetts Adolescent Sexual Offender Coalition: see http://www.matsa.org.

Understanding and Preventing School-Based Violence

Dimensions of the Problem

The threat of violence is a daily reality for many students. Although the incidence of violent crimes in school has declined since the early 1990s, the problem is still significant. Data from the National Crime Victimization Survey show that, in 2003, students aged 12–18 were victims of 740,000 violent crimes at school.

The 2003 Youth Risk Behavior Survey conducted by DOE found that almost one-third of public high school students surveyed had been in a physical fight in the past year, and 10% reported fighting on school property. Fourteen percent of students reported having carried a weapon of some kind in the past 30 days, and 5% said they had carried a weapon on school property during that time. Six percent said they had been threatened or injured with a weapon on school property in the past year. Five percent of students reported not going to school 1 or more times in the previous month because they did not feel safe at school or on the way to school.

Students of both genders are involved in violent behavior such as bullying, fist-fighting, hair-pulling, name-calling, and ganging-up on students who are perceived as different because of their appearance, gender, behavior, or perceived sexual orientation. A study by the National Mental Health Association found that 31% of gay or lesbian youth had been threatened or injured at school in the past year. Exhibit 13-4 is a checklist of early warning signs that may help schools identify students at risk for perpetrating violent behavior.

Teachers as well as students can be victims of student violence. In 1999–2000, 10% of secondary school teachers and 8% of elementary school teachers were threatened with injury by a student, and 4% of teachers across all grade levels were physically attacked by a student (U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), 1999–2000).

Risk and Protective Factors

Risk factors are useful for populations benefiting from intervention efforts. However, as pointed out in *Youth Violence: A Report of the Surgeon General* (HHS, 2001), no single risk factor or combination of factors can predict violence with unerring accuracy. Individual characteristics interact in complex ways with environmental conditions to produce violent behavior. For example, the impact of risk factors appears to vary depending on the developmental stage at which a young person is exposed. According to the Surgeon General's report, the strongest risk factors during childhood are involvement in serious but not necessarily violent criminal behavior, substance use, male gender, physical aggression, low family socioeconomic status or poverty, and antisocial parents. During adolescence, when peer influences loom larger, the strongest risk factors are weak ties to conventional peers, ties to antisocial or delinquent peers, belonging to a gang, and involvement in other criminal acts.

A number of risk factors for perpetration of youth violence have been identified, as have a smaller number of protective factors that can help to insulate young people from risk. Risk factors may involve the individual, the family, peer relationships, school environment, and community (CDC, 2006).

Individual Risk Factors

- history of violent victimization or involvement
- attention deficits, hyperactivity, or learning disorders
- history of early aggressive behavior
- involvement with drugs, alcohol, or tobacco
- low IQ
- poor behavioral control
- deficits in social cognitive or information-processing abilities
- high emotional distress
- history of treatment for emotional problems
- antisocial beliefs and attitudes
- exposure to violence and conflict in the family

Family Risk Factors

- authoritarian child-rearing attitudes
- harsh, lax, or inconsistent disciplinary practices
- low parental involvement
- low emotional attachment to parents or caregivers
- low parental education and income
- parental substance abuse or criminality
- poor family functioning
- poor monitoring and supervision of children

Peer/School Risk Factors

- association with delinquent peers
- involvement in gangs
- social rejection by peers
- lack of involvement in conventional activities
- poor academic performance
- low commitment to school and school failure

Community Risk Factors

- diminished economic opportunities

- high concentrations of poor residents
- high level of transiency
- high level of family disruption
- low level of community participation
- socially disorganized neighborhoods

Less study has been devoted to protective factors that help young people overcome adverse circumstances, however, the following factors have been proposed in studies (CDC, 2006; DHHS, 2001; Resnick et al., 2004):

Individual Protective Factors

- intolerant attitude toward deviance
- high IQ or high grade point average
- positive social orientation
- religiosity

Family Protective Factors

- connectedness to family or adults outside of the family
- ability to discuss problems with parents
- perceived parental expectations about school performance are high
- frequent shared activities with parents
- consistent presence of parent during at least one of the following: when awakening, when arriving home from school, at evening mealtime, and when going to bed
- involvement in social activities

Peer/School Protective Factors

- commitment to school
- involvement in social activities

Violence is a learned behavior and so is avoidance of violence. School and community-based activities promoting nonviolent values and teaching nonviolent alternatives to resolve conflict are important throughout the development of children and adolescents. Students who acquire skills that support learning, positive behavior, and constructive social relationships do better in school and are more responsive to prevention programs and strategies that support positive behavioral choices (Greenberg et al., 2003; Zins et al., 2004; Elias, 2006) For more information regarding the public health approach to preventing perpetration of violence, see the CDC's website at http://www.cdc.gov/ncipc/dvp/PublicHealthApproachToViolencePrevention.htm.

Research suggests the presence of a full-time violence prevention coordinator will result in improved prevention programming, which may lead to improved program outcomes. The U.S. Department of Education's National Coordinator Program Initiative provides funding for full-time prevention coordinators to facilitate their schools' drug-prevention and school safety programs. As leaders for school-based prevention programming, coordinators implement challenging multidisciplinary tasks that require coordination across school, family, peer, and community contexts. These responsibilities include the following:

- assessing drug- and violence-related problems among students;
- identifying research-based drug and violence prevention strategies appropriate for K-12;
- working with parents/guardians and students to obtain information about effective programs and strategies, and encouraging their participation in development and implementation;
- developing and implementing programs that are developmentally appropriate;

- assisting schools to adopt the most successful strategies, including training of teachers and staff, in accordance with the No Child Left Behind Act of 2001;
- assisting schools in developing and improving school safety plans that address responses to and recovery from large-scale disasters;
- facilitating evaluation of prevention activities and use of findings to modify programs, as needed;
- identifying additional funding sources for prevention activities;
- providing feedback to state education authorities on programs and activities that have proven successful in reducing drug use and violent behavior;
- coordinating with student and employee assistance programs;
- linking to other educational resources, e.g., Title I Compensatory Education Funds, to deliver programs and strategies that serve to create safer, more orderly schools; and
- developing measurable goals and objectives and reporting annually on progress toward meeting those goals and objectives.

Prevention coordinators receive substantial training and guidance through required face-to-face courses and distance education funded through the Office of Safe and Drug-Free Schools. A national training and technical assistance center (202-403-5265, http://www.k12.coordinator.org) operated by the American Institutes for Research (AIR), Education Development Center, Inc. (EDC), the Collaborative for Academic, Social, and Emotional Learning (CASEL), and the National Association of School Psychologists (NASP) provides ongoing professional development and support.

Effectiveness of Preventive Programs

Youth violence can be prevented, but great care must be exercised in evaluation, selection, and implementation of programs. *Youth Violence: A Report of the Surgeon General*(HHS, 2001) found that, of the hundreds of prevention programs in use by schools and communities across the U.S., relatively few had been evaluated, and little was known about the effects of most. Furthermore, nearly half of the most thoroughly evaluated strategies (including the elementary school curriculum of DARE, the most widely used school-based substance abuse prevention program in the United States) were deemed ineffective, while a few, such as peer-led programs, including peer counseling, peer mediation, and peer leaders, were considered to have potential for harm.

Despite these caveats, the Surgeon General's report strongly affirmed that youth violence intervention and prevention programs can work, and it identified many of the characteristics included in highly effective programs. Programs were most likely to be effective if they included multiple components to address both individual risks and environmental conditions through (a) building individual skills and competencies; (b) parent effectiveness training; (c) improving the social climate of the school; and (d) changing the type and level of involvement in peer groups.

In addition, it was noted that program effectiveness had as much to do with the quality of implementation as with the type of intervention. "Many programs," the report said, "are ineffective not because their strategy is misguided, but because the quality of implementation is poor."

A 2002 document from the U.S. Department of Health and Human Services titled *What You Need to Know About Youth Violence Prevention* attempted to distinguish between effective and ineffective strategies for youth violence prevention. These distinctions were reached by measuring the design, deterrent effects, replicability, and sustainability of a number of current programs aimed at primary (general population), secondary (children at high risk of violence), and tertiary (violent or seriously delinquent youth) prevention levels. The effective strategies are found in the list below.

Primary Prevention: ***Demonstrated as Effective***

- skills training
- behavior monitoring and reinforcement
- building school capacity (to plan, implement, and
- sustain positive changes)
- continuous progress programs (for student achievement)
- cooperative learning
- positive youth development programs

Secondary Prevention: ***Demonstrated as Effective***

- parent training (to use specific child-management skills)
- home visitation
- compensatory education (to improve academic performance)
- moral reasoning
- social problem solving
- thinking skills

Tertiary Prevention: ***Demonstrated as Effective***

- social perspective-taking, role-taking
- multimodal interventions
- behavioral interventions
- skills training
- marital and family therapy by clinical staff
- wraparound (social) services

A number of programs aimed at preventing or reducing youth violence can be found in the Resources section at the end of this chapter. All programs cited as model programs by Substance Abuse and Mental Health Services Administration (SAMHSA), U.S. Department of Health and Human Services can be viewed at http://www.modelprograms.samhsa.gov/matrix_all.cfm.

What Schools Can Do to Establish a Disciplined School Climate

Aside from their own homes, school is usually where youth spend the majority of their time. School contributes to one's sense of self and provides individuals with valuable information about themselves in relation to others. Since the school is a vital socialization agent, the *climate* of the school is important.

The report *Early Warning, Timely Response: A Guide to Safe Schools*, released by the U.S. Department of Education in 1998, points out that "opportunities for inappropriate behaviors that precipitate violence are greater in a disorderly and undisciplined school climate." Both this report and the follow-up report, *Safeguarding Our Children: An Action Guide,* published jointly by U.S. DOE and the Department of Justice in 2000, stress the importance of clarity, consistency, and a positive, proactive approach to effective school discipline. Important recommendations from these reports include:

- Develop a schoolwide disciplinary policy that includes a code of conduct, specific rules, and consequences, and that can accommodate student differences on a case-by-case basis when necessary. Be sure to include a description of school anti-harassment and antiviolence policies and due process rights.
- Include a zero-tolerance statement for illegal possession of weapons, alcohol, or drugs. Ensure the rules reflect the community's cultural values and educational goals. These values should be expressed in a statement that precedes the schoolwide disciplinary policy.

- Include school staff, students, and families in the development, discussion, and implementation of fair rules.
- Be sure rules are written and consistently applied in a nondiscriminatory manner and that they accommodate cultural diversity.
- Keep rules simple and few in number, so all students know and can explain the school's expectations for behavior, as well as the incentives and consequences associated with adhering to or violating the expectations.
- Establish multiple levels of consequences, both to aid students in understanding that not all inappropriate behavior is equally serious and to provide a means of dealing with multiple violations.
- Recognize that students' fear of intimidation may lead to self-protective behaviors such as weapon-carrying that can put them at further risk.
- Provide schoolwide and classroom support to implement the rules. Strategies that have been found to support students include class discussions, student government, and participation on discipline teams. In addition, peer mediation and conflict resolution have been implemented widely in schools to promote a climate of nonviolence.
- Ensure rules are modeled and reinforced by the adults in the school.
- Do not short-circuit the rules. Systematically follow established levels of consequences, and do not remove children from the school before exhausting all other consequences, unless a major violation of school rules occurs that endangers the child's life or the lives of others.
- Stress proactive measures (e.g., intervening before a verbal dispute escalates into a physical fight).
- Emphasize positive supports (e.g., teaching expected behaviors), as opposed to punishment.
- Provide services and support for students who have been suspended and/or expelled.

Safeguarding Our Children: An Action Guide is available from the U.S. Department of Education at: http://www.ed.gov/admins/lead/safety/actguide/action_guide.pdf#search=%22%22safeguarding%20our%20children%3A%20an%20action%20guide%22%20DOE%22.

Before serious penalties such as suspension and expulsion are imposed for nonviolent acts, the impact of the disciplinary measure should be carefully considered, as well as the presence of factors such as mental illness or a difficult home situation that may have contributed to the violation (American Academy of Pediatrics, 2003). In a policy statement, the AAP noted that students who are suspended or expelled often end up at home, unsupervised. Removal from school may put professional help out of reach at a time when the student most needs it, increasing the risk that the student will use drugs or engage in other risky behaviors, drop out of school, or become suicidal.

To minimize the negative impact of such disciplinary measures, the AAP recommends that:

- schools establish relationships with health and social agencies so they can refer students with disciplinary problems before they are removed from school;
- as part of the school's disciplinary action policy, each student eligible for disciplinary action be referred to his or her primary health care professional for evaluation;
- a full assessment for social, medical, and mental health problems be performed by a pediatrician for all students who have been suspended or expelled, as well as those who are at risk for such disciplinary action;
- matters of safety and supervision (including screening for the presence of a gun in the home) be discussed with parents/guardians, whenever their child is barred from school; and
- alternative school settings should be established, particularly when home environments cannot be supervised by working parents/guardians or are inadequately supportive.

GUIDELINES FOR POLICY/PROGRAM DEVELOPMENT AND SCREENING TOOLS

Excellent resources exist for schools interested in creating or updating injury/violence prevention policies and programs, or in obtaining screening tools. Some of these are discussed below, and others are listed in the Resources section at the end of this chapter.

Guidelines

Developed in 2004 with input from more than 300 health, education, and safety professionals representing more than 30 different national organizations, *Health, Mental Health and Safety Guidelines for Schools* assists those who play a role in the assessment, planning, or improvement of school health and safety programs. The guidelines cover the health, mental health, and safety of students and school staff while they are in school, on school grounds, on their way to or from school, or involved in school-sponsored activities. The Guidelines may be accessed online at: http://www.nationalguidelines.org.

CDC's *School Health Index* is a free and easy-to-use self-assessment and planning guide that enables schools to: identify the strengths and weaknesses of their policies and programs for promoting health and safety; develop an action plan for improving student health and safety; and involve teachers, parents, students, and the community in improving school policies, programs, and services. Topics include a wide range of safety-related behaviors. For additional information, se the School Health Index home page on CDC's website at: http://apps.nccd.cdc.gov/shi/Default.aspx.

The 1999 document *Protecting Students from Harassment and Hate Crime: A Guide for Schools*, published by U.S. DOE's Office for Civil Rights and the National Association of Attorneys General and endorsed by the National School Boards Association, includes step-by-step guidance on developing a school district's written antiharassment policy, as well as sample school policies from a number of states. Available at http://www.ed.gov/offices/OCR/archives/Harassment/title.html, the guide includes the following protocols and checklists (see appendices A and B for sample school policies, etc.):

- Complaint Investigation: The Basics
- Checklist for Evaluation of Grievance Procedures
- Investigating Complaints
- Checklist and Survey — Is Harassment a Problem in Your School?
- Hate Crime School Survey
- Addressing Racial Harassment — A Self-Evaluation and Planning Guide for School Districts
- Preventing and Responding to Hate-Motivated Behavior
- Sample Hate-Motivated Behavior Incident Report
- Preventing Hate Speech, Behavior, and Crime
- Guidelines for Determining Hate Motivation
- Protocol on Graffiti Removal
- Conflict Intervention Teams — A Response to School Crises
- Erasing Hate — A Guide to Your Civil Rights in School

Screening Tools

CDC's National Center for Injury Prevention and Control (NCIPC) provides a set of tools to assess violence-related beliefs, behaviors, and influences and to evaluate programs to prevent youth

violence. *Measuring Violence-Related Attitudes, Behaviors, and Influences Among Youths: A Compendium of Assessment Tools* (2nd ed.) contains more than 170 measures to assess aggression in children and teens, as well as peer, family, and community influences. This publication may be read, downloaded, or ordered at http://www.cdc.gov/ncipc/pub-res/measure.htm. Many local school-based health centers in Massachusetts have incorporated effective screening tools for their staff to provide to students.

Exhibit 13-4 at the end of this chapter provides a checklist of early warning signs that may indicate a child or adolescent is at greater-than-average risk of violent behavior. This tool is reprinted from *A Practical Guide for Crisis Response in Our Schools,* a 2003 publication of the American Academy of Experts in Traumatic Stress.

SUMMARY

Schools have unique opportunities to prevent both injuries and violence. Through prevention education in every grade, from kindergarten through grade 12, safety skills may be presented, practiced, and modeled. School policies need to cover a wide variety of safety issues, ranging from playground safety to prevention of sexual harassment. The school climate must be assessed at regular intervals to ensure the respectful treatment of each individual student and staff member. Through their observations and assessments of student behavioral and physical health status, school nurses are in a unique position to identify signs of child abuse, depression, harassment, and dating sexual abuse so that appropriate intervention can occur. Should injuries occur, school nurses can offer onsite assessment and first aid, providing referrals as needed. If schools are proactive in all these responsibilities, students will have opportunities to learn in a safe environment — and develop skills enabling them to incorporate lifelong habits of safety and self-care.

RESOURCES: CURRICULA/TEACHING TOOLS AND REGISTRIES OF EFFECTIVE PROGRAMS

UNINTENTIONAL INJURY: CURRICULA/TEACHING TOOLS

Burn Prevention Foundation
Website: http://www.burnprevention.org
The Burn Prevention Foundation offers a number of educational program curricula for use by wide, early, and primary childhood educators and health care educators. It also provides topical brochures and pamphlets. Curricula include:

- *Learn About Burns Fire & Burn Safety Education Curriculum:* This grade-rated, curricula based program for preschool through grade 3 teaches children about common fire and burn hazards, burn-safe behaviors, proper fire escape and emergency reporting procedures, and survival actions in case a burn occurs. Lessons for preschool-age children are taught through puppet shows and reinforced by activities such as songs and skits, while primary-grade students receive information integrated into current safety and life-skills classroom instruction. Lessons can also incorporate elements of mandated math, verbal, and science curricula.
- *Stop, Drop, Roll & Cool:* Lesson plans are incorporated with an attractive, 3-color instructional poster that can be displayed in the classroom and a video, *Stop! Drop! Roll! Cool! And Call!,* featuring the Philadelphia Eagles' Brian Dawkins leading a group of children in practicing this safety intervention. The video was produced as part of Project BurnSafe©, a joint project of the Burn Prevention Foundation and Burn Foundation, supported by a grant from USFA/FEMA.
- *The Juvenile Fire Setters Intervention and Treatment Program* (short title: P.E.T. — Prevention, Education, and Treatment): This program for children aged 5–17 and their parents/guardians aims to prevent the onset of fire-play and curiosity fire-setting behaviors by children and to decrease fire-setting behaviors. It works by providing a seamless continuum of prevention, education, and treatment.

Risk Watch
Website: http://www.nfpa.org/riskwatch/index.html
Risk Watch is a comprehensive injury prevention program developed by the National Fire Protection Association with cofunding from the Home Safety Council™ and in collaboration with a panel of respected safety and injury-prevention experts. This school-based curriculum links teachers with community safety experts and parents. The curriculum is divided into 5 age-appropriate teaching modules (pre-K/kindergarten, grades 1–2, grades 3–4, grades 5–6, and grades 7–8), each of which addresses: motor vehicle safety; fire and burn prevention; choking, suffocation, and strangulation prevention; poisoning prevention; falls prevention; firearms injury prevention; bike and pedestrian safety; and water safety.

Think-a-Head
Brain Injury Association of Massachusetts
30 Lyman Street
Westborough, MA 01581
Phone: 508-475-0032
Fax: 508-475-0040
Website: http://www.mbia.net
Think-a-Head is a school-based program that teaches schoolchildren to avoid risk-taking behavior and encourages them to adopt healthy habits to avoid brain injury. For elementary and middle schools, the program emphasizes the use of helmets while playing sports and the use of safety belts in cars. For high schools, the program includes the consequences and costs — financial and human — of violence and drunk/drugged driving.

ThinkFirst
ThinkFirst National Injury Prevention Foundation
26 South La Grange Road, Suite 103
La Grange, IL 60525

Phone: 708-588-2000
Fax: 708-588-2002
Website: http://www.thinkfirst.org
The ThinkFirst National Injury Prevention Foundation offers 3 research-validated programs designed to prevent brain and spinal cord injuries through education about personal vulnerability and risk-taking. The programs are: ThinkFirst for Kids (grades 1–3); ThinkFirst for Youth (grades 4–8); and ThinkFirst for Teens (junior high and high school).

Traumaroo Educational Program for Childhood Safety
Website: http://www.amtrauma.org/programs/program_detail_10.html
Traumaroo is the children's safety program of the American Trauma Society that employs the services of the animated character "Troo" to teach important safety habits, with "fun" as a key component. The program helps children develop safe behavior patterns that will become lifelong habits. Traumaroo was developed in 1994 by the American Trauma Society to help reduce preventable injuries among children throughout the country.

USFA Kids
United States Fire Administration
16825 South Seton Avenue
Emmitsburg, MD 21727
Phone: 301-447-1000
Fax: 301-447-1346
Website: http://www.usfa.fema.gov/kids/flash.shtm
The USFA Kids website offers short, downloadable lessons about fire escape planning, smoke alarms, and general home fire safety, as well as games to reinforce information learned. It is recommended that an adult guide children through the lessons. Each lesson is followed by a brief 5-question quiz to test children's knowledge of the subject. Through an additional 10-question quiz, children are given the opportunity to earn a Junior Fire Marshal certificate signed by the U.S. Fire Administrator.

UNINTENTIONAL INJURY: REGISTRIES OF EFFECTIVE PROGRAMS

National Bicycle Safety Education Curriculum Project
Website: http://www.bicyclinginfo.org/ee/fhwa.html
This website offers a database developed by the Federal Highway Administration designed to help users identify a selection of bicycle safety education training materials that address recommended topics and subtopics for different age groups. The site also offers a downloadable guide to developing and/or selecting a bicycle education program.

VIOLENCE: CURRICULA/TEACHING TOOLS

Al's Pals: Kids Making Healthy Choices
Wingspan LLC
4196-A Innslake Drive
Glen Allen, VA 23060
Phone: 804-967-9002
Fax: 804-967-9003
Website: http://www.wingspanworks.com
This resiliency-based early-childhood curriculum and teacher training program develops personal, social, and emotional skills in children aged 3–8. Using 46 interactive lessons, Al's Pals teaches children how to: express feelings appropriately; use kind words; care about others; use self-control; think independently; accept differences; make friends; solve problems peacefully; cope; make safe and healthy choices; and understand that tobacco, alcohol, and illegal drugs are not for children. **Recognitions:** *Model Program*, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services; *Promising Program*, Safe, Disciplined and Drug-Free Schools, U.S. Department of Education; *Effective Program*, Collaborative for Academic, Social, and Emotional Learning (CASEL).

Anti-Defamation League (ADL)
823 United Nations Plaza
New York, NY 10017
Phone: 914-946-4472 or 800-343-5540 (to order materials)
Website: http://www.adl.org
ADL is a human relations organization with 31 regional offices nationwide dedicated to promoting intergroup cooperation and interfaith understanding. ADL's World of Difference Institute has developed several K-12 curricula, fact sheets, and research materials and has worked with numerous schools across the country to design comprehensive, schoolwide policies to foster cultural awareness and increased appreciation for diversity. Over 300,000 children have participated in ADL and World of Difference programs. Materials may be purchased from ADL's *Anti-Bias/Diversity Catalog for Classroom and Community*.

Bully Beware Productions
1421 King Albert Avenue
Coquitlam, BC
Canada V3J 1Y3
Phone/Fax: 888-552-8559 or 604-936-8000
E-mail: bully@direct.ca
Website: http://www.bullybeware.com
Bully Beware Productions produces videos, posters, and books for students and teachers on taking action against bullying.

CASASTART (Striving Together to Achieve Rewarding Tomorrows)
National Center on Addiction and Substance Abuse at Columbia University
633 Third Avenue, 19th Floor
New York, NY 10017
Phone: 212-841-5208
Fax: 212-956-8020
Website: http://www.casacolumbia.org
CASASTART is a community-based, school-centered program designed to keep high-risk preadolescents (aged 8–13) free of drug and crime involvement. Using an intensive and coordinated marriage of preventive services and community-based law enforcement, CASASTART addresses the individual needs of participants as well as the broader problems of their families and communities. The program brings together key stakeholders in a community or neighborhood (schools, law enforcement, social services, and health agencies) under one umbrella and provides case managers available to work daily with high-risk children. **Recognitions:** *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services; *Exemplary Program,* Safe and Drug-Free Schools Program, U.S. Department of Education; *Model Program,* Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice; *Promising Program,* U.S. Surgeon General's Report on Youth Violence.

Child Development Project (CDP)
Developmental Studies Center
2000 Embarcadero, Suite 305
Oakland, CA 94606-5300
Phone: 800-666-7270
Fax: 510-464-3670
E-mail: info@devstu.org
Website: http://www.devstu.org/csrd/cdp_index.html
CDP is a multifaceted, schoolwide improvement program that helps elementary schools become "caring communities of learners" for their students (aged 5–12). CDP significantly reduces children's early alcohol and marijuana use and involvement in violence-related behavior. CDP is designed to strengthen connections among peers and between students of different ages, teachers and students, and home and school, in order to promote: students' commitment to, and engagement in, their schools; students' interpersonal skills and commitment to positive values; and classroom and schoolwide climates of safety, respect, caring, and helpfulness. **Recognitions:** *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services; *Promising Safe and Drug-Free Schools Program,* U.S. Department of Education; *Educational Programs That Work,* U.S. Department of Education.

Choose Respect
E-mail: info@chooserespect.org
Website: http://www.chooserespect.org
Choose Respect is a national CDC (Centers for Disease Control and Prevention) initiative that is designed to help adolescents form healthy relationships to prevent dating abuse before it starts. It aims to motivate adolescents to challenge harmful beliefs about dating abuse and take steps to form respectful relationships including learning how to effectively handle conflicts. The online materials aimed at adolescents include fact sheets, downloads, an e-newsletter, games, interactive learning tools, streaming video clips for teens to make their own movies, television and radio spots, posters, and bookmarks.

Committee for Children (CFC)
568 First Avenue South, Suite 600
Seattle, WA 98104-2804
Phone: 800-634-4449
Fax: 206-343-1445
E-mail: info@cfchildren.org
Website: http://www.cfchildren.org
CFC maintains programs that focus on social and emotional learning and violence prevention. CFC curricula address such topics as youth violence, bullying, child abuse, and personal safety. Curricula include:

- *Second Step: A Violence Prevention Curriculum* teaches social and emotional skills for violence prevention. The program includes research-based, teacher-friendly curricula, training for educators, and parent-education components.
- *Steps to Respect: A Bullying Prevention Program* is a schoolwide curriculum that trains adults to deal with bullying effectively while teaching children skills to develop healthy relationships and decrease bullying behavior.

Creating Lasting Family Connections (CLFC)
Council on Prevention and Education: Substances, Inc. (COPES)
845 Barret Avenue
Louisville, KY 40204
Phone: 502-583-6820
Fax: 502-583-6832
Website: http://www.copes.org/include/clfc.htm
This comprehensive family-strengthening curriculum for preventing substance abuse and violence has scientifically demonstrated that youth and families in high-risk environments can be assisted to become strong, healthy, and supportive people. CLFC provides parents and children with strong defenses against environmental risk factors by teaching appropriate skills for personal growth, family enhancement, and interpersonal communication, including refusal skills for both parents and youth. **Recognitions:** *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services; *Model Family Strengthening Program,* Office of Juvenile Justice and Delinquency Prevention; *Promising Program,* U.S. Department of Education; *Special Recognition Award,* Office of National Drug Control Policy; *YouthNet Model Program,* selected for worldwide replication by the International Youth Foundation.

CyberSmart! Curriculum
CyberSmart Education Company
Website: http://www.cybersmart.org
This free K–8 curriculum, originally copublished with Macmillan/McGraw-Hill, is correlated to the International Society for Technology in Education's National Education Technology Standards (NETS). It consists of 65 original, nonsequential, and standards-based lesson plans, student activity sheets, posters, and information for families that seek to empower K–8 students to use the Internet safely, responsibly, and effectively.

Drawing the Line
American College of Obstetricians and Gynecologists (ACOG)
Phone: 202-638-5577
Website: http://www.acog.org

Drawing the Line is a guide to developing effective sexual assault prevention programs for middle-school students.

Gang Resistance Education And Training Program (G.R.E.A.T.)
Bureau of Alcohol, Tobacco, Firearms, and Explosives
Office of Public and Governmental Affairs
650 Massachusetts Avenue, NW
Room 8290
Washington, DC 20226
Phone: 800-726-7070 or 202-927-2160
E-mail: great@atf.gov
Website: http://www.alf.gov
G.R.E.A.T., a school-based life-skills competency program taught by uniformed police officers, is designed to enable youth to develop positive attitudes toward police officers, avoid conflicts, be responsible, set positive goals, and resist peer pressure. These life skills empower young people to avoid violent behavior.

Healing the Hate
National Hate Crime Prevention Project
Educational Development Center
55 Chapel Street
Newton, MA 02458
Phone: 800-225-4276 or 617-969-7100 x2534
Healing the Hate, a curriculum developed for middle schools by the National Hate Crime Prevention Project, is funded jointly by the U.S. Department of Justice's Office of Juvenile Justice and Delinquency Prevention and the U.S. Department of Education's Safe and Drug-Free Schools Program. Copies of this curriculum may be obtained from the Juvenile Justice Clearinghouse, Office of Juvenile Justice and Delinquency Prevention, P.O. Box 6000, Rockville, MD 20849-6000, phone: 800-638-8736, e-mail: askncjrs@ncjrs.org, website: http://www.ncjrs.gov/pdffiles1/165479.pdf.

In Care of Students/Blue Heron Press
34 Bone Hollow Road
Accord, NY 12404
Phone: 845-687-8772
E-mail: info@blueheronpress.com
Website: http://www.blueheronpress.com
Publications, recordings, and workshops designed to assist schools to integrate social and emotional learning programs into their curriculum. Publications include:

- *Building Classroom Communities: Strategies for Developing a Culture of Caring,* David A. Levine (for grades K–6)
- *Teaching Empathy: A Social Skills/Anti-Bullying In-Service Resource Manual for All School Staff,* David A. Levine
- *The Peer Partners Handbook: Helping Your Friends Live Free from Violence, Drug Use, Teen Pregnancy and Suicide,* David A. Levine and Jerry Kreitzer, Station Hill Press

Incredible Years
1411 8th Avenue West
Seattle, WA 98119
Phone: 888-506-3562 or 206-285-7565
Fax: 206-285-7565
E-mail: incredibleyears@seanet.com
Website: http://www.incredibleyears.com
Incredible Years, a series of 3 comprehensive, multifaceted, and developmentally based curricula for parents, teachers, and children, is designed to promote emotional and social competence and to prevent, reduce, and treat behavioral and emotional problems in young children (aged 2–8). Young children with high rates of aggressive behavioral problems have been shown to be at great risk for developing substance abuse problems, becoming involved with deviant peer groups, dropping out of school, and engaging in delinquency and violence. **Recognitions:** *Model Program,* Substance Abuse and Mental Health Services

Administration, U.S. Department of Health and Human Services; *Model Program,* Office of Juvenile Justice and Delinquency Prevention; *U.S. Leila Rowland National Mental Health Award.*

i-SAFE America, Inc.
5900 Pasteur Court, Suite 100
Carlsbad, CA 92008
Phone: 760-603-7911
Fax: 760-603-8382
Website: http://www.isafe.org/
i-SAFE America, a nonprofit foundation, educates and empowers youth to make their Internet experiences safe and responsible. Its goal is to teach students how to avoid dangerous, inappropriate, or unlawful online behavior. i-SAFE accomplishes this through: dynamic K–12 curriculum; community outreach programs to parents, law enforcement, and community leaders; and an online newsletter and information resources for students. i-SAFE programs are available in all 50 states, Washington DC, and Department of Defense schools located across the world. It is the only Internet safety foundation to combine these elements. All curriculum, outreach, and youth empowerment materials as well as the professional development program are provided at no charge to schools, school districts, and law enforcement agencies.

Leadership and Resiliency Program (LRP)
Prevention Services, Alcohol and Drug Services
Fairfax–Falls Church Community Services Board
3900 Jermantown Road, Suite 200
Fairfax, VA 22030
Phone: 703-934-5476
Fax: 703-934-8742
LRP is a school- and community-based program for high school students (aged 14–17) that works to enhance youths' internal strengths and resiliency while preventing involvement in substance use and violence. The program makes use of: resiliency groups held at least weekly during the school day; alternative adventure activities that include ropes courses, whitewater kayaking, camping, and hiking trips; and community service in which participants are active in a number of community- and school-focused projects.
Recognitions: *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services; *Best Practices in Science-Based Programming,* Washington Metropolitan Council of Governments; *Achievement Award,* National Association of Counties; *Governor's Recognition,* Commonwealth of Virginia.

Love is Not Abuse Curriculum
Liz Claiborne, Inc.
Website: http://www.loveisnotabuse.com/teen_curriculum.htm
The *Love Is Not Abuse* Curriculum is a step-by-step guide to teaching high school students about the issue of dating violence. Using literature and poetry, this program provides teachers with the tools to teach about this sensitive subject and is intended to be taught in either Health or English/Language Arts classes.

May Institute
Website: http://www.mayinstitute.org/childrens_services/school_programs.asp
May Institute's Positive Schools program supports and encourages positive behavior and has successfully reduced disruptive behavior and improved academic engagement in hundreds of schools. Its SPEAK program is a child abuse prevention initiative designed to educate youngsters about abuse.

NetSmartz Workshop
Website: http://www.netsmartz.org
The NetSmartz Workshop is an interactive, educational safety resource from the National Center for Missing & Exploited Children® and Boys & Girls Clubs of America for children aged 5–17, parents, guardians, educators, and law enforcement that uses age-appropriate, 3-D activities to teach children how to stay safer on the Internet.

New England Child Assault Prevention (NECAP)
Phone: 617-969-5906 x143

NECAP is a consortium of area CAP (child assault prevention) programs. CAP is a primary prevention program that teaches children strategies to prevent verbal, physical, and sexual assault. CAP's threefold approach to prevention includes teacher/staff in-service, parent programs, and children's workshops. Since its inception in 1978, the CAP program has trained teams in 32 states and more than 10 countries. A list of agencies that offer CAP in Massachusetts is available from NECAP.

Olweus Bullying Prevention
Institute on Family and Neighborhood Life
Clemson University
158 Poole Agricultural Center
Clemson, SC 29634
Phone: 864-710-4562
Fax: 406-862-8971
Website: http://www.clemson.edu/olweus/
Olweus Bullying Prevention is a multilevel, multicomponent school-based program designed to prevent or reduce bullying in elementary, middle, and junior high schools (students aged 6–15). The program attempts to restructure the existing school environment to reduce opportunities and rewards for bullying. School staff is largely responsible for introducing and implementing the program. Their efforts are directed toward improving peer relations and making the school a safe and positive place for students to learn and develop. Recognitions: *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services, and Office of Juvenile Justice Delinquency Prevention.

Prevent Child Abuse America
500 N. Michigan Avenue Suite 200
Chicago, IL 60611
Phone: 312-663-3520
Fax: 312-939-8962
E-mail: mailbox@preventchildabuse.org
Website: http://www.preventchildabuse.org/contact_us.html

Publications:

- *You're in Charge! About Saying No to an Unwanted Touch* (coloring and activities book, English and Spanish)
- *What Every Kid Should Know About Sexual Abuse* (coloring and activities book)
- *Let's Learn About Using the Internet Safely* (information and activities book for children)
- *My Body Belongs to Me* (children's book, English and Spanish)
- *Internet Safety and Your Child* (guide for parents)
- *We Wonder™ — Keeping My Body Safe!*
- *The Amazing Spider-Man® on Bullying Prevention* (developed in association with Marvel Comics)

Project ACHIEVE
Institute for School Reform
Integrated Services, and Child Mental Health and Educational Policy
49 Woodberry Road
Little Rock, AR 72212
Phone: 501-312-1484
Fax: 501-312-1493
Website: http://www.projectachieve.info
Project ACHIEVE is an innovative school reform and school effectiveness program developed for use in preschool, elementary, and middle schools (students aged 3–14). It is designed to help schools, communities, and families develop, strengthen, and solidify their youth's resilience, protective factors, and self-management skills. Project ACHIEVE implements schoolwide positive behavioral and academic prevention programs that focus on the needs of all students. It also develops and implements strategic intervention programs for at-risk and underachieving students, and it coordinates comprehensive and multifaceted "wraparound" programs for students with intensive needs. **Recognitions:** *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human

Services; *Exemplary Program,* White House Conference on School Safety; *Effective School Reform Program,* Center for Effective Collaboration and Practice, American Institutes for Research.

Project Alliance
Middlesex Partnerships for Youth, Inc.
40 Thorndike Street
Cambridge, MA 02141
Phone: 617-679-6553
Fax: 617-679-6557
Website: http://www.projectalliance.org/index.html
Middlesex Partnerships for Youth, Inc. is a nonprofit organization providing prevention and intervention resources and training to Middlesex school districts and communities. Project Alliance was established in 1988 by the Middlesex District Attorney's Office and 10 school districts as a way of fostering communication on school-related legal issues relating to substance abuse and violence. Today, over 50 Middlesex school districts are participating in ongoing examination of pressing social, legal, and health-related issues and solutions that face schools and communities. Under the auspices of Project Alliance, educators, parents, and students can regularly engage in collaborative trainings with law enforcement, social services, and community-based organizations as well as share the latest information and resources. The project also offers educational products (videos, curricula, brochures) on topics such as bullying. (For additional information, see listing under Massachusetts Agencies and Organizations.)

Project TEAMWORK — Athletes Against Violence Initiative
Northeastern University's Center for the Study of Sport in Society
716 Columbus Avenue
Boston, MA 02120
Phone: 617-373-4025
Fax: 617-373-4566
E-mail: sportinsociety@neu.edu
Website: http://www.sportinsociety.org/
Project TEAMWORK — Athletes Against Violence Initiative is a curriculum for grades 6–12 that empowers students to deal more effectively with racism, prejudice, bias, and conflict.

Promoting Alternative Thinking Strategies (PATHS)
Prevention Research Center
Henderson Building S-109
Pennsylvania State University
University Park, PA 16802
Phone: 814-865-2618
Fax: 814-865-2530
Website: http://www.prevention.psu.edu/projects/PATHS.html
PATHS is a comprehensive, multiyear (K–6) program for promoting emotional and social competencies and reducing aggression and acting-out behaviors in elementary-school-age children while simultaneously enhancing the educational process in the classroom. **Recognitions:** *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services; *Model Program,* Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice*; Promising Program,* U.S. Surgeon General's Report on Youth Violence; *Promising Program,* Safe and Drug-Free Schools Program, U.S. Department of Education; *Best Practices in Youth Violence Prevention Program,* Centers for Disease Control and Prevention, U.S. Department of Health and Human Services; *SELect Program* (Collaborative for Academic, Social and Emotional Learning).

The Respect for All Project
Women's Educational Media
2180 Bryant Street, Suite 203
San Francisco, CA 94110
Phone: 415-641-4616
Fax: 415-641-4632
Website: http://www.womedia.org

The Respect for All Project seeks to create safe schools and communities by giving youth and the adults who guide their development the tools they need to talk openly about diversity in all its forms. Projects offer a comprehensive set of resources for educators and youth-service providers, including award-winning documentary films, printed curriculum guides, and professional diversity training.
Project Films include:

- *Let's Get Real* is a film for grade 6 and above that provides insight into both the experiences of students who are targeted for bullying and the motivations of those who do the bullying. The accompanying 130-page curriculum guide features valuable lesson plans, discussion starters, classroom activities, and handouts for teachers to use in conjunction with the film.
- *That's a Family!* is a film for kids in grades K–8 about family diversity.
- *It's Elementary — Talking About Gay Issues in School* addresses antigay prejudice by providing adults with practical lessons on how to talk with kids about gay people.

Responding in Peaceful and Positive Ways (RIPP)
Department of Psychology
Virginia Commonwealth University
VCU Box 2018
808 West Franklin Street
Richmond, VA 23284
Phone: 804-828-0015
Fax: 804-828-2237
RIPP is a school-based violence prevention program designed to provide students in middle and junior high schools with conflict resolution strategies and skills. It combines a 3-year classroom curriculum of social/cognitive problem solving with real-life skill-building opportunities such as peer mediation.
Recognitions: *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services; *Effective Program,* Safe and Drug-Free Schools, U.S. Department of Education.

Safe Dates
Hazelden Publishing and Education Services
15251 Pleasant Valley Road, Box 176
Center City, MN 55012-0176
Phone: 800-328-9000 x4030 or 651-213-4030
Fax: 651-213-4793
E-mail: astanding@hazelden.org
Website: http://www.hazelden.org
Safe Dates is a school-based program designed to stop or prevent the initiation of psychological, physical, and sexual abuse on dates or between individuals involved in a dating relationship. Intended for male and female middle- and high-school students aged 12–18, the Safe Dates program can stand alone or fit within a health education or family or general life skills curriculum. It consists of a curriculum with 9 50-minute sessions, a 45-minute play to be performed by students, and a poster contest. **Recognitions:** *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services; *Exemplary Program,* Safe and Drug-Free Schools Program, U.S. Department of Education; *Promising Program,* Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice.

Second Step
Committee for Children
Client Support Services Dept.
568 First Avenue, Suite 600
Seattle, WA 98104
Phone: 800-634-4449
Fax: 206-438-6765
E-mail: info@cfchildren.org
Website: http://www.cfchildren.org/program_ss.shtml
Second Step is a classroom-based social skills program for preschool through junior high students (aged 4–14). It is designed to reduce impulsive, high-risk, and aggressive behaviors and increase children's social-emotional competence and other protective factors. The program's lesson content varies by grade level and

is organized into 3 skill-building units covering empathy, impulse control, and anger management. **Recognitions:** *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services; *Exemplary Program,* U.S. Department of Education; *"A" Program,* Drug Strategies.

Students Managing Anger and Resolution Together (SMART) Team
University of Arizona
College of Education
P.O. Box 210069
Tucson, AZ 85721-0069
Phone: 520-626-4964
Fax: 520-626-9268
E-mail: boswortk@u.arizona.edu
Website: http://www.drugstats.org
SMART Team is an 8-module, multimedia software program designed to teach violence prevention messages and methods to students in grades 6–9 (aged 11–15). The program's content fits well with commonly used conflict-mediation curricula and other violence prevention strategies schools may implement. Operation is straightforward, so students can access the modules independently for information, for skill-building practice, or to resolve a conflict. This independence eliminates the need for trained adult implementers. **Recognitions:** *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services; *Promising Program,* U.S. Department of Education.

Talking About Touching
Massachusetts Children's Trust Fund (MCTF)
294 Washington Street, Suite 640
Boston, MA 02108
Phone: 888-775-4KIDS or 617-727-8957
Fax: 617-727-8997
E-mail: info@mctf.state.ma.us
Website: http://www.mctf.org
MCTF is the lead coordinator and training agency bringing Talking About Touching, a child personal safety curriculum for families and children in kindergarten and grades 1–4, to Massachusetts. (For additional information about MCTF activities, see Child Abuse and Neglect and Child Sexual Abuse sections in Resources.)

Teaching Students to be Peacemakers
Cooperative Learning Center
College of Education and Human Development
University of Minnesota, 60 Peik Hall
159 Pillsbury Drive SE
Minneapolis, MN 55455
Phone: 952-831-9500
Fax: 952-831-9332
Teaching Students to be Peacemakers teaches conflict resolution procedures and skills to students, faculty, and staff. Through 20 30-minute lessons, the program aims to: make the school a safe place where violence and destructive conflicts are prevented and constructive conflicts are used to improve the quality of school life; teach students, faculty, and staff how to mediate schoolmates' conflicts and negotiate to solve problems and reach agreements liked by all disputants; ensure all school members use the same procedures for resolving conflicts; enable teachers and administrators to model constructive conflict resolution; and free teachers' time and energy otherwise spent on managing classroom conflicts. **Recognition:** *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

Teaching Tolerance
400 Washington Avenue
Montgomery, AL 36104
Phone: 334-956-8200

Fax: 334-264-7310
Website: http://www.tolerance.org
Teaching Tolerance is a national education project dedicated to helping teachers foster equity, respect, and understanding in the classroom and beyond. A project of the Southern Poverty Law Center, Teaching Tolerance offers free or low-cost resources to educators at all levels, including the free video-and-text teaching kits *America's Civil Rights Movement* and *The Shadow of Hate,* and *Starting Small,* a teacher-training kit for early-childhood educators. The organization also publishes the semiannual magazine *Teaching Tolerance,* which addresses classroom themes of tolerance, respect, and community-building and is distributed free to more than half a million educators throughout the U.S. and in 70 other countries.

Twemlow & Sacco Consulting
1695 Main Street, Suite 400
Springfield, MA 01001
Phone: 413-739-5572
Website: http://www.backoffbully.com/
This developer of antiviolence programs in schools specializes in "systemic" interventions that impact on the school's learning climate, using an approach that relies heavily on traditional martial arts philosophy, applied psychoanalysis, and large-group psychology.

Wellesley Centers for Women (WCW)
Wellesley College
106 Central Street
Wellesley, MA 02481
Phone: 781-283-2500
Fax: 781-283-2504
E-mail: wcw@wellesley.edu
Website: http://www.wcwonline.org
Programs:

- *Bullyproof: A Teacher's Guide on Teasing and Bullying for Use with Fourth and Fifth Grade Students,* containing 11 sequential lessons, combines class discussions, role plays, case studies, writing exercises, reading assignments, art activities, and nightly homework to give students the opportunity to explore and determine the fine distinctions between "teasing" and "bullying." Children gain a conceptual framework and a common vocabulary that allows them to find their own links between teasing and bullying and, eventually, sexual harassment.
- *Flirting or Hurting? Sexual Harassment in Schools,* authored by Nan D. Stein and Lisa Sjostrom, consists of 6–10 classroom lessons suitable for social studies, English, psychology, or health classes. It includes student handouts (case studies, ethnography assignments, quizzes, a survey, definitions, and legal information) and teacher materials. A video, produced by public television WGBY TV Teacher Media Service, Springfield, MA, is available with a 105-page teachers' guide from GPN Educational Media (program 691) at 800-228-4630 or http://gpn.unl.edu.
- *QUIT IT! A Teacher's Guide on Teasing and Bullying for Use with Students in Grades K–3* contains 10 lessons focused around 3 sequential themes. Class discussions, role plays, creative drawing and writing activities, physical games and exercises, and connections to children's literature give children a vocabulary and a conceptual framework for understanding the distinction between teasing and bullying. Ideas for communicating with parents are also included.

INTENTIONAL INJURY/VIOLENCE: REGISTRIES OF EFFECTIVE PROGRAMS

Blueprints for Violence Prevention
Website: http://www.colorado.edu/cspv/blueprints
Blueprints for Violence Prevention is a collection of 11 model violence prevention and intervention programs that meet a strict scientific standard of program effectiveness, and 18 other promising programs. These programs were identified from more than 600 reviewed by the Center for the Study and Prevention of Violence (CSPV) at the University of Colorado at Boulder and an advisory board of violence-prevention experts, with funding from the Colorado Division of Criminal Justice, CDC, and the Pennsylvania

Commission on Crime and Delinquency. The 11 model programs (called "Blueprints") have been effective in reducing adolescent violent crime, aggression, delinquency, and substance abuse. The Office of Juvenile Justice and Delinquency Prevention (OJJDP), an active supporter of the project, provided funding to CSPV to sponsor program replications in sites across the United States. The Center continues to seek programs that meet the selection criteria. A detailed report on the Blueprints for Violence Prevention initiative is available on the OJJDP website (http://www.ojp.usdoj.gov/ojjdp) by searching for "blueprints" under Publications Search. A limited number of hard copies are available from CSPV at a cost of $6.

Evidence-Based Practices in Suicide Prevention Program (EBPP)
Website: http://www.sprc.org/whatweoffer/ebp.asp
EBPP is an online registry of 14 evidence-based suicide prevention programs compiled by the Suicide Prevention Resource Center (SPRC) and the American Foundation for Suicide Prevention (AFSP). Future reviews of suicide prevention programs will be conducted as part of the National Registry of Evidence-Based Programs and Practices (NREPP), under the direction of the Science to Service Office, Substance Abuse and Mental Health Services Administration. SPRC and AFSP will support NREPP by helping prepare program data for review.

Exemplary and Promising: Safe, Disciplined, and Drug-Free Schools Programs
Website: http://www.ed.gov/admins/lead/safety/exemplary01/report_pg9.html?exp=0
This registry, sponsored by the Office of Safe and Drug-Free Schools, U.S. Department of Education, includes programs for building social competencies and violence prevention treatment programs.

Model Programs Guide
Website: http://www.dsgonline.com/Model_Programs_Guide/Web/mpg_index_flash.htm
This registry, sponsored by the Office of Juvenile Justice and Delinquency Prevention, includes programs of many types. Relevant categories include prevention curricula and services, behavior management, school/classroom environment, truancy prevention, parent training, peer mediation, and gang prevention.

National Registry of Effective Programs
Website: http://www.modelprograms.samhsa.gov
Sponsored by the Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services, this registry includes programs of many types. Relevant categories include antisocial/aggressive behavior, psychological trauma, social and emotional learning, and violence prevention.

Safeguarding Our Children: An Action Guide
Website: http://www.ed.gov/admnis/lead/safety/actguide/index.html
Developed as a follow-up to *Early Warning, Timely Response: A Guide to Safe Schools*, this report provides numerous examples of effective programs and practices to address school safety issues, including prevention, early intervention, and intensive services.

Virginia Best Practices in School-Based Youth Violence Prevention Project
Website: http://www.pubinfo.vcu.edu/vabp/
This repository of information on "best practice" school-based youth violence prevention programs and how they are being used in Virginia schools is compiled by the VCU Center for the Study and Prevention of Youth Violence (CSPYV) in collaboration with the Virginia Department of Education.

Youth Gang Programs and Strategies
Website: http://www.ncjrs.org/html/ojjdp/summary_2000_8/home.html
Prepared for the Office of Juvenile Justice and Delinquency Prevention, this report provides information about the effectiveness of specific prevention, intervention, and suppression programs, as well as strategies using multiple techniques.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS

UNINTENTIONAL INJURY

Brain Injury Association of Massachusetts
484 Main Street #325
Worcester, MA 01608
Phone: 508-795-0244
Fax: 508-757-9109
Website: http://www.mbia.net
Brain Injury Association of Massachusetts provides head injury prevention speakers and materials and offers a school-based prevention program, *Think-a-Head,* with modules for elementary- middle-, and high-school students (see Curricula/Teaching Tools and Registries of Effective Programs sections for more information).

Childhood Injury Prevention Program (CIPP)
Boston Public Health Commission
774 Albany Street, 1st floor, Finland Building
Boston, MA 02118
Phone: 617-534-2633
Website: http://www.bphc.org/childinjuryprevention
CIPP's goal is to increase awareness that injuries are preventable. CIPP combines education, technology, and legislation to reduce the risk of injury to children and offers training, safety supplies, and educational literature to the community to facilitate behavioral and environmental changes. CIPP is the lead agency of the Greater Boston SAFE KIDS Coalition, the local chapter of Safe Kids Worldwide.

Massachusetts Department of Public Health (DPH)
Injury Prevention and Control Program
250 Washington Street, 4th Floor
Boston, MA 02108
Phone: 617-624-5413
Fax: 617-624-5075
TTY: 617-624-5992
Website: http://www.state.ma.us/dph/fch/injury/index.htm
The mission of the Injury Prevention and Control Program is to reduce the rates of injuries to children and improve emergency medical services for children. The program serves communities, groups, and individuals by offering training and health education, technical assistance, data analysis and reports, coalition and task force leadership, program development assistance, and public information materials. Publications include:

- The *Injury Information Packet* program distributes sets of materials 4 times a year designed for health care professionals, educators, safety officers, and others who work with children. Topics include child passenger safety, violence prevention, and home safety. To be placed on the mailing list, call 617-624-5413.
- *Massachusetts Injury Prevention Yellow Pages: A Guide to Injury Prevention Programs and Resources* provides a comprehensive listing of programs and resources in the Commonwealth that address injury prevention. It can be obtained from the DPH website or by calling DPH.

Occupational Health Surveillance Program
Phone: 617-624-5632
Website: http://www.mass.gov/dph/bhsre/ohsp/ohsp.htm

Regional Center for Poison Control and Prevention
Children's Hospital Boston
300 Longwood Avenue, 1C Smith Building
Boston, MA 02115
Phone: 800-222-1222
TTY: 800-244-5313
Website: http://www.maripoisoncenter.org

Serving Massachusetts and Rhode Island, the Center operates a toll-free statewide 24-hour phone line for poisoning emergencies and information.

SAFE KIDS Western Massachusetts
Baystate Medical Center
759 Chestnut Street
Springfield, MA 01199
Phone: 413-794-5434
Website: http://www.baystatehealth.com/safekids
The Western Massachusetts SAFE KIDS Coalition teaches parents and caregivers how to keep kids free from injury. Its monthly SAFE KIDS E-Newsletter provides: safety tips; information about child-related product recalls; CPR and first aid class times and locations; a calendar of car seat checks, bike rodeos, and other safety events; and links to useful safety-related websites.

VIOLENCE

Jane Doe Inc., The Massachusetts Coalition Against Sexual Assault and Domestic Violence
14 Beacon Street Suite 507
Boston, MA 02108
Phone: 617-248-0922
Fax: 617-248-0902
TTY: 617-263-2200
Website: http://www.janedoe.org/index.htm
Jane Doe Inc. (JDI) brings together organizations and people committed to ending domestic violence and sexual assault. It seeks to address the root causes of this violence and promote justice, safety, and healing for survivors. JDI advocates for responsive public policy, promotes collaboration, raises public awareness, and supports its member organizations to provide comprehensive prevention and intervention services.

Massachusetts Child Sexual Abuse Prevention Partnership
Phone: 617-742-8555
Website: http://www.enoughabuse.org
The Partnership is a collaboration of 23 state-level public and private agencies that came together to provide leadership to address the problem of child sexual abuse in Massachusetts. Working with CDC funding to pilot and evaluate new programs and strategies to prevent child sexual abuse, the Partnership is breaking new ground in 2 key ways: (1) emphasizing the need to hold adults and communities responsible for preventing child sexual abuse, and (2) emphasizing the need to educate adults and communities about how to focus on possible warning signs in adults who interact with children, rather than focusing only on recognizing possible physical or behavioral signs in children after they have been abused. The Partnership develops prevention messages and teaching tools that will educate key groups — parents, health care professionals, and other concerned adults, as well as families and friends of active and potential perpetrators — about how to recognize *and* respond properly to child sexual abuse.

Massachusetts Citizens for Children (MCC)
14 Beacon Street, Suite 706
Boston, MA 02108
Phone: 617-742-8555
Fax: 617-742-7808
Website: http://www.masskids.org/index.html
MCC is a nonprofit statewide child advocacy organization whose mission is to improve the lives of the state's most vulnerable children through advocacy by concerned citizens. The organization researches and documents unmet needs, evaluates existing programs and policies, and acts as a catalyst to link individuals and groups around common concerns. MCC educates the general public and professionals through conferences, workshops, demonstration projects, publications, public opinion polling, and the media.

Massachusetts Department of Public Health (DPH)
Violence Prevention & Intervention Services

250 Washington Street
Boston, MA 02108
Phone: 617-624-5463
Fax: 617-624-5075
Website: http://www.mass.gov/dph/fch/violence/index.htm
Violence Prevention and Intervention Services (VPIS) in the Bureau of Family and Community Health represents a number of program initiatives which provide direct services, community outreach and education, professional education, and data collection with a particular focus on violence against women and children. In addition to existing categorically within VPIS, violence prevention initiatives are integrated into a broad array of programs throughout the Department. These programs include: Batterer Intervention Program Services; Domestic Violence Screening, Care, Referral and Information Project; Outreach to Faith Communities; the Rural Domestic Violence and Child Victimization Project; Sexual Assault Prevention and Survivor Services; Shaken Baby Syndrome Prevention; Youth Violence Prevention; Supportive and Health Communities for Gay and Lesbian Youth; and the Sexual Assault Nurse Examiner Program.

Massachusetts Department of Social Services (DSS)
24 Farnsworth Street
Boston, MA 02210
Phone: 617-748-2000
Website: http://www.mass.gov/dss
DSS is the Massachusetts state agency charged with the responsibility of protecting children from child abuse and neglect.

Massachusetts Governor's Commission on Sexual and Domestic Violence
Phone: 617-727-6300 x25311
The Commission is a private/public partnership of nearly 100 individuals representing the various agencies and organizations that provide funding and services and hold perpetrators accountable for crimes of child sexual abuse, domestic violence, or sexual assault. The Commission is divided into 7 main committees: Child and Adolescence; Data, Analysis, Research and Evaluation; Immigrants and Refugees; Justice and Accountability; Legislative; Prevention and Education; and Survivor Services.

Massachusetts Office of Victim Assistance (MOVA)
One Ashburton Place, Suite 1101
Boston, MA 02108
Phone: 617-727-5200
Fax: 617-727-6552
E-mail: mova@state.ma.us
Website: http://www.mass.gov/mova
MOVA is an independent state agency whose purpose is to advocate and assist victims of crime. MOVA provides direct assistance to crime victims as well as policy advocacy, public awareness and education, coordination of victim services, assistance for service providers, and court-based programs to assist victims of domestic violence. In addition, MOVA administers federal Victim of Crime Act (VOCA)-funds. VOCA-funded agencies in Massachusetts provide free services for victims of child sexual and physical abuse and child witnesses to violence, as well as services for other crime victims. Children's services are often part of the network of specialized mental health providers affiliated with Child Advocacy Centers (CACs)/Sexual Abuse Intervention Network (SAIN) Teams.

Middlesex District Attorney's Office
Resources and Educational Alliances for Community Health (REACH)
Middlesex Superior Courthouse
40 Thorndike Street, Floor 2
Cambridge, MA 02141
Phone: 617-679-6500
REACH is an initiative of the Middlesex District Attorney's office to integrate prevention, intervention, and education programs and to reach every educator, police officer, parent, student, and business leader with the information and resources they need to maintain day-to-day safety and to foster an overall climate of respect and accomplishment in schools and communities. Programs include:

- **Community Based Justice (CBJ)**
  Phone: 978-458-4440
  CBJ teams composed of school officials, police, prosecutors, probation officers, corrections officers, and social service professionals in individual cities or towns work in a coordinated manner to maintain public safety and deter high-risk and violent youth by steering them in a more positive, productive direction.
- **Project Alliance**
  Middlesex Partnerships for Youth, Inc.
  Phone: 617-679-6553
  Fax: 617-679-6557
  Website: http://www.projectalliance.org/index.html
  Middlesex Partnerships for Youth is a nonprofit organization providing prevention and intervention resources and training to Middlesex school districts and communities. The organization was established in 1988 by the Middlesex District Attorney's Office and 10 school districts as a way of fostering communication on school-related legal issues relating to substance abuse and violence. Today, over 50 Middlesex school districts are participating in ongoing examination of pressing social, legal, and health-related issues and solutions that face schools and communities.
  Publication: *Mandated Reporting: What Schools Need to Know,* an 8-page guide produced in cooperation with the Middlesex District Attorney's Office and DSS, features practical information about the roles and responsibilities of mandated reporters, with a focus on those working in schools. Its informative articles, written with educators in mind, address topics including identifying child abuse or neglect, responding to an abused or neglected child, reporting suspected abuse or neglect, and the complete 51A process, from reporting to service implementation. The guide may be downloaded free from the website.
- **Safe, Effective Community Understanding for Response to Emergencies (SECURE)**
  Phone: 617-679-6641
  SECURE assists cities and towns in developing and maintaining practical school safety plans. It coordinates with the policies of the Massachusetts State Police Bomb Squad, Massachusetts Emergency Management Agency, and North Eastern Massachusetts Law Enforcement Council (NEMLEC), as well as local schools, police and fire departments, and emergency medical teams.

SafeLink
Phone: 877-785-2020 (English) or 800-223-5001 (Spanish)
SafeLink is a 24-hour multilingual hotline for domestic violence and sexual assault programs in Massachusetts. Advocates are available to discuss callers' needs and help them find shelters, programs, and other resources.

Wellesley Centers for Women (WCW)
Wellesley College
106 Central Street
Wellesley, MA 02481
Phone: 781-283-2500
Fax: 781-283-2504
E-mail: wcw@wellesley.edu
Website: http://www.wcwonline.org
Since 1974, the Center for Research on Women at WCW has conducted groundbreaking interdisciplinary studies in such areas as gender equity in education, sexual violence/harassment in schools, relationship violence, adolescent development, and teasing and bullying. (For information about school curricula from WCW on some of these topics, see Resources: Curricula/Teaching Tools.)

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS

GENERAL

American Academy of Experts in Traumatic Stress
368 Veterans Memorial Highway
Commack, NY 11725
Phone: 631-543-2217
Fax: 631-543-6977
E-mail: info@aaets.org
Website: http://www.aaets.org or http://www.schoolcrisisresponse.com
The Academy is a multidisciplinary network of professionals who are committed to the advancement of intervention for survivors of trauma. The Academy aims to identify expertise among professionals across disciplines and to provide meaningful standards for those who work regularly with survivors. In addition to the devastating effects of large-scale disasters and catastrophes, the Academy is committed to fostering a greater appreciation of the effects of day-to-day traumatic experiences (e.g., chronic illness, accidents, domestic violence, and loss).

American Trauma Society
8903 Presidential Parkway Suite 512
Upper Marlboro, MD 20772
Phone: 800-556-7890
E-mail: atstrauma@aol.com
Website: http://www.amtrauma.org
ATS develops and supports information and programs that prevent injuries from occurring and that provide quality trauma care for victims to prevent death and disability. (See Resources: Curricula/Tools and Registries of Effective Programs for information about ATS's Traumaroo Educational Program for Childhood Safety.)

Centers for Disease Control and Prevention (CDC)
National Center for Chronic Disease Prevention and Health Promotion
Healthy Youth
P.O. Box 8817
Silver Spring, MD 20907
Phone: 888-231-6405
Fax: 888-282-7681
E-mail: HealthyYouth@cdc.gov
Website: http://www.cdc.gov/HealthyYouth/injury (Injury and Violence Section)
Tool: *School Health Index (SHI): A Self-Assessment and Planning Guide* (3rd ed.) is a well-known program and policy evaluation tool for schools that addresses injury and violence, as well as physical activity, nutrition, and tobacco-free lifestyle issues. Free printed copies may be requested by phone, fax, or e-mail, and it may also be viewed or downloaded at http://apps.nccd.cdc.gov/shi/.

Centers for Disease Control and Prevention (CDC)
National Center for Injury Prevention and Control (NCIPC)
Mail Stop K65
4770 Buford Highway NE
Atlanta, GA 30341-3724
Phone: 770-488-1506
Fax: 770-488-1667
E-mail: OHCINFO@cdc.gov
Website: http://www.cdc.gov/injury
NCIPC works to reduce morbidity, disability, mortality, and costs associated with both unintentional injuries and violence.

Children's Safety Network (CSN)
Education Development Center, Inc.
55 Chapel Street
Newton, MA 02458-1060
Phone: 617-618-2230
E-mail: csn@edc.org
Website: http://www.childrenssafetynetwork.org/
CSN is a resource center for maternal and child health and injury prevention professionals in state and territorial health departments who are committed to reducing injuries and violence among children and adolescents. The site offers an annotated list of fact sheets, booklets, and reports on injury and violence prevention and an archive of CSN's monthly electronic bulletins, each of which focuses on a specific injury prevention topic and an annotated list of CSN presentations, workshops, and associated materials. A free subscription service, SafetyLit, delivers weekly e-mail abstracts of injury prevention reports and articles.

The D.B. Foundation
P O Box 3942
St. Augustine, FL 32085- 3942
Website: http://www.thedbfoundation.com
The mission of this foundation is to spread awareness and education about a range of dangerous activities to which today's youth are exposed and that may be unfamiliar to parents and/or other concerned adults. These activities include: asphyxia activities; inhalant use, abuse of over-the-counter medication; and Internet exploitation through personal Web pages.

Emergency Medical Services for Children (EMSC) National Resource Center
111 Michigan Avenue NW
Washington, DC 20010-2970
Phone: 202-884-4927
Fax: 202-884-6845
E-mail: info@emscnrc.com
Website: http://www.ems-c.org
The EMSC National Resource Center is one of two national centers whose purpose is to provide assistance to the public, professional groups, and state grantees on issues of importance in developing and sustaining an EMSC system. Both centers are jointly administered by the Department of Health and Human Services' Health Resources and Services Administration, Maternal and Child Health Bureau, and the Department of Transportation's National Highway Traffic Safety Administration. EMSC works with school personnel to help prevent and prepare for school-based emergencies. A portion of the website (http://www.ems-c.org/school/frameschool.htm) is devoted to school-specific information.

> **Publication**: *Preventing Childhood Emergencies: A Guide to Developing Effective Injury Prevention Initiatives*.

Injury Control Resource Information Network
Website: http://www.injurycontrol.com/icrin/
This site, sponsored by the Center for Injury Research and Control (CIRCL) at the University of Pittsburgh, is a dynamic list of key online resources related to the field of injury research and control. Extremely comprehensive, it includes links to government agencies, databases, education, journals, conferences, newsgroups, and e-mail LISTSERVs on topics including poisonings, burns, firearms, violence, and head injury.

National Organizations for Youth Safety (NOYS)
Website: http://www.noys.org
This national youth health and safety coalition aims to promote youth empowerment and leadership and to build partnerships that save lives, prevent injuries, and enhance safe and healthy lifestyles among all youth.

Prevention Institute
265 29th Street
Oakland, CA 94611
Phone: 510-444-7738

Fax: 510-663-1280
E-mail: prevent@preventioninstitute.org
Website: http://www.preventioninstitute.org/contact.html
Prevention Institute works to create systemic, comprehensive strategies for addressing challenges in areas such as injury and violence prevention, traffic safety, health disparities, nutrition and physical activity, and youth development. It delivers presentations and training and provides consultation and technical assistance. With support from Children's Safety Network, Prevention Institute has also developed a set of school violence prevention fact sheets designed to support development of comprehensive school violence prevention efforts. These fact sheets are available at http://www.preventioninstitute.org/schoolviolence.html.

UNINTENTIONAL INJURY

Centers for Disease Control and Prevention (CDC)
National Center for Injury Prevention and Control (NCIPC)
Division of Unintentional Injury Prevention
4770 Buford Highway NE
Mail Stop K-63
Atlanta, GA 30341
Phone: 800-232-4636
Website: http://www.cdc.gov/ncipc/duip/duip.htm
NCIPC's Division of Unintentional Injury Prevention monitors trends in unintentional injuries in the U.S., conducts research to better understand risk factors, and evaluates interventions to prevent these injuries. Research and prevention programs focus on 2 categories of unintentional injury: motor-vehicle-related injuries and home- and recreation-related injuries. Fact sheets on unintentional injury, research updates, and other publications are available for download and/or order at the website.

Harborview Injury Prevention & Research Center
Kobe Park Building
325 Ninth Avenue
Seattle, WA 98104
Phone: 206-744-9430
Fax: 206-744-9962
E-mail: hiprc@u.washington.edu
Website: http://depts.washington.edu/hiprc
Harborview Injury Prevention & Research Center, 1 of 10 injury-control centers supported by CDC, is devoted to research, education, and prevention programs aimed at diminishing the personal impact of trauma and broadening the effectiveness of injury prevention and trauma treatment programs regionally and nationwide.

Injury Free Coalition for Kids
Website: http://www.injuryfree.org
Injury Free Coalition for Kids is a national program of the Robert Wood Johnson Foundation comprising hospital-based, community-oriented programs whose efforts are anchored in research, education, and advocacy. As of 2006, the coalition included 40 sites located in 37 cities, each housed in the trauma centers of participating institutions. In Massachusetts, IFC sites are located at Children's Hospital in Boston and UMass Memorial Children's Medical Center in Worcester.

National Safety Council
1121 Spring Lake Drive
Itasca, IL 60143-3201
Phone: 630-285-1121
Fax: 630-285-1315
E-mail: info@nsc.org
Website: http://www.nsc.org/index.htm
Founded in 1913 and chartered by the U.S. Congress in 1953, the National Safety Council educates and influences people to prevent accidental injury and death.

Safe Kids Worldwide
1301 Pennsylvania Avenue NW, Suite 1000
Washington, DC 20004
Phone: 202-662-0600
Fax: 202-393-2072
Website: http://www.safekids.org/
Safe Kids Worldwide (formerly the National SAFE KIDS Campaign) is a national nonprofit organization dedicated solely to the prevention of unintentional childhood injury — the number-one killer of children age 14 and under. The site offers research, safety tips, information about the various child safety programs the campaign supports, activities that help teach kids how to think and act safely, and materials to help educators incorporate injury prevention into class curricula. (See section on Massachusetts Agencies and Organizations section for information on local coalitions.)

Students Against Destructive Decisions (SADD) (formerly Students Against Drunk Driving)
255 Main Street
Marlborough, MA 01752
Phone: 877-SADD-INC
Fax: 508-481-5759
Website: http://www.saddonline.com/
Originally formed to help young people say no to drinking and driving, SADD has become a peer leadership organization with a mission dedicated to providing students with the best prevention and intervention tools possible to deal with preventing destructive decisions, particularly underage drinking, other drug use, impaired driving, teen violence, and teen depression and suicide.

VIOLENCE

Center for the 4th and 5th Rs (Respect and Responsibility)
SUNY Cortland School of Education
P.O. Box 2000
Cortland, NY 13045
Phone: 607-753-2455
Fax: 607-753-5980
Website: http://www.cortland.edu/character/index.asp
The Center serves as a regional, state, and national resource in character education. It promotes a comprehensive approach to character education and publishes the newsletter *The Fourth and Fifth Rs* in print and electronic versions.

Center for Research on High Risk Behaviors
A Center of Health and Human Development Programs
E-mail: info@hhd.org
Website: http://www.hhd.org/centersprojects/centers_crhrb.asp
Violence, substance use, unprotected sex, and related risky behaviors take a major toll on individual lives and the vibrancy of communities. The Center for Research on High Risk Behaviors at EDC works to better understand why people engage in risky behaviors and what can be done to reduce risk-taking and promote health. The center works with families, schools, community-based organizations, and health services through its offices in Massachusetts and New York.

Center for School Mental Health Analysis and Action (CSMHA)
University of Maryland
School of Medicine — Department of Psychiatry
737 W Lombard Street, 4th Floor
Baltimore, MD 21201
Phone: 888-706-0980 or 410-706-0980
Fax: 410-706-0984
E-mail: csmha@psych.umaryland.edu
Website: http://csmha.umaryland.edu/

CSMHA's mission is to strengthen policies and programs in school mental health to improve learning and promote success for America's youth. Current research includes a sexual assault victim needs assessment project and a sexual harassment/assault prevention project.

Center for the Study and Prevention of Violence
Institute of Behavioral Science
University of Colorado at Boulder
439 UCB
Boulder, CO 80309-0439
Phone: 303-492-8465
Fax: 303-443-3297
E-mail: safe@colorado.edu
Website: http://www.colorado.edu/cspv/safeschools
A statewide effort to help create safe schools and communities in Colorado. The initiative seeks to develop an understanding of youth violence in Colorado and promote effective solutions to address the challenges posed by youth violence.

Center for Violence and Injury Prevention
A Center of Health and Human Development Programs
E-mail: info@hhd.org
Website: http://www.hhd.org/centersprojects/centers_cvip.asp
The Center for Violence and Injury Prevention at EDC assesses the complex social and behavioral factors that underlie physical trauma — intentional or unintentional — and develops concrete prevention programs with schools, community-based organizations, criminal and juvenile justice systems, and health care and social service agencies. It also works to reduce the consequences of injury and violence when they do occur.

Character Education and Civic Engagement Technical Assistance Center (CETAC)
U.S. Department of Education
1300 S. Fourth Street, Suite 300
Louisville, KY 40208
Phone: 866-40-CETAC (23822)
E-mail: cetac@cetac.org
Website: http://www.cetac.org/
CETAC offers a variety of online resources to help educators select, implement, and evaluate character education and civic engagement efforts. CETAC also helps states and local school districts address the guiding principles of character education programs as outlined in No Child Left Behind legislation by providing training and technical assistance for grantees targeted to effective program development, implementation, and evaluation and by developing and disseminating publications and other resource materials about character education to state and local education agencies and to the public.

Children's Safety Network (CSN) National Injury and Violence Prevention Resource Center (NIVPRC)
Phone: 617-969-7100
Fax: 617-244-3436
Website: http://www.childrenssafetynetwork.org
CSN, located at Educational Development Center, Inc., is composed of several resource centers funded by the Maternal and Child Health Bureau (MCHB) of the U.S. Department of Health and Human Services. CSN provides technical assistance, training, and resources to MCHB and other injury-prevention professionals in an extensive effort to reduce the burden of injury and violence to our nation's children and adolescents. NIVPRC, the core CSN website, deals with all aspects of child and adolescent injury and violence prevention, coordinating with other websites as necessary to provide MCH and other professionals with complete and timely technical assistance.

Collaborative for Academic, Social and Emotional Learning (CASEL)
Department of Psychology (M/C 285)
University of Illinois at Chicago
1007 W. Harrison Street
Chicago, IL 60607-7137

Phone: 312-413-1008
Fax: 312-355-4480
E-mail: CASEL@uic.edu
Website: http://www.casel.org
Founded in 1994 by Daniel Goleman, author of *Emotional Intelligence*, and educator/philanthropist Eileen Rockefeller Growald, CASEL conducts scientific research and works to provide educators and practitioners of social and emotional learning (SEL) with the guidelines, tools, informational resources, and support they need to improve and expand their SEL programming.

Crimes Against Children Research Center (CCRC)
University of New Hampshire
20 College Road
#126 Horton Social Science Center
Durham, NH 03824
Phone: 603-862-1888
Fax: 603-862-1122
Website: http://www.unh.edu/ccrc/
CCRC combats crimes against children by providing the public, policymakers, law enforcement personnel, and other child welfare practitioners with high-quality research and statistics about the nature and impact of crimes such as child abduction, homicide, rape, assault, and physical and sexual abuse.

Hamilton Fish Institute
2121 K Street NW, Suite 200
Washington, DC 20037
Phone: 202-496-2200
Fax: 202-496-6244
Website: http://www.hamfish.org/about/
The Hamilton Fish Institute on School and Community Violence is a national resource for the research and development of school violence prevention strategies. A not-for-profit, nonpartisan organization, the Institute operates as an interdisciplinary research partnership whose key staff have expertise in adolescent violence, criminology, law enforcement, substance abuse, juvenile justice, gangs, public health, education, behavior disorders, social skills development, and prevention programs.

Institute on Violence and Destructive Behavior (IVDB)
Phone: 541-346-3591
Website: http://darkwing.uoregon.edu/~ivdb/index.html
IVDB studies the conditions, developmental processes, and risk-protective factors related to the prevention of violence, school failure, delinquency, and other destructive outcomes among at-risk children and adolescents. Additional activities include program evaluation, outreach, training, and technical support.

Keys to Safer Schools.com
P.O. Box 296
Bryant, AR 72089-0296
Phone: 501-847-2596, 800-504-7355 or 877-978-7678
E-mail: Keys@keystosaferschools.com
Website: http://www.keystosaferschools.com
This not-for-profit organization supplies professional training and materials to schools, youth organizations and law enforcement agencies across the United States and beyond.

Publication: *Safety Bulletin,* a monthly email newsletter, which may be viewed on the site.

National Alliance for Safe Schools (NASS)
Ice Mountain
P.O. Box 290
Slanesville, WV 25444-0290
Phone: 888-510-6500 or 304-496-8100
Fax: 304-496-8105
E-mail: NASS@raven-villages.net

Website: http://www.safeschools.org
NASS offers a variety of services that include training, school security assessments, and technical assistance. NASS has worked with individual schools, school districts, state educational organizations, and parents groups across the country. Reasonable phone or e-mail requests for information or advice are answered free of charge.

National Center for School Engagement
Colorado Foundation for Families and Children
303 East 17th Avenue, Suite 400
Denver, CO 80203
Phone: 303-837-8466
E-mail: info@schoolengagement.org
Website: http://www.truancyprevention.org
The National Center for School Engagement was established based on more than a decade of educational research conducted by the Colorado Foundation for Families and Children. NCSE provides trainings, technical assistance, research, and evaluation to school districts, law enforcement agencies, courts, and state and federal agencies. Its site offers many resources in the areas of school attendance, attachment, and achievement.

National Clearinghouse for Educational Facilities (NCEF)
National Institute of Building Sciences
1090 Vermont Avenue NW, Suite 700
Washington, DC 20005
Phone: 202-289-7800
Website: http://www.edfacilities.org
Created in 1997 by the U.S. Department of Education, NCEF is a free public service that provides information on planning, designing, funding, building, improving, and maintaining schools. NCEF is funded by a grant from the U.S. Department of Education with oversight by the Office of Safe and Drug-Free Schools.

National Crime Prevention Council — Be Safe and Sound Campaign
Phone: 202-261-4160
E-mail: besafe@ncpc.org
Website: http://www.ncpc.org/besafe
Be Safe and Sound is a public education and awareness campaign that seeks to raise awareness of school safety and security issues and to suggest concrete measures that parents, community members, and educators can take to make schools safer and more secure. Resources include:

- **School Safety and Security Toolkit: A Guide for Parents, Schools, and Communities** provides guidelines and tools for forming a comprehensive campaign to identify and address school safety and security issues on the local level.
- **Caregivers' Guide to School Safety and Security** outlines 4 specific actions parents and caregivers can take to improve school safety and security, and provides tools for getting started.
- **Tip sheets on stopping school violence** provide ideas for a variety of audiences, including parents, students, teachers, law enforcement, and principals.
- **School Safety and Security Newsletter,** for professionals and parents concerned about school safety and security, includes best practices, new research findings, and topical articles.
- A **resource database** contains resources on school safety, security, and violence prevention.

National Education Association — Health Information Network
School and Community Safety Site
1201 16th Street NW, Suite 521
Washington, DC 20036
Phone: 800-718-8387 or 202-822-7570
E-mail: info@neahin.org
Website: http://neahin.org/programs/schoolsafety
School and Community Safety Site, designed to help teachers, education support professionals, and parents keep schools and communities safe, provides information on topics such as gun safety and crisis

management and makes available teaching resources, including the NEA's 9-part Safe Schools video program.

National School Safety Center (NSSC)
141 Duesenberg Drive, Suite 11
Westlake Village, CA 91362
Phone: 805-373-9977
Fax: 805-373-9277
E-mail: info@nssc1.org
Website: http://www.nssc1.org
NSSC, established in 1984 by presidential directive, identifies and promotes strategies, promising practices, and programs that support safe schools for all students as part of the total academic mission. It also provides school communities and their school safety partners with quality information, resources, consultation, and training services.

Publications: *School Safety News Journal*, published 3 times a year, and 6 *School Safety Updates* cover issues related to school safety, including background information, research, and model programs and prevention strategies related to violence prevention, crisis management, gangs, attendance, discipline, schoolyard bullying, high-risk youth, and other concerns vital to the safety of all schoolchildren.

Videos:

- *School Crisis: Under Control* combines news footage of school crisis events with recommendations from school officials who have dealt firsthand with violent tragedies on their campuses.
- *High Risk Youth/At the Crossroads* focuses on specific negative social, economic, and behavioral problems that make youth more vulnerable to drug abuse.
- *Set Straight on Bullies* is designed to help school administrators educate faculty, parents, and students about the severity of the schoolyard bullying problem.
- *What's Wrong With This Picture?* addresses school drug trafficking and abuse, intimidation and violence, teacher burnout, and theft.

National Sexual Violence Resource Center (NSVRC)
123 North Enola Drive
Enola, PA 17025
Phone: 877-739-3895 or 717-909-0710
Fax: 717-909-0714
TTY: 717-909-0715
Website: http://www.nsvrc.org/
NSVRC is a comprehensive collection and distribution center for information, statistics, and resources related to sexual violence. It serves as a resource for state, territory, and tribal anti-sexual-assault coalitions, rape crisis centers, allied organizations, community projects, policymakers, government entities, media, educators, health care providers, and others working to address and eliminate sexual assault. NSVRC produces and distributes booklets, newsletters, and other documents.

Publications include:

- *A National Resource Directory & Handbook Preventing Child Sexual Abuse* brings together many of the currently available resources and initiatives related to child sexual abuse prevention, providing descriptions of organizations, programs, projects, and a wide range of resources.
- *Spanish Language Materials* is a national guide to resources available in Spanish.
- *Directory of Projects Working to End Sexual Violence* (2002) represents an initial attempt to highlight the many national organizations and projects working to eliminate sexual violence.

National Training and Technical Assistance Center
for Drug Prevention and School Safety Program Coordinators
Phone: 202-403-5265
Website: http://www.k12coordinator.org
Operated by the American Institutes for Research, Education Development Center, Inc., the Collaborative for Academic, Social, and Emotional Learning, and the National Association of School Psychologists, this national center provides coordinators with training and ongoing support. At the Center's website,

coordinators can access valuable news and constantly expanding resources on drug prevention and school safety.

Partnerships Against Violence Network
Website: http://www.pavnet.org
Partnerships Against Violence Network is a "virtual library" of information about violence and youth-at-risk, representing data from 7 different federal agencies.

Prevention Pathways Online Courses
Center for Substance Abuse Prevention (CSAP)
Federal Substance Abuse and Mental Health Services Administration (SAMHSA)
Website: http://pathwayscourses.samhsa.gov/
The SAMHSA site offers prevention courses free to the public. Some courses are meant for professionals and offer continuing education credits; others provide helpful information to members of the general public interested in prevention topics. Course offerings include:

- Environmental Strategies for Prevention**:** A Guide To Helping the Prevention Professional Work Effectively in the Community (for professionals)
- Silence Hurts: Alcohol Abuse and Violence Against Women (for professionals)
- It Won't Happen to Me: Alcohol Abuse and Violence Against Women (for general public)

Technical Assistance Center on Positive Behavioral Interventions and Supports
Behavioral Research and Training
1235 University of Oregon
Eugene, OR 97403-5262
Phone: 541-346-2505
Fax: 541-346-5517
E-mail: pbis@oregon.uoregon.edu
Website: http://www.pbis.org
The Technical Assistance Center on Positive Behavioral Interventions and Supports was established by the Office of Special Education Programs, U.S. Department of Education to give schools capacity-building information and technical assistance for identifying, adapting, and sustaining effective schoolwide disciplinary practices that emphasize positive behavioral interventions.

U.S. Department of Education — Office for Civil Rights
Customer Service Team
550 12th Street SW
Washington, DC 20202-1100
Phone: 800-421-3481
Fax: 202-245-6840
TTY: 877-521-2172
E-mail: OCR@ed.gov
Website: http://www.ed.gov/ocr

Boston Office
Office for Civil Rights
U.S. Department of Education
33 Arch Street, Suite 900
Boston, MA 02110-1491
Phone: 617-289-0111
Fax: 617-223-0150
TTY: 877-521-2172
E-mail: OCR.Boston@ed.gov

U.S. Department of Education
Office of Elementary and Secondary Education Safe and Drug-Free Schools Program
600 Independence Avenue SW
Washington, DC 20202-6123

Phone: 202-260-3954
TTY: 800-877-8339
E-mail: SAFESCHL@ed.gov

U.S. Department of Justice
Office of Justice Programs
810 Seventh Street NW
Washington, DC 20531
Website: http://www.ojp.usdoj.gov/nij

Safe and Responsive Schools Project
Indiana Education Policy Center
174 Smith Research Center
2805 East 10th Street
Bloomington, IN 47408
Phone: 812-855-6888
Fax: 812-855-0420
Website: http://www.indiana.edu/~safeschl
The Safe and Responsive Schools Project, a model demonstration and technical assistance project funded by the U.S. Department of Education, is dedicated to enabling schools and school districts to develop a broader perspective on school safety and violence prevention, stressing comprehensive planning, prevention, and parent/community involvement.

RESOURCES: SPECIFIC ISSUES RELATED TO UNINTENTIONAL INJURY

Fire Safety

Burn Prevention Foundation
236 North 17th Street
Allentown, PA 18104
Phone: 610-969-3930
E-mail: info@burnprevention.org
Website: http://www.burnprevention.org
The mission of the Burn Prevention Foundation is to provide burn injury prevention education to and advocacy for those at greatest risk. Although its primary service area is in Eastern Pennsylvania, many of its programs and products are utilized worldwide. (See also Unintentional Injury: Curricula/Teaching Tools.)

Department of Fire Services
P.O. Box 1025, State Road
Stow, MA 01775
Phone: 978-567-3100
Website: http://www.mass.gov/dfs/index.shtm

FireSafety.gov
Website: http://www.firesafety.gov
FireSafety.gov is a one-stop information resource for government-distributed residential fire safety and prevention information. It provides listings of and links to residential fire safety resources contained on other federal websites, primarily CDC/Injury Center, Consumer Product Safety Commission, and U.S. Fire Administration. (See Resources: Curricula/Teaching Tools and Registries of Effective Programs for detailed information about the U.S. Fire Administration's USFA Kids website.)

Playground Safety

National Program for Playground Safety (NPPS)
School of HPELS, WRC 205
University of Northern Iowa
Cedar Falls, IA 50614-0618
Phone: 800-554-PLAY
Fax: 319-273-7308
E-mail: playground-safety@uni.edu
Website: http://www.uni.edu/playground/home.htm
NPPS serves as a national resource for the latest educational and research information on playground safety. Established by the University of Northern Iowa in 1995, with funding from CDC, NPPS has become the premier nonprofit organization in the U.S. dealing with playground safety information.

Safe Kids Worldwide
1301 Pennsylvania Avenue NW, Suite 1000
Washington, DC 20004
Phone: 202-662-0600
Fax: 202-393-2072
Website: http://www.safekids.org

U.S. Consumer Product Safety Commission (CPSC)
4330 East West Highway
Bethesda, MD 20814
Phone: 301-504-7923
Fax: 301-504-0025
E-mail: info@cpsc.gov
Website: http://www.cpsc.gov/
CPSC is charged with protecting the public from unreasonable risks of serious injury or death from more than 15,000 types of consumer products, including playground equipment. The CPSC publication *Handbook for Public Playground Safety* may be obtained at http://www.cpsc.gov/CPSCPUB/PUBS/325.pdf.

Sports Safety

American Association of Cheerleading Coaches and Administrators (AACCA)
6745 Lenox Center Court, Suite 318
Memphis, TN 38115
Phone: 800-533-6583
Website: http://www.aacca.org
AACCA, a nonprofit national educational association for cheerleading coaches, has developed safety guidelines for high school cheerleading (available on the website), as well as a Spirit Safety Certification Program designed to educate cheerleading and dance coaches in all aspects of spirit safety and risk management.

Massachusetts Interscholastic Athletic Agency (MIAA)
33 Forge Parkway
Franklin, MA 02038
Phone: 508-541-7997
Fax: 508-541-9888
E-mail: miaa@miaa.net
Website: http://www.miaa.net
MIAA is an organization of 360 high schools that sponsor athletic activities in 33 sports.

Massachusetts Medical Society (MMS)
Committee on Student Health and Sports Medicine

860 Winter Street
Waltham Woods Corporate Center
Waltham, MA 02451
Phone: 781-893-4610 or 781-893-3800
E-mail: info@massmed.org
Website: http://www.massmed.org
MMS and its Committee on Student Health and Sports Medicine educate physicians, other health care providers, parents, coaches, and others about prevention of sports injuries.

Publications:

- *Head's Up — Don't Duck* provides information for players, coaches, parents, and others on preventing spinal cord injuries in hockey.
- *Concussion: A Coaches' Guide for Sideline Evaluation* is a coaches' guide for on-the-field assessment of head injuries.

National Center for Injury Prevention and Control (NCIPC)
CDC-INFO Contact Center
Phone: 800-232-4636
E-mail: cdcinfo@cdc.gov
Website: http://www.cdc.gov/ncipc/
NCIPC, CDC's injury center, offers *Heads Up: Concussion in High School Sports,* a free, downloadable tool kit for coaches that contains practical, easy-to-use information including a video and DVD featuring a young athlete disabled by concussion, a guide, a wallet card and clipboard sticker for coaches, posters, fact sheets for parents and athletes in English and Spanish, and a CD-ROM with downloadable kit materials and additional concussion-related resources.

National Youth Sports Safety Foundation (NYSSF)
1 Beacon Street, Suite 3333
Boston, MA 02108
Phone: 617-367-6677
Fax: 617-722-9999
Website: http://www.nyssf.org
NYSSF is a national nonprofit, educational organization dedicated to reducing the number and severity of injuries youth sustain in sports and fitness activities.

Traffic-Related Safety (Bike Safety, Helmets, Seat Belts, Child Seats, Pedestrian Safety, Alcohol and Driving, etc.)

Bicycle Helmet Safety Institute (BHSI)
4611 Seventh Street South
Arlington, VA 22204-1419
Phone: 703-486-0100
E-mail: info@helmets.org
Websites: http://www.helmets.org and http://www.bhsi.org
BHSI is a small, active nonprofit that serves as a consumer advocacy program and a technical resource for bicycle helmet information. Its volunteers serve on the ASTM bicycle helmet standard committee and are active in commenting on standards of the Consumer Product Safety Commission. BHSI offers many informational resources on its websites, provides an e-mail newsletter, and sends out many copies of its Toolkit for Helmet Promotion Programs to anyone who is organizing a helmet effort.

Federal Highway Administration (FHA)
Bicycle Safety Education Resource Center
Website: http://safety.fhwa.dot.gov/ped_bike/bike/bike_know.htm
The FHA's Bicycle Safety Education Resource Center provides bicycle safety education information for preschool (under age 5), beginner (ages 5–8), young (ages 9–12), teenage (13+), and adults teaching children. It offers a searchable database of training materials, a database guide that identifies the training needs of different audiences, and a good-practices guide to assist program developers.

Kids in Cars
918 Glenn Avenue
Washington, MO 63090
Phone: 636-390-8268
Fax: 636-390-9412
E-mail: ContactUs@kidsincars.org
Website: http://www.kidsincars.org/index.html
Kids in Cars is devoted to informing the public about the dangers associated with leaving children unattended in or around vehicles.

Massachusetts Governor's Highway Safety Bureau
Pedestrian and Bicycle Safety Program
10 Park Plaza, Suite 3720
Boston, MA 02116
Phone: 617-725-3301
Website: http://www.mass.gov/ghsb

National Highway Traffic Safety Administration (NHTSA)
400 Seventh Street SW
Washington, DC 20590
Phone: 888-327-4236
TTY: 800-424-9153
Website: http://www.nhtsa.dot.gov
NHTSA's Bicycle Safety program offers fact sheets, brochures, resource guides, and activities and materials for kids.

Pedestrian and Bicycle Information Center (PBIC)
730 Airport Road, Suite 300
Campus Box 3430
Chapel Hill, NC 27599-3430
Phone: 919-962-2203
Fax: 919-962-8710
E-mail: pbic@pedbikeinfo.org
Website: http://www.bicyclinginfo.org/
PBIC is a clearinghouse for information about health and safety, engineering, advocacy, education, enforcement and access, and mobility. It is also the developer of the Safe Routes to School (SR2S) National Training Course**,** designed to assist communities across the country that are looking for ways to make walking and bicycling safe and appealing ways for children to get to school.

Publication: *Bikeability Checklist* is a tool for evaluating the bike safety of neighborhoods or routes.

Safe Kids Worldwide
1301 Pennsylvania Avenue NW, Suite 1000
Washington, DC 20004-1707
Phone: 202-662-0600
Fax: 202-393-2072
Website: http://www.safekids.org
Safe Kids Worldwide works to prevent accidental childhood injury and provides materials, training, and information to families. Massachusetts chapters are based in Boston (Greater Boston Safe Kids, 617-534-2633) and Springfield (Western Massachusetts Safe Kids, 413-794-5434). These chapters offer discounted helmets, educational bicycle fairs, and materials.

Traffic Safety Center (TSC)
University of California, Berkeley
140 Warren Hall #7360
Berkeley, CA 94720-7360
Phone: 510-642-0566

Fax: 510-643-9922
E-mail: tscenter@berkeley.edu
Website: http://www.tsc.berkeley.edu/html/research.html
TSC is a multidisciplinary venture led by the Institute of Transportation Studies and the School of Public Health at the University of California, Berkeley. Its mission is to reduce traffic fatalities and injuries through multidisciplinary collaboration in education, research, and outreach. TSC offers courses, seminars, and workshops, conducts research and evaluation, and disseminates information.

Traumatic Injury

Center for Neuroskills TBI (Traumatic Brain Injury) Resource Guide
Website: http://www.neuroskills.com/index.shtml
The TBI Resource Guide is the central online source of information, services, and products relating to traumatic brain injury, brain injury recovery, and post-acute rehabilitation.

May Institute
41 Pacella Park Drive
Randolph, MA 02368
Phone: 781-440-0400 or 800-778-7601
TTY: 781-440-0461
E-mail: info@mayinstitute.org
Website: http://www.mayinstitute.org
The May Institute provides comprehensive, research-validated services on childhood brain injury. The May Center for Education and Neurorehabilitation provides specialized educational services to children, adolescents, and young adults (aged 5–22) with acquired brain injury. For public schools looking to enhance services within their own district's programs, the Center offers onsite consultation and training for special educational professionals. **Publication:** *Sports Concussion Fact Sheet*

National Resource Center for Traumatic Brain Injury
Website: http://www.neuro.pmr.vcu.edu/
The National Resource Center for Traumatic Brain Injury provides relevant, practical information for professionals, persons with brain injury, and family members.

National Spinal Cord Injury Association
New England Rehabilitation Hospital
2 Rehabilitation Way
Woburn, MA 01801
Phone: 800-962-9629
Website: http://www.spinalcord.org

Workplace Safety

Federal Network for Young Worker Safety and Health (FedNet)
Website: http://www.cdc.gov/niosh/fednet/
FedNet, a federal coalition formed in 2004 to prevent occupational injuries and illness among young workers, works to identify and evaluate existing tools and resources on health and safety and helps disseminate materials. Thirty organizations from the following 9 federal agencies currently participate: U.S. Department of Labor, National Institute for Occupational Safety and Health, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, U.S. Department of Education, U.S. Department of Health and Human Services, U.S. Department of the Interior, U.S. Department of Transportation, and U.S. Environmental Protection Agency.

Massachusetts Coalition for Occupational Safety and Health (MassCOSH)
42 Charles Street
Dorchester, MA 02122
Phone: 617-825-7233
Fax: 617-929-0434

E-mail: info@masscosh.org
Website: http://www.masscosh.org/
MassCOSH is a nonprofit organization dealing with workers' health, safety, and rights.

Massachusetts Department of Public Health (DPH)
Occupational Health Surveillance Program
250 Washington Street, 6th Floor
Boston, MA 02108
Phone: 617-624-5632
E-mail: Teensatwork@state.ma.us
Website: http://www.state.ma.us/dph/bhsre/ohsp/ohsp.htm
DPH's Occupational Health Surveillance Program promotes the health, safety, and quality of life of working people in Massachusetts. It offers information about work-related injuries to youth from DPH's Teens at Work: Injury Surveillance and Prevention Project, as well as educational materials about Massachusetts health, safety, and child labor laws for teens, employers, and parents.
Available materials include:

- *Are You a Working Teen?* (2002), a pamphlet for teens containing child labor laws and related information
- *Under 18 and Hurt on the Job? Information on Workers' Compensation* (2002), a pamphlet for teens on workers' compensation
- *Massachusetts Employers' Guide: Young Worker Health & Safety and the Child Labor Laws* (2003), containing recommendations for employers and a poster of the child labor laws
- *Protecting Your Working Teen: A Guide for Parents* (2002), a single-sheet version of a former pamphlet containing child labor laws and related information, available in English and Portuguese
- *Protecting Working Teens: A Guide for Health Care Providers* (2003), a pamphlet for health care providers with information about child labor laws and what to tell teens regarding work
- *First Aid for Burns* (2004), a poster on first aid for heat burns in restaurants, available in English, Spanish, and Portuguese

Massachusetts Division of Occupational Safety
Phone: 617-727-3465
Website: http://www.state.ma.us/dos/youth
Schools can call DOS to ask questions about work permits and educational certificates.

Massachusetts Office of the Attorney General
Phone: 617-727-2200
Website: http://www.ago.state.ma.us/sp.cfm?pageid=964
The Office of the Attorney General enforces state child labor laws.

National Institute for Occupational Safety and Health (NIOSH)
Website: http://www.cdc.gov/niosh/topics/youth/
NIOSH, part of CDC, is responsible for preventing worker-related injuries and illnesses. The NIOSH website includes information about work-related injuries to youth nationally, ordering information for publications about and for teen workers, stories about young workers, and a searchable bibliography of occupational health and safety publications.

U.S. Department of Labor, Occupational Safety and Health Administration (OSHA)
Phone: 617-565-8110 (Methuen office), 617-565-6924 (Braintree office), 413-785-0123 (Springfield office)
Website: http://www.osha.gov/SLTC/teenworkers/index.html
OSHA is the federal agency that regulates and enforces health and safety in the workplace. OSHA's website includes information for teen workers, educators, parents, and employers about workplace health and safety for youth.

U.S. Department of Labor, Wage and Hour Division
Phone: 617-624-6700
Website: http://www.youthrules.dol.gov/

Wage and Hour is the federal agency responsible for enforcing federal child labor laws. The YouthRules website includes information for parents, employers, and working youth about federal and state child labor laws.

Young Workers Safety Resource Center (YWSRC)
University of California at Berkeley
2223 Fulton Street, 4th Floor
Phone: 510-622-3959
Website: http://socrates.berkeley.edu/~safejobs/nation/index.html#contactinfo
YWSRC, a collaborative project of ECC and U.C. Berkeley's Labor Occupational Health Program, provides training, technical assistance, and resource materials to state and community groups throughout the country. In addition to state departments of labor, education, and health, YWSRC serves school- and community-based job readiness and training programs including school-to-career programs and transition-to-work programs for youth with disabilities.
Resources:

- *Safe Work/Safe Workers* and *Work Safe!:* These curricula for 3-hour workshops offer basic job health and safety information for high school students, including youth with developmental and learning disabilities. Both curricula cover how to recognize and reduce hazards in the workplace, employees' rights and responsibilities, and how to speak up about workplace concerns in an effective manner. A state-specific version is available for Massachusetts.
- *Protecting Working Teens: A Public Health Resource Guide:* Aimed at public health professionals, this guide provides an overview of the problem and resources for prevention.
- *Why Is Job Health and Safety Training Important for Teens?* (PowerPoint presentation)
- *Resource list* of curricula, fact sheets, and reports
- *Sample materials* including brochures, posters, curricula, and other educational materials developed by state and community groups around the country

RESOURCES: SPECIFIC ISSUES RELATED TO VIOLENCE

Bullying

15+ About Bullying
U.S. Department of Health and Human Services
Substance Abuse and Mental Health Services Administration, Center for Mental Health Services
P.O. Box 42557
Washington, DC 20015
Phone: 800-789-2647
TDD: 866-889-2647
Fax: 240-747-5470
Website: http://www.mentalhealth.samhsa.gov/
Part of SAMHSA's "Make Time to Listen — Take Time to Talk" Initiative, *About Bullying* provides parents and caregivers with information about bullying and methods for communicating with children about the climate of fear created by bullying. The messages exchanged between children and their caregivers in just 15 minutes or more a day can be instrumental in building a healthier and safer environment for children. Publications available as part of this initiative include:

- *Take Action Against Bullying,* a guide providing an overview of bullying behaviors, their effects, and some preventive measures.
- *15+ Make Time to Listen — Take Time to Talk… About Bullying,* a document consisting of interactive questions designed to start conversations between parents/caregivers and children. Schools, adults, and children can use these questions to start conversations about bullying and how to prevent it.
- *Bullying Is Not a Fact of Life,* a booklet containing information for caregivers who are concerned that a child might be being bullied or be bullying other children. It describes the steps that parents and schools can take, together, to help prevent bullying.

All are obtainable at http://mentalhealth.samhsa.gov/allpubs.

Bullying.org
Website: http://www.bullying.org
Started by a Canadian father and teacher, assisted by students, this site has grown into an international collaborative project.

Bullying Online
Website: http://www.bullying.co.uk/
This U.K. site offers helpful information for students, schools, and parents.

Center for the Study and Prevention of Violence
Institute of Behavioral Science
University of Colorado at Boulder
439 UCB
Boulder, CO 80309-0439
Phone: 303-492-8465
Fax: 303-443-3297
Website: http://www.colorado.edu/cspv/index.html
Offering a wealth of resources on bullying and prevention, this website also features the work of Dr. Dan Olweus, a Norwegian researcher at the forefront of bullying prevention research. (See Resources: Curricula and Registries of Effective Programs for information about the Olweus antibullying curriculum.)

Cyberbullying
Website: http://www.cyberbullying.com
This website provides background information on electronic bullying, as well as practical advice on how to prevent or deal with it.

National Center for Mental Health Promotion and Youth Violence Prevention
Education Development Center, Inc.
55 Chapel Street
Newton, MA 02458-1060
Phone: 866-308-4332
Fax: 617-969-5951
Website: http://www.promoteprevent.org

National Mental Health Association
2000 N. Beauregard Street, 6th Floor
Alexandria, VA 22311
Phone: 800-969-NMHA (6642)
Fax: 703-684-5968
TTY: 800-433-5959
E-mail: infoctr@nmha.org
Website: http://www.nmha.org/whatdoesgaymean/
The National Mental Health Association offers an antibullying program, “What Does Gay Mean?”, designed to improve understanding and respect for youth who are gay/lesbian/bisexual/transgender (GLBT). Centered on an educational booklet, *What Does Gay Mean? How to Talk with Kids About Sexual Orientation and Prejudice,* the program encourages parents and others to communicate and share values of respect with children.

National Youth Violence Prevention Resource Center (NYVPRC)
P.O. Box 10809
Rockville, MD 20849
Phone: 866-723-3968
Fax: 301-562-1001
TTY: 800-243-7012
Website: http://www.safeyouth.org

NYVPRC offers a number of FAQ documents on bullying, as well as guides and links to research and resources. The toll-free hotline provides information on youth violence and referrals to prevention and intervention services.

Prevention Pathways Online Courses
Center for Substance Abuse Prevention (CSAP)
Federal Substance Abuse and Mental Health Services Administration
Website: http://pathwayscourses.samhsa.gov/courses.htm#bully
Prevention Pathways offers online prevention courses at no cost to the public. One course, *The ABCs of Bullying: Addressing, Blocking, and Curbing School Aggression,* examines the causes and effects of bullying, prevention techniques and programs, screening and treatment options, and legal/ethical issues. Although designed as a professional course offering continuing education credits, the course is relevant for educators, health and mental health practitioners, parents, and anyone else who works with children.

Stop Bullying Now
409 North Wayne Road
Wayne, ME 04284
E-mail: Stan@stopbullyingnow.com
Website: http://stopbullyingnow.com
Operated by Stan Davis, author of the 2004 book *Schools Where Everyone Belongs: Practical Strategies to Reduce Bullying,* Stop Bullying Now presents practical, research-based strategies to reduce bullying in schools.

Take a Stand. Lend a Hand. Stop Bullying Now!
U.S. Health Resources and Services Administration (HRSA)
Website: http://www.stopbullyingnow.hrsa.gov
Supported by the U.S. Department of Health and Human Services, the Health Resources and Services Administration, and the Maternal and Child Health Bureau, and created by a youth expert panel composed of kids aged 9–13 to reflect the "real life" impact of bullying in middle school and beyond, this website provides information, resources, cartoons, and games for children who bully, who have been bullied, or who want to learn how to prevent bullying. It also offers materials for parents, school administrators, teachers, health professionals, law enforcement officers, and other adults playing a role in bullying prevention.

Wellesley Center for Research on Women (WCW)
(See Resources: Massachusetts Agencies and Organizations.)

Child Abuse and Neglect and Child Sexual Abuse

Administration for Children and Families (ACF)
370 L'Enfant Promenade SW
Washington, DC 20201
Website: http://www.acf.hhs.gov/programs/cb/
The Children's Bureau, the oldest federal agency for children and families, is one of six bureaus within the Administration on Children, Youth and Families, Administration for Children and Families, of the Department of Health and Human Services. The Bureau is responsible for assisting states in the delivery of child welfare services designed to protect children and strengthen families.

American Professional Society on the Abuse of Children (APSAC)
Daphne Wright & Associates Management Group
P.O. Box 30669
Charleston, SC 29417
Phone: 877-402-7722
Website: http://www.apsac.org
APSAC addresses all facets of the professional response to child maltreatment: prevention, assessment, intervention, and treatment. Its membership reflects all of the major disciplines that respond to child maltreatment, including mental health, medicine, child protective services, and law enforcement. APSAC

publications and training cover all aspects of child maltreatment, including emotional and other types of neglect and physical and sexual abuse.

Child Abuse Prevention Network
Website: http://child-abuse.com/capn.shtml
The Child Abuse Prevention Network, originally launched as an outreach effort of the Family Life Development Center at Cornell University and sponsored by LifeNET, Inc., provides professionals with online tools and support for the identification, investigation, treatment, adjudication, and prevention of child abuse and neglect.

Childhelp USA
15757 North 78th Street
Scottsdale, AZ 85260
Phone: 480-922-8212
Fax: 480-922-7061
Website: http://www.childhelpusa.org
Childhelp USA is dedicated to meeting the physical, emotional, educational, and spiritual needs of abused and neglected children by focusing its efforts and resources in the areas of treatment, prevention, and research. Its services include the operation of the Childhelp USA National Child Abuse Hotline (800-4-A-CHILD).

Cognitive Behavioral Therapy for Child Sexual Abuse (CBT-CSA)
Center for Children Support
University of Medicine and Dentistry of NJ
School of Osteopathic Medicine
42 Laurel Road East, Suite 1100B
Stratford, NJ 08084
Phone: 856-566-7036
Fax: 856-655-6108
CBT-CSA is a treatment approach designed to help children and adolescents who have suffered sexual abuse overcome posttraumatic stress disorder (PTSD), depression, and other behavioral and emotional difficulties. **Recognition:** *Model Program,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

Crimes Against Children Research Center (CCRC)
University of New Hampshire
20 College Road
No. 126 Horton Social Science Center
Durham, NH 03824
Phone: 603-862-1888
Fax: 603-862-1122
Website: http://www.unh.edu/ccrc/
CCRC fights crimes against children by providing research and statistics to the public, policymakers, law enforcement personnel, and other child welfare practitioners. CCRC is concerned with research about the nature and impact of crimes such as child abduction, homicide, rape, assault, and physical and sexual abuse.

Darkness to Light
7 Radcliffe Street, Suite 200
Charleston, SC 29403
Helpline: 866-367-5444
Fax: 843-965-5449
Website: http://www.darkness2light.org
Darkness to Light is a primary prevention program whose mission is to engage adults in the prevention of child sexual abuse, to reduce the incidence of child sexual abuse nationally through education and public awareness aimed at adults, and to provide adults with information to recognize and react responsibly to child sexual abuse.

Family Life Development Center (FLDC)
Cornell University
Martha Van Rensselaer Hall
Ithaca, NY 14853-4401
Phone: 607-255-7794
Fax: 607-255-8562
Website: http://www.human.cornell.edu/che/fldc/index.cfm
The FLDC seeks to "improve professional and public efforts to understand and act upon risk and protective factors in the lives of children, youth, families, and communities." The center operates the National Data Archive on Child Abuse and Neglect (NDACAN), which promotes scholarly exchange among researchers and makes original data available for secondary analysis.

Family Violence Prevention Fund
383 Rhode Island Street, Suite 304
San Francisco, CA 94103-5133
Phone: 415-252-8900
Fax: 415-252-8991
TTY: 800-595-4889
Website: http://endabuse.org
The Family Violence Prevention Fund has a Boston office, which is located at: 67 Newbury Street, Mezzanine Level, Boston, MA 02116

Family Violence Sexual Assault Institute (FVSAI)
6160 Cornerstone Court East
San Diego, CA 92121
Phone: 858-623-2777 x416
Fax: 858-646-0761
Website: http://www.fvsai.org
FVSAI is a resource center that maintains a clearinghouse of references and unpublished papers concerning all aspects of family violence and sexual assault.

FRIENDS National Resource Center for Community-Based Child Abuse Prevention
Chapel Hill Training Outreach Project
800 Eastowne Drive, Suite 105
Chapel Hill, NC 27514
Phone: 919-768-0162
Fax: 919-620-8449
Website: http://www.friendsnrc.org
FRIENDS National Resource Center for Community-Based Child Abuse Prevention (CBCAP) is a service of the U.S. Department of Health and Human Services, Administration for Children, Youth and Families, Children's Bureau. CBCAP programs, established by Title II of the Child Abuse Prevention and Treatment Act Amendments of 1996, support community-based, prevention-focused family resource and support programs to strengthen families and reduce the likelihood of child abuse and neglect.

Massachusetts Association for the Treatment of Sexual Abusers (MATSA/ATSA)
115 Mill Street
Belmont, MA 02478
Phone: 617-855-3191
Website: http://www.matsa.org
MATSA is a local chapter of the Association for the Treatment of Sexual Abusers (ATSA), an international organization committed to the prevention of sexual assault through effective management of sex offenders. MATSA currently has over 50 members in Massachusetts and surrounding states.

Massachusetts Children's Alliance (MACA)
Mass Office of Victim Assistance
1 Ashburton Place, Suite 1101

Boston, MA 02108
Phone: 617-727-7775
Fax: 617-727-6552
Website: http://www.machildrensalliance.org
MACA is a chapter of the National Children's Alliance, the national organization that accredits and monitors advocacy centers dealing with child abuse. It is a networking and training organization created to support communities seeking to establish and improve children's advocacy center (CAC) programs and multidisciplinary team programs throughout Massachusetts and Rhode Island. Composed of 12 programs of different models and at various stages of development, this group has been meeting informally since 1995 to improve response to child abuse across the region. MACA maintains updated contact information for all Massachusetts CACs.

Massachusetts Child Sexual Abuse Prevention Partnership (MCSAPP)
c/o Massachusetts Citizens for Children
14 Beacon Street, Suite 706
Boston, MA 02108
Phone: 617-742-8555
Fax: 617-742-7808
Website: http://www.enoughabuse.org
MCSAPP is a public-private collaborative whose mission is to prevent child sexual abuse by engaging adults and communities in effective perpetration prevention efforts at the local and state levels. Members include organizations with statewide reach and experience in child abuse prevention, sexual violence prevention, sex offender management, child protection, public health, victim advocacy and services, and research and evaluation. In 2003, MCSAPP conducted a preliminary inventory of child sexual abuse prevention programs in Massachusetts, which is available upon request. MCSAPP is a project of Massachusetts Citizens for Children (MCC), a nonprofit statewide child advocacy organization whose mission is to improve the lives of the state's most vulnerable children through advocacy by concerned citizens. MCC is also the Massachusetts chapter of Prevent Child Abuse America.

Massachusetts Children's Trust Fund (MCTF)
294 Washington Street, Suite 640
Boston, MA 02108
Phone: 617-727-8957
Fax: 617-727-8997
E-mail: info@mctf.state.ma.us
Website: http://www.mctf.org
MCTF leads statewide efforts to prevent child abuse and neglect by supporting parents and strengthening families. As an umbrella organization, it funds, evaluates, and promotes the work of over 100 agencies providing family support and parenting education programs. It is the lead coordinator and training agency bringing Talking About Touching, a child personal safety curriculum for families and children in kindergarten and grades 1–4, to Massachusetts.

Massachusetts Department of Social Services
Central Office
24 Farnsworth Street
Boston, MA 02210
Phone: 617-748-2000
Fax: 617-261-7435
Website: http://www.mass.gov/dss
To report suspected abuse or neglect, call the local DSS office during business hours, or DSS's 24-hour hotline: 800-792-5200 (800-922-8169 in Region II/Worcester area). The DSS website provides a directory of regional and area offices and a list searchable by zip code.

Massachusetts Society for the Prevention of Cruelty to Children (MSPCC)
99 Summer Street
Boston, MA 02110
Phone: 617-587-1500

Fax: 617-587-1582
Website: http://www.mspcc.org
MSPCC is a private, nonprofit child welfare agency providing local community services such as prevention/early intervention programs; foster care, adoption, and child welfare programs; treatment programs (including treatment for child victims and treatment for perpetrators of child sexual abuse); crisis intervention and information; referral services; research; and public policy. MSPCC's services address the needs of linguistic minority families. Contact information for MSPCC's 25 community-based locations across the Commonwealth is available on the MSPCC website.

Minnesota Center Against Violence and Abuse (MINCAVA)
School of Social Work, University of Minnesota
105 Peters Hall
1404 Gortner Avenue
St. Paul, MN 55108-6142
Phone: 612-624-0721
Fax: 612-625-4288
Website: http://www.mincava.umn.edu
MINCAVA's mission is to support research, education, and access to up-to-date educational resources about all types of violence. Resources offered include higher education syllabi, published research, funding information, training events, and a searchable database of training manuals, videos, and other resources.

National Clearinghouse on Child Abuse and Neglect Information
Child Welfare Information Gateway
Children's Bureau/ACYF
1250 Maryland Avenue SW, Eighth Floor
Washington, DC 20024
Phone: 800-394-3366 or 703-385-7565
Fax: 703-385-3206
E-mail: nccanch@caliber.com
Website: http://www.childwelfare.gov/
The National Clearinghouse on Child Abuse and Neglect Information connects professionals and concerned citizens to timely and well-balanced information on programs, research, legislation, and statistics regarding the safety, permanency, and well-being of children and families.

Parents Helping Parents: The Roundtable of Support
108 Water Street
Watertown, MA 02472
Phone: 800-882-1250
Fax: 617-926-5011
E-mail: info@parentshelpingparents.org
Website: http://www.parentshelpingparents.org

Prevent Child Abuse Massachusetts
Massachusetts Citizens for Children
14 Beacon Street, Suite 706
Boston, MA 02108
Phone: 617-742-8555
Fax: 617-742-7808
Website: http://www.masskids.org
Prevent Child Abuse Massachusetts is a program of Massachusetts Citizens for Children. It is the state chapter of Prevent Child Abuse America, the country's leading voice for child abuse prevention. Its mission is to prevent the abuse and neglect of children in Massachusetts. To receive information on child abuse prevention, parenting tips, sexual abuse, or shaken baby syndrome, call 800-CHILDREN.

Stop It Now!
351 Pleasant Street, Suite B319
Northampton, MA 01060

Phone: 413-587-3500
E-mail: Info@stopitnow.org
Website: http://www.stopitnow.org
Stop It Now!, a national, public-health-based organization working to prevent and ultimately eradicate child sexual abuse, has recently begun to work in partnership with Massachusetts organizations such as MCSOM, MATSA, and MASOC. Through its public education, public policy, and research programs, Stop It Now! challenges adults concerned about behaviors in their friends or family, adult abusers, and people at risk for abusing to prevent child sexual abuse and to reach out for help. They promote the policy changes at the local and national level to support primary and secondary prevention strategies. The confidential Stop It Now! helpline (888-PREVENT) provides adults with information and resources.

Domestic/Dating Violence

Break the Cycle
5200 W Century Blvd
Suite 300
Los Angeles, CA 90045
Phone (administrative) 310-286-3383
Phone (teen helpline): 888-988-TEEN helpline
Fax: 310-286-3386
Website: http://www.breakthecycle.org/contact_us.html
Break the Cycle is a nonprofit organization whose mission is to engage, educate, and empower youth to build lives and communities free from dating and domestic violence. It provides preventive education, free legal services, advocacy, and support for young people between the ages of 12–22.

Center for Young Women's Health — Teen Safe Project
Children's Hospital Boston
Website: http://www.youngwomenshealth.org
The Teen Safe Project offers information guides, quizzes, and a curriculum to promote health and safety in relationships, on the streets, and on the Internet.

Dating Violence Intervention Project
P.O. Box 390672
Cambridge, MA 02139
Phone: 617-354-2676
Fax: 617-497-4836
The Dating Violence Intervention Project provides referrals and informational services for parents, children, and providers related to youth dating violence. It has a 24-hour hotline.

Employers Against Domestic Violence/Safe@Work Coalition
Phone: 617-348-3027
Website: http://www.safeatworkcoalition.org
Employers Against Domestic Violence (EADV) is a proactive collaboration of Massachusetts-based businesses that consider domestic violence a serious workplace issue and recognize the need to respond to it by developing and disseminating resources and models for prevention, education, and outreach.

Family Violence Prevention Fund
(See listing under Child Abuse and Neglect and Child Sexual Abuse.)

Jane Doe Inc., the Massachusetts Coalition Against Sexual Assault and Domestic Violence
(See Resources: Massachusetts Agencies and Organizations.)

The Law and Safety Planning
Office of Attorney General
One Ashburton Place
Boston, MA 02108

Phone: 617-727-2200
Website: http://www.ago.state.ma.us
Publication: Brochure on Teen Dating Violence & Restraining Orders

LoveisRespect.org/ the National Teen Dating Abuse Helpline (NTDAH)
Phone: 1-866-331-9474
TTY: 1-866-331-8453 TTY
Website: http://www.loveisrespect.org
NTDAH is a 24-hour national web-based and telephone helpline created by the National Domestic Violence Hotline and Liz Claiborne Inc. to help teens (aged 13–18) experiencing dating abuse. The Helpline and loveisrespect.org offer real-time one-on-one support from trained advocates.

Massachusetts Department of Public Health (DPH)
Batterer Intervention Programs
Phone: 617-624-5497
Fax: 617-624-5075
TTY: 617-624-5992
Website: http://www.mass.gov/dph/fch/bi/bips.htm
DPH certifies and monitors 18 batterer intervention programs across the state. Certified batterer intervention programs provide weekly educational group sessions for perpetrators of intimate-partner violence, with the goals of enhancing victim safety and promoting batterer accountability and behavior change toward a nonabusive lifestyle. Many certified batterer intervention programs provide services in languages other than English, and several provide free, specialized services for adolescent male perpetrators of dating/domestic violence. All programs use sliding fee scales that calculate clients' fees based on income, and DPH also contracts with certified batterer intervention programs so they may serve low-income clients for little or no charge.

Massachusetts Department of Public Health (DPH)
Collaborative Abuse Prevention in Racial and Ethnic Minority (CARE) Communities
Phone: 617-624-5420
CARE communities are networks of service agencies providing sexual assault and domestic violence intervention, outreach, and community education within particular racial and ethnic communities in specific geographic areas. Funded community networks include the Chelsea network, serving Latino communities; the Boston network, serving African American communities; the Berkshire County network, serving Latino communities; and the Lowell network, serving Cambodian communities.

Massachusetts Department of Public Health (DPH)
Refugee and Immigrant Safety and Empowerment Program
Phone: 617-624-5468
Fax: 617-624-5075
TTY: 617-624-5992
Website: http://www.mass.gov/dph/fch/violence/riselist.htm
DPH supports locally-based programs to provide culturally and linguistically appropriate domestic violence outreach and advocacy services to underserved immigrant and refugee communities. These linguistically and culturally-specific and appropriate domestic violence services include: crisis intervention; victim support and advocacy with police, courts and social services; education and outreach to isolated immigrant communities about rights and services; education and cross-training of bilingual/bicultural staff and mainstream providers; assistance with immigration and family court cases; and data collection. The RISE Programs employ a multi-lingual community based model where program advocates provide services in multiple settings that are responsive to client needs. Program advocates move with their clients – from shelter to court, to welfare offices, to the clients' own homes. This process facilitates continuity of case management and a holistic approach to services.

Massachusetts Domestic Violence Crisis and Support Resources
Website: http://www.aardvarc.org/dv/states/massdv.shtml
This online directory was compiled by Aardvarc.org with support from the Office for Victims of Crime, U.S. Dept. of Justice.

Massachusetts Governor's Commission on Sexual and Domestic Violence
(See full listing under Resources: Massachusetts Agencies and Organizations.)

SafeLink
Phone: 877-785-2020 (English) or 800-223-5001 (Spanish)
(See also Resources: Massachusetts Agencies and Organizations.)

The Teen Action Campaign
c/o The Family Violence Prevention Fund
383 Rhode Island Street, Suite 304
San Francisco, CA 94103
Phone: 415-252-8900
Fax: 415-252-8991
E-mail: info@teenactioncampaign.org
Website: http://www.seeitandstopit.org
This group of Massachusetts teens partnered with the Family Violence Prevention Fund, the National Network to End Domestic Violence, and the Advertising Council to launch a national campaign to prevent relationship violence called See It and Stop It. The campaign, which began its national rollout in February 2004, features television, radio, print, and collateral advertising, as well as teen toolkits and a website.

Wellesley Center for Research on Women (WCW)
(See also Resources: Massachusetts Agencies and Organizations.)

Women's Law Initiative
Website: http://www.womenslaw.org
Founded by a group of lawyers, teachers, activists, and Web designers interested in seeing the power of the Internet work for more disadvantaged people and specifically for survivors of domestic violence, this website includes general and legal information on teen dating violence, as well as links to other online resources on the subject, at http://www.womenslaw.org/teens.htm.

Harassment and Violence Based on Sexual Orientation

Boston Alliance of Gay, Lesbian, Bisexual, Transgendered and Questioning Youth (BAGLY)
P.O. Box 960814
Boston, MA 02196
Phone: 617-227-4313
Fax: 617-227-3266
Website: http://www.bagly.org

Gay and Lesbian Advocates and Defenders (GLAD)
30 Winter Street, Suite 800
Boston, MA 02108
Phone: 617-426-1350
E-mail: gladlaw@glad.org
Website: http://www.glad.org

Governor's Commission on Gay and Lesbian Youth
c/o Massachusetts Department of Public Health
250 Washington Street
Boston, MA 02108
Phone: 617-624-5485
Website: http://www.mass.gov/gcgly/

- *The Safe Schools Program for Gay and Lesbian Students,* a video produced by the Governor's Commission on Gay and Lesbian Youth in conjunction with Massachusetts Department of Education (DOE), informs school administrators, counselors, staff, high school students, and community members about the harmful effects of discrimination against gay and lesbian students. It highlights

the positive impact of the well-developed and far-reaching Safe Schools Program for Gay and Lesbian Students in addressing these issues, including a look at training sessions and interviews with teachers and students.

- *Outright. Your Right to Be,* a brochure developed jointly by the Governor's Commission on Gay and Lesbian Youth and DOE, answers questions about the rights of gay, lesbian, and bisexual students in Massachusetts public schools. It presents an overview of laws that ensure the right of all students, regardless of real or perceived sexual orientation, to equal educational opportunities. It also illustrates how to make schools safer and more supportive environments for all students.

Massachusetts Department of Education (DOE)
Safe Schools Program for Gay and Lesbian Students
350 Main Street
Malden, MA 02148
Phone: 781-338-6303
Website: http://www.doe.mass.edu/ssce/

Massachusetts Department of Public Health (DPH)
Supportive & Healthy Communities for Gay & Lesbian Youth (SHCGLY)
250 Washington Street, Fourth Floor
Boston, MA 02108
Phone: 617-624-5285
Fax: 617-624-5075
SHCGLY is the Commonwealth's suicide and violence prevention program for gay and lesbian youth.

National Youth Advocacy Coalition (NYAC)
1638 R Street NW, Suite 300
Phone: 202-319-7596
NYAC, established in 1993, seeks to end discrimination against young people who are gay, lesbian, bisexual, or transgender. Among other activities, NYAC works with schools to address antigay behavior on campus and provides hotline, resource, and referral information to students.

Safe Schools Coalition
1612 109th Avenue SE
Bellevue, WA 98004
Phone: 877-723-3723 or 206-632-0662 x49
E-mail: questions@safeschoolscoalition.org
Website: http://www.safeschoolscoalition.org

Internet Risks

i-Safety America, Inc.
Website: http://www.isafe.org/
(See full listing under Intentional Injury: Curricula and Teaching Tools.)

National Center for Missing & Exploited Children (NCMEC)
Charles B. Wang International Children's Building
699 Prince Street
Alexandria, VA 22314-3175
Phone: 703-274-3900
Fax: 703-274-2200
Website: http://www.missingkids.com/
NCMEC's Exploited Child Unit serves as a resource center for parents, law enforcement, and the public about the issues surrounding the sexual exploitation of children, including online enticement of children for sexual acts and unsolicited obscene material sent to children.

NetSafeKids.org
National Academies Computer Science and Telecommunications Board
Attn: NetSafeKids
The National Academies
500 Fifth Street NW
Washington, DC 20001
Phone: 202-334-2605
Fax: 202-334-2318
Website: http://search.nap.edu/netsafekids/index.html
In 2002, the National Research Council of the National Academies released *Youth, Pornography, and the Internet,* a report on protecting children and teens from sexually explicit material and threats from sexual predators operating online. NetSafeKids is based on the findings of this report. It provides practical information and tips on types and sources of sexually explicit content, ways that inappropriate material can reach children and teens, the threat of cyberstalking, the pros and cons of filtering and monitoring tools, and other issues involving Internet safety.

NetSmartz Workshop
Website: http://www.netsmartz.org
(See Intentional Injury: Curricula and Teaching Tools.)

Safe Online Outreach Society (SOLOS)
E-mail: info@safeonlineoutreach.com
Website: http://www.safeonlineoutreach.com
SOLOS educates the public about exploitation on the Internet by doing research, creating materials, and delivering presentations and workshops that train youth, professionals, and parents in how to recognize and respond to online sexual exploitation and to assist children and youth affected by this issue.

Self-Injury

American Self-Harm Information Clearinghouse (ASHIC)
521 Temple Place
Seattle, WA 98122
Phone: 206-604-8963
E-mail: ashic@selfinjury.org
Website: http://selfinjury.org
ASHIC strives to educate the general public and medical and psychological professionals about the phenomenon of self-harm.

ChokingGameInformation.com
The Dylan Blake Foundation for Adolescent Behaviors LLC
P.O. Box 3942
St. Augustine, FL 32085
Phone: 904-315-2222
Website: http://www.dylan-the-boy-blake.com/index.html

Focus Adolescent Services
Phone: 410-341-4216
Website: http://www.focusas.com/SelfInjury.html
This online clearinghouse of information and resources offers help and support to families with troubled and at-risk teens, as well as to professionals and youth workers, including information and resources specific to self-injury.

S.A.F.E. (Self-Abuse Finally Ends) Alternatives
Linden Oaks Hospital
852 West Street
Naperville, IL 60540
Phone: 800-366-8288

Website: http://www.selfinjury.com
SAFE Alternatives® is a treatment approach, professional network, and educational resource founded by the authors of *Bodily Harm: The Breakthrough Treatment Program for Self-Injurers.* Materials available through the organization include print, video, and audiotape educational materials designed for patients, families, and professional helpers.

SIARI (Self Injury and Related Issues)
Website: http://www.siari.co.uk/
This online resource for self-injurers and anyone interested in the complex phenomenon of self-injury is maintained by Jan Sutton, author of *Healing the Hurt Within: Understand and Relieve the Suffering Behind Self-Destructive Behaviour.*

Trichotillomania Learning Center (TLC)
303 Potrero Street, Suite 51
Santa Cruz, CA 95060
Phone: 831-457-1004
Fax: 831-426-4383
E-mail: info@trich.org
Website: http://www.trich.org
TLC is a national nonprofit organization established to provide information, support, and referral sources regarding the experience and treatment of trichotillomania (compulsive hair pulling).

Young People & Self Harm
E-mail: selfharm@ncb.org.uk
Website: http://www.selfharm.org.uk/
This information resource for young people who self-harm, their friends and families, and helping professionals is published by the National Children's Bureau, the nationally recognized authority on policy, research, and best practice relating to children and young people in England and Northern Ireland.

Sexual Harassment and Sexual Assault (including Date Rape)

American Association of University Women (AAUW) Educational Foundation
1111 Sixteenth Street NW
Washington, DC 20036
Phone: 800-326-2289
E-mail: foundation@aauw.org
Website: http://www.aauw.org/ef/index.cfm

Boston Area Rape Crisis Center (BARCC)
99 Bishop Allen Drive
Cambridge, MA 02139
Phone: 800-841-8371 or 617-492-7273 (English hotlines)
800-223-5001 (Spanish)
TTY: 617.492.6434
Website: http://www.barcc.org
In addition to 24-hour hotlines (see above) for survivors, significant others (including family and friends), and professionals, BARCC offers short-term (12–week) counseling, support groups, legal assistance, educational programs and workshops, and a referral network. Its publication, *What You Need to Know about Sexual Assault*, produced with support from the Massachusetts Department of Public Health and the Massachusetts Office of Victims Assistance, is available online at http://www.barcc.org/BarccBookWeb.pdf.

Employers Against Domestic Violence/Safe@Work Coalition (EADV)
Phone: 617-348-3027
Website: http://www.safeatworkcoalition.org
EADV is a proactive collaboration of Massachusetts-based businesses that consider domestic violence a serious workplace issue and recognize the need to respond to it by developing and disseminating resources and models for prevention, education, and outreach.

Equal Employment Opportunity Commission (EEOC)
Phone: 800-669-4000
TTD: 800-669-6820
EEOC is the federal agency for filing complaints of sexual harassment and other forms of employment-related discrimination.

Jane Doe Inc., The Massachusetts Coalition Against Sexual Assault and Domestic Violence
(See Resources: Massachusetts Agencies and Organizations.)

Massachusetts Adolescent Sexual Abuser Coalition (MASOC)
A project of the Massachusetts Association for the Treatment of Sexual Abusers
c/o New England Adolescent Research Institute
70 North Summer Street
Holyoke, MA 01040
Phone: 413-532-1713
Fax: 413-532-1795
Website: http://www.matsa.org/masocstandards.htm
MASOC is an association of therapists, public and private sector administrators, probation personnel, attorneys, and judges committed to preventing sexual abuse through early intervention in the lives of sexually abusive youth. MASOC is involved in statewide advocacy, training, development of the knowledge base, credentialing of sex offender practitioners as a way of providing referral sources with a list of qualified competent sex offender specialists, coordinating a yearly statewide conference, and developing and distributing a statewide directory of specialized resources. Membership is open to all professionals and laypersons who share MASOC's stated perspectives and agree with its purposes.

Massachusetts Coalition for Sex Offender Management (MCSOM)
Phone: 617-624-5457
TTY: 617-624-5992
E-mail: marci.diamond@state.ma.us
Website: http://www.mcsom.com
MCSOM is a public-private partnership promoting public safety and health by improving the effectiveness of sex offender management in Massachusetts and increasing the public's understanding of sexual abuse and exploitation. MCSOM maintains a list of sex offender treatment providers in Massachusetts.

Massachusetts Commission Against Discrimination (MCAD)
Phone: 617-994-6111 (sexual harassment policies)
617-994-6000 (Boston)
413-739-2145 (Springfield)
Website: http://www.mass.gov/mcad/
MCAD is the state agency for filing complaints of sexual harassment and other forms of discrimination.

Massachusetts Department of Public Health (DPH)
Sexual Assault Nurse Examiner (SANE) Program Sites
Phone: 617-624-6085
Fax: 617-624-5075
Website: http://www.state.ma.us/dph/fch/violence/
DPH specially trains, certifies, and supports registered nurses and physicians to provide quality care and forensic evidence collection to sexual assault victims entering *designated emergency departments.* SANE health providers create a link between health, legal, and advocacy systems for victims seeking services. Currently, SANE sites exist for adolescent and adult survivors (age 12 and up) in all areas of the state, and a pediatric SANE program for younger children is under development, in coordination with children's advocacy centers, hospitals, and other providers.

Sexual Assault Prevention and Survivor Services (SAPSS)
Phone: 617-624-5457
Fax: 617-624-5075

Website: http://www.mass.gov/dph/fch/sapss/index.htm
SAPSS aims to promote and enhance effective and accessible services for all survivors of sexual assault. SAPSS fosters collaborations with other state and community organizations, such as Jane Doe, Inc.: The Massachusetts Coalition Against Sexual Assault and Domestic Violence, to maximize the effective use of resources and achieve program goals toward the elimination of sexual assault. It collects and analyzes data on sexual assault, evaluates sexual assault survivor services and community education programs, and supports and monitors funded programs, including rape crisis centers, Llámanos, a statewide Spanish language hotline, and other related projects. The website provides a list of rape crisis center hotlines and links to selected rape crisis centers' websites.

Wellesley Center for Research on Women (WCW)
(See also Resources: Massachusetts Agencies and Organizations.)

U.S. Department of Education
Office for Civil Rights (OCR)
OCR offers information about sexual harassment in schools. Primary resources include Frequently Asked Questions (http://www.ed.gov/about/offices/list/ocr/qa-sexharass.html) and a document, *Sexual Harassment Guidance* (http://www.ed.gov/about/offices/list/ocr/docs/sexhar00.html).

Suicide (see Chapter 11 Resources)

Youth Violence/Gang Activity/Hate Acts

Anti-Defamation League (ADL) Law Enforcement Agency Resource Network (LEARN)
Website: http://www.adl.org/hate_symbols/default.asp
This website provides a database of extremist symbols, logos, and tattoos.

Hate Crimes Research Network (HCRN)
Department of Sociology
Portland State University
P.O. Box 751
Portland, OR 97207
E-mail: cfrb@pdx.edu
Website: http://www.hatecrime.net/
HCRN is designed to link academic research on bias-motivated crime. Based at the Department of Sociology of Portland State University, HCRN links work done by sociologists, criminologists, psychologists, and other academics, including graduate students, to create a common pool of research and data to understand the phenomenon of hate crimes.

Join Together Online (JTO)
One Appleton Street, 4th Floor
Boston, MA 02116-5223
Phone: 617-437-1500
Fax: 617-437-9394
E-mail: info@jointogether.org
Website: http://www.jointogether.org/
JTO, a project of the Boston University School of Public Health, is a comprehensive network of free online services supporting community-based efforts to address substance abuse and gun violence.

Juvenile Justice Clearinghouse
National Criminal Justice Reference Service
P.O. Box 6000
Rockville, MD 20849-6000
Phone: 800-851-3420 or 301-519-5600
E-mail: askncjrs@ncjrs.org

Resources:

- *Healing the Hate: A National Bias Crime Prevention Curriculum for Middle Schools* (1997), a curriculum suitable for grades 7–12
- *From the Courthouse to the Schoolhouse: Making Successful Transitions* (2000)

National Education Association (NEA)
1201 16th Street NW
Washington, DC 20036-3290
Phone: 202-833-4000
Website: http://www.nea.org
NEA's Human and Civil Rights Division (HCR) has primary responsibility for NEA's Safe Schools Program. An important component of the program is preventing and responding to hate-motivated incidents in schools. In addressing school safety in general, and hate-motivated behavior in particular, HCR provides training, technical assistance, and information to NEA members and the public.

National Hate Crime Prevention Project
Educational Development Center
55 Chapel Street
Newton, MA 02158-1060
Phone: 800-225-4276 or 617-969-7100, x2534
Funded jointly by the U.S. Department of Justice's Office of Juvenile Justice and Delinquency Prevention and the U.S. Department of Education's Safe and Drug-Free Schools Program, the National Hate Crime Prevention Project has developed *Preventing Hate Crime: A Multidisciplinary Approach,* which brings together educators, law enforcement and victim assistance professionals, policymakers, members of the religious community, and youth to develop strategies to prevent hate crime in their communities.

National Youth Gang Center (NYGC)
Institute for Intergovernmental Research
P.O. Box 12729
Tallahassee, FL 32317
Phone: 850-385-0600
Fax: 850-386-5356
E-mail: nygc@iir.com
Website: http://www.iir.com/nygc/
Operated by the Office of Juvenile Justice and Delinquency Prevention (OJJDP) to assist policymakers, practitioners, and researchers in reducing youth gang involvement and crime, NYGC provides information, resources, practical tools, and expertise toward the development and implementation of effective gang prevention, intervention, and suppression strategies. NYGC also maintains an electronic mailing list, GANGINFO, where professionals working with youth gangs can exchange information about effective strategies for identifying and countering gang crime; prevention, intervention, and suppression strategies; working with victims of gang crime; and promoting professional education and research. Information is also available at this site about the OJJDP's Gang-Free Schools Program, a replication of the OJJDP Comprehensive Gang Model that seeks to reduce youth gang crime and violence in schools throughout the nation.

National Youth Violence Prevention Resource Center
Phone: 866-723-3968
Website: http://www.safeyouth.org
Developed by CDC and other federal partners, the Resource Center provides current information developed by federal agencies and the private sector pertaining to youth violence. Resources include fact sheets, best-practices documents, funding and conference announcements, statistics, research bulletins, surveillance reports, and profiles of promising programs.

Office of Juvenile Justice and Delinquency Prevention (OJJDP)
810 Seventh Street NW
Washington, DC 20531
Phone: 202-307-5911
Website: http://www.ojjdp.ncjrs.org/index.html

Students Against Violence Everywhere (SAVE)
322 Chapanoke Road, Suite 110
Raleigh, NC 27603
Phone: 866-343-7283
Fax: 919-661-7777
E-mail: cwray@nationalsave.org
Website: http://nationalsave.org
The National Association of Students Against Violence Everywhere **(**SAVE**),** Inc. is a nonprofit organization striving to decrease the potential for violence in schools and communities by promoting meaningful student involvement, education, and service opportunities in efforts to establish, support, and grow SAVE chapters.

Tolerance.org
Website: http://www.tolerance.org
This project of the Southern Poverty Law Center offers an online guide, *Responding to Hate at School,* designed to help administrators, teachers, and counselors react promptly and effectively to all bias incidents and to involve students, parents, and community leaders in finding solutions to underlying tensions. It offers proven strategies and concrete steps for addressing day-to-day problems such as casual putdowns, emergency situations like hate crimes, and long-term issues including school policies and staff development designed to promote harmony.

U.S. Department of Education
Office for Civil Rights (OCR)
Customer Service Team
550 12th Street SW
Washington, DC 20202
Phone: 800-421-3481
Website: http://www.ed.gov/offices/OCR
OCR provides legal guidance, technical assistance, and materials on racial and sexual harassment in school settings.

U.S. Department of Education
Office of Elementary and Secondary Education Safe and Drug-Free Schools Program
400 Maryland Avenue SW, Room 3E300
Washington, DC 20202
Phone: 202-260-3954
Fax: 202-260-7767
E-mail: SAFESCHL@ed.gov
Publication: *Preventing Youth Hate Crime: A Manual for Schools and Communities*

U.S. Department of Justice
Community Relations Service (CRS)
600 E Street NW, Suite 6000
Washington, DC 20530
Phone: 202-305-2935
Fax: 202-305-3009
CRS, a unique component of the Department of Justice, was established by the Civil Rights Act of 1964 to prevent or resolve community conflicts arising from actions or policies perceived to be discriminatory on the basis of race, color, or national origin. CRS provides a variety of services to schools and other community organizations, including conflict resolution, conciliation, and mediation training for students, teachers, and school administrators.

REFERENCES

Ackard, D. M., Neumark-Sztainer, D. (2002). Date violence and date rape among adolescents: Associations with disordered eating behaviors and psychological health. *Child Abuse and Neglect, 26,* 455–473.

Alderman, T. (1997). *The scarred soul: Understanding and ending self-inflicted violence.* Oakland, CA: New Harbinger Publications.

Allen, K. (1998). *Preventing childhood emergencies: A guide to developing effective injury prevention initiatives*. Washington, DC: Emergency Medical Services for Children (EMSC) National Resource Center.

Alterman, D. M., Daley, B. J., Kennedy, A. P. Jr., Nguyen, T. D., Raju, R. & Lee, S. (2006 updated) *Considerations in pediatric trauma.* Article published in eMedicine from WebMD. Retrieved in 2007 from http://www.emedicine.com/med/topic3223.htm.

American Academy of Pediatrics, Committee on School Health. (2003). Out-of-school suspension and expulsion*. Pediatrics, 112:* 1206–1209. Retrieved in 2006 from http://aappolicy.aappublications.org/cgi/content/full/pediatrics;112/5/1206.

American Academy of Pediatrics, Committee on Injury and Poison Prevention and Committee on Sports Medicine and Fitness.(1998) In-line skating injuries in children and adolescents. *Pediatrics, 101*:720–2.

American Academy of Pediatrics, Committee on Injury and Poison Prevention, and Widome, M. D. (Ed.). (1997). *Injury prevention and control for children and youth* (3rd ed.). Elk Grove Village, IL: American Academy of Pediatrics.

American Academy of Orthopaedic Surgeons. (2004). *Growth plate fractures.* Retrieved in 2006 from http://orthoinfo.aaos.org/fact/thr_report.cfm?thread_id=244&topcategory=Chi.

American Association of University Women Educational Foundation. (2001). *Hostile hallways*: *Bullying, teasing, and sexual harassment in school.* Washington, DC: AAUW Educational Foundation.

Anderson, M. (2002). *Fundamentals of sports injury management*. Philadelphia: Lippincott, Williams & Wilkins.

Anderson, M., Kaufman, J., Simon, T. R., Barrios, L., Paulozzi, L., Ryan, G., et al., and the School-Associated Violent Deaths Study Group. (2001). School-associated violent deaths in the United States, 1994–1999. *Journal of the American Medical Association, 286*(21), 2695–2702. PMID: 11730445.

Arnette, J. L. & Walsleben, M. C. (1998). *Combating fear and restoring safety in schools: A juvenile justice bulletin*. Washington, DC: Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice.

Aspy, D. N. & Aspy, C. B. (2000). Hate crimes: What they are, why they happen, and counselors' roles in preventing them. In D. S. Sandhu & C. B. Aspy (Eds.). *Violence in American schools: A practical guide for counselors* (pp. 305–316). Alexandria, VA: American Counseling Assoc.

Azeredo, R. & Stephens-Stidham, S. (2003). Design and implementation of injury prevention curricula for elementary schools: Lessons Learned. *Injury Prevention, 9*(3), 274–278.

Barrios, L. C. & Sleet, D. A. (2001). Adolescent injuries and violence. In N. Smelser & P. Balters (Eds.). *International encyclopedia of the social and behavioral sciences.* Oxford, UK: Elsevier Press.

Baumeister, R. F., Twenge, J. M. & Nuss, C. (2002). Effects of social exclusion on cognitive processes: Anticipated aloneness reduces intelligent thought. *Journal of Personality and Social Psychology*, *83*, 817–827.

Beane, A. L. (1999). *The bully free classroom: Over 100 tips and strategies for teachers K-8.* Minneapolis, MN: Free Spirit Publishing.

Black, M. C., Noonan, R., Legg, M., Eaton, D. & Breiding, M. J. (2006). Physical dating violence among high school students — United States, 2003. *Morbidity and Mortality Weekly Report, 55*(19), 532–535. Retrieved in 2007 from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5519a3.htm.

Blauvelt, P. (2000). *Making schools safe for students: Creating a proactive school safety plan*. Thousand Oaks, CA: Corwin Press.

Bonauto, M. L. (1999). The legal rights of public school students and teachers in Massachusetts: A focus on sexual orientation discrimination and free speech in Massachusetts elementary and secondary schools. Boston: Gay & Lesbian Advocates & Defenders (GLAD). Retrieved in 2006 from http://www.glad.org.

Bonny, A. E., Britto, M. T., Klostermann, B. K., et al. (2000). School disconnectedness: Identifying adolescents at risk. *Pediatrics*, *106*(5), 1017–1021. PMID: 11061769. Retrieved in 2006 from http://www.pediatrics.org.

Borowsky, I. W. & Ireland, M. (2004). Predictors of future fight-related injury among adolescents. *Pediatrics, 113*(3 Pt 1), 530–536.

Boston Area Rape Crisis Center. (2005). What you need to know about rape and sexual assault: Important information for survivors, family, friends, and professionals. Boston, MA: BARCC. Retrieved in 2007 from http://www.barcc.org/BarccBookWeb.pdf.

Brener, N. D., Simon, T. R., Krug, E. G. & Lowry, R. (1999). Recent trends in violence-related behaviors among high school students in the United States. *Journal of the American Medical Association*, *282*, 440–446.

Brilliant, K., Tyiska, C., DiBara, J. & Fiset, N. (1996). *Healing hearts/mending minds: An assessment of adolescent victimization and an overview of promising interventions in the United States*. Washington, DC: National Organization for Victim Assistance; Newton, MA: Education Development Center.

Browne, K. (2002). *Early prediction and prevention of child abuse: A handbook.* Hoboken, NJ: John Wiley & Sons.

Bureau of Justice Statistics (BJS) and the National Center for Education Statistics (NCES). (2006). *Indicators of school crime and safety: 2006.* Authors. Retrieved online in 2007 from http://nces.ed.gov/programs/crimeindicators/ind_01.asp.

Carskadon, M. A., Mindell, J. A. & Drake, C. (2006). *Sleep in america poll: Teens.* Washington, D.C.: National Sleep Foundation.

Carter, J. (2005). *Domestic violence, child abuse, and youth violence: Strategies for prevention and early intervention.* San Francisco, CA: Family Violence Prevention Fund. Retrieved in 2007 from http://www.mincava.umn.edu/link/documents/fvpf2/fvpf2.shtml.

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control (NCIPC). (2006). Youth Violence Fact Sheet. Retrieved in 2007 from http://www.cdc.gov/ncipc/factsheets/yvfacts.htm.

Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), Division of Adolescent and School Health (DASH). (2006). Unintentional injuries, violence and the health of young people. Retrieved in 2007 from http://www.cdc.gov/HealthyYouth/injury/pdf/facts.pdf.

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control (NCIPC). (2006). School associated violent deaths. Retrieved in 2007 from http://www.cdc.gov/ncipc/sch-shooting.htm.

Centers for Disease Control and Prevention. (2004). *Sexual violence prevention: Beginning the dialogue*. Atlanta, GA: Author.

Centers for Disease Control and Prevention. (2004). *Web-based injury statistics query and reporting system* (WISQARS). National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (producer). Retrieved 12/13/2004 from http://www.cdc.gov/ncipc/wisqars.

Centers for Disease Control and Prevention. (2004). *Youth Risk Behavior Surveillance – United States,2003.* Atlanta, GA: National Center for Chronic Disease Prevention and Health Promotion.

Centers for Disease Control and Prevention. (2001). School health guidelines to prevent unintentional injuries and violence. *Morbidity and Mortality Weekly Report, Recommendations Report, 50*(RR-22), 1–73. PMID: 11770577. Retrieved in 2007 from http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5022a1.htm

Children's Hospital of Philadelphia, Center for Injury Research and Prevention and State Farm Insurance. (2006). Driving: Through the eyes of teens. Research report based on the National Young Drivers Survey and produced as part of the Young Driver Research Initiative. Retrieved online in 2007 from http://stokes.chop.edu/programs/injury/files/PCPS_Reports/1289teen.pdf.

Christian, C., Scribano, P., Seidl, T. & Pinto-Martin, J. (1997). Pediatric injury resulting from family violence. *Pediatrics*, *99*(2), 208–212.

Cobb, S. & Battin, B. (2004). Second-impact syndrome. *Journal of School Nursing, 20*(5), 262–267.

Cohn, A. & Canter, A. (2003). *Bullying: Facts for schools and parents*. Fact sheet, National Association of School Psychologists. Retrieved in 2006 from http://www.naspcenter.org/factsheets/bullying_fs.html.

Coloroso, B. (2004). *The bully, the bullied, and the bystander: From preschool to high school — How parents and teachers can help break the cycle of violence.* New York: HarperResource.

Cross, D., Stevenson, M., Hall, M., Burns, S., Laughlin, D., Officer, J., et al. (2000). The child pedestrian injury prevention project: Evaluation of a school-based road safety program. *Preventive Medicine, 30*, 179–187.

Daane, D. M. (2003). Child and adolescent violence. *Orthopedic Nursing, 22*(1), 23–29. PMID: 12640949.

Dahlberg, L. L., Toal, S. B., Swahn, M. & Behrens, C. B. (2005). *Measuring violence-related attitudes, behaviors, and influences among youths: A compendium of assessment tools* (2nd ed.). Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

Dake, J. A., Price, J. H. & Telljohann, S. (2003). The nature and extent of bullying at school. *Journal of School Health, 73*(5), 173–180.

Danseco, E. R., Miller, T. R. & Spicer, R. S. (2000). Incidence and costs of 1987–1994 childhood injuries: demographic break downs. *Pediatrics,105*(2).

Davis, E. K. (2004). Sports and recreational injuries in children and adolescents: Prevention and education. *Journal of the Oklahoma State Medical Association, 97*(1), 18–21.

Davis, S. (2004). *Schools where everyone belongs: Practical strategies for reducing bullying*. Wayne, ME: Stop Bullying Now.

DB Foundation. (2007). Choking game statistics in the United States. Retrieved in 2007 from http://www.thedbfoundation.com/Choking_Game_Statistics.html.

Demorest, R. A. & Landry, G. L. (2003). Prevention of pediatric sports injuries. *Current Sports Medicine Reports*, *2*, 337–343.

Department of Health and Human Services (2001). Youth violence: a report of the Surgeon General [online]. Available from: http://www.surgeongeneral.gov/library/youthviolence/toc.html.

DeVoe, J. F., Peter, K., Kaufman, P., Miller, A., Noonan, M., Snyder, T. D., U.S. Departments of Education and Justice, et al. (2004). *Indicators of school crime and safety: 2004* (NCES 2005–002/NCJ 205290). Washington, DC: U.S. Government Printing Office.

DeVoe, J. F., Peter, K., Noonan, M., Snyder, T. D., Baum, K. and U.S. Departments of Education and Justice (2005). *Indicators of school crime and safety: 2005* (NCES 2006–001/NCJ 210697). Washington, DC: U.S. Government Printing Office.

Domestic Violence Victim Assistance Program. (2007) DVVAP FAQs: Answers to common legal questions and resources for victims of domestic violence. Retrieved in 2007 from http://www.dvvap.org/.

Dowd, M. D., Seidel, J. S., Sheehan, K., Barlow, B. & Bradbard, S. L. (2000). Teenagers' perceptions of personal safety and the role of the emergency health care provider. *Annals of Emergency Medicine, 36*, 346–350.

Dryfoos, J. (1998). *Safe passage: Making it through adolescence in a risky society*. New York, NY: Oxford Press.

Dunn, K. A., Thurman, D. J. & Alverson, C. J., Jr. (2006 update). *The epidemiology of traumatic brain injury among children and adolescents.* Paper published in connection with NIH Consensus Development Conference on Rehabilitation of Persons with Traumatic Brain Injury. Atlanta, GA: Centers for Disease Control and Prevention. Retrieved in 2007 from http://www.nichd.nih.gov/publications/pubs/TBI_1999/Appendix_B.cfm.

Dwyer, K. & Osher, D. (2000). *Safeguarding our children: An action guide*. Washington, DC: U.S. Departments of Education and Justice, American Institutes for Research.

Dwyer, K., Osher, D. & Warger, C. (1998). *Early warning, timely response: A guide to safe schools*. Washington, DC:
U.S. Department of Education. Retrieved in 2006 from http://www.ed.gov/offices/OSERS/OSEP/earlywrn.html. (For printed copies, call 877-433-7827.)

Edleson, J. L. (1999). The overlap between child maltreatment and woman battering. *Violence Against Women, 5*(2), 134–154.

Edwards, C. J., Rubin, A. L. & Rubin, M. H. (2005). *LegalEASE: The Cycle of Violence.* Instructional guide for program five of the law-related education high school video series. Baton Rouge, AL: Louisiana Public Broadcasting.

Elder, R. W. & Shults, R. A. (2002). Trends in alcohol involvement in fatal motor vehicle crashes among young drivers: 1982-2001. *Morbidity and Mortality Weekly Report, 51*, 1089–1091.

Farrell, A. D., Meyer, A. L. & White, K. S. (2001). Evaluation of responding in peaceful and positive ways (RIPP): A school-based prevention program for reducing violence among urban adolescents. *Journal of Clinical Child Psychology, 30*(4), 451–464.

Favazza, A. (1996). *Bodies under siege: Self-mutilation and body modification in culture and psychiatry* (2nd ed.). Baltimore, MD: Johns Hopkins University Press.

Fisher, K. & Kettl, P. (2003). Teachers' perceptions of school violence. *Journal of Pediatric Health Care, 17*(2), 79–83. PMID: 12665730.

Fisher, D., Pollatsek, A. P. & Pradhan, A. (2006). Can novice drivers be trained to scan for information that will reduce their likelihood of a crash? *Injury Prevention,* 12 (Suppl 1), i25–i29.

Forjuoh, S. N., Fiesinger, T., Schuchmann, J. A. & Mason, S. (2002). Helmet use. A survey of 4 common childhood leisure activities. *Archives of Pediatric and Adolescent Medicine, 156*:656–661.

Foshee, V. A., Bauman, K. E., Ennett, S. T., Linder, G. F., Benefield, T. & Suchindran, C. (2004). Assessing the long-term effects of the Safe Dates program and a booster in preventing and reducing adolescent dating violence victimization and perpetration. *American Journal of Public Health, 94*(4), 619–624. PMID: 15054015.

The Future of Children. (2000). *Unintentional injuries in childhood: The Safe Kids/Healthy Neighborhoods Program*. Los Altos, CA: David and Lucile Packard Foundation.

Gibson, L. E. (2007, updated). Self-harm. Online fact sheet. PTSD Information Center, National Center for PTSD, White River Junction, VT. Retrieved in 2006 from http://www.ncptsd.va.gov/ncmain/index.jsp.

Glew, G. M., Fan, M., Katon, W., Rivara, F. P. & Kernic, M. A. (2005). Bullying, Psychosocial Adjustment, and Academic Performance in Elementary School. *Archives of Pediatric & Adolescent Medicine, 1*59(11), 1026–1031.

Goodenow, C., Szlacha, L. & Westheimer, E. (2006). School support groups, other school factors, and the safety of sexual minority adolescents. *Psychology in the Schools, 43*(5), 573–589.

Gottfredson, G. D. & Gottfredson, D. C. (2001). *Gang problems and gang programs in a national sample of schools: Findings from the survey of school-based gang prevention and intervention programs*. Ellicott City, MD: Gottfredson Associates. Retrieved in 2006 from http://www.gottfredson.com/gang.htm.

Goves, B. M., Augustyn, M., Lee, D. & Sawires, P. (2002). *Identifying and responding to domestic violence: Consensus recommendations for child and adolescent health.* San Francisco, CA: Family Violence Prevention Fund. Retrieved in 2006 from http://endabuse.org/programs/healthcare/files/Pediatric.pdf.

Groeger, J. A. (2006). Youthfulness, inexperience and sleep loss: the problems young drivers face and those they pose for us. *Injury Prevention, 12* (Suppl 1), i19–i24.

Hamby, J. V. (1999). *Developing a comprehensive violence prevention plan: A practical guide*. Clemson, SC: Clemson University, National Dropout Prevention Center.

Harris, M. (1998). *School experiences of gay and lesbian youth: The invisible minority.* Binghamton, NY: Haworth Press.

Heck, A., Collins, J. & Peterson, L. (2001). Decreasing children's risk taking on the playground. *Journal of Applied Behavioral Analysis, 34*(3), 349–352. PMID: 11678532.

Hertz, M., Wechsler, H., Barrios, L. & Sleet, D. (2006). Injury Prevention: A critical component for school success. *The State Education Standard,7*(1), 4–10.

Hoover, J. H. (1997). *Bullying prevention handbook: A guide for principals, teachers, and counselors.* Bloomington, IN: National Educational Service.

Howell, J. C. (2006) The impact of gangs on communities. *NYGC Bulletin, No. 2,* August. National Youth Gang Center, Office of Juvenile Justice Programs. Retrieved in 2007 from http://www.iir.com/nygc/publications/NYGCbulletin_0806.pdf.

Howell, J. C. & Lynch, J. (2000). Youth gangs in schools. *Juvenile Justice Bulletin*. Youth Gang Series. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.

Howell, J. C. & Wilson, J. J. (2000). *Youth gang programs and strategies*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention. Retrieved in 2006 from http://www.ncjrs.org/html/ojjdp/summary_2000_8/home.html.

Injury Free Coalition for Kids. (2004). Wheeled sports: Preventing injuries in children. Retrieved in 2007 from http://www.injuryfree.org/resources/WebsiteWheeledSportsIntroInfo.pdf.

Insurance Institute for Highway Safety, Highway Loss Data Institute. (2007). Q&A Teenagers–underage drinking. Arlington, VA: The Institute. Retrieved in 2007 from http://www.iihs.org/research/qanda/underage.html.

Insurance Institute for Highway Safety (IHHS), Highway Loss Data Institute. (2005). Q&A: Teenagers–general. Arlington, VA: The Institute. Retrieved in 2007 from http://www.iihs.org/research/qanda/teens.html.

Insurance Institute for Highway Safety (IHHS), Highway Loss Data Institute. (2004). Q&A: Teenagers–underage drinking. Arlington, VA: The Institute.

Jaffe, P. & Sudermann, M. (1995). Child witness of women abuse: Research and community responses. In S. Stith & M. Straus (Eds.), *Understanding partner violence: Prevalence, causes, consequences, and solutions. Families in focus services* (Vol. 2). Minneapolis, MN: National Council on Family Relations.

Jonah, B. A. & Dawson, N. E. (1987). Youth and risk: Age differences in risky driving, risk perception, and risk utility. *Alcohol, Drugs and Driving, 3,* 13–29.

Joyce, E. (2003) Teen dating violence: Facing the epidemic. *Networks,* Fall/Winter. National Center for Victims of Crime. Retrieved in 2007 from http://www.ncvc.org/ncvc/AGP.Net/Components/documentViewer/Download.aspxnz?DocumentID=38039.

Juvonen, J., Graham, S. & Schuster, M. (2003). Bullying among young adolescents: The strong, the weak, and the troubled. *Pediatrics, 112*, 1231–1237.

Kadel, S., Watkins, J., Follman, J. & Hammond, C. (1999). Reducing school violence: Building a framework for school safety (3rd Ed.). Greensboro, NC: SERVE.

Kilpatrick, K. I., Litt, M. & Williams, L. (1997). Post-traumatic stress disorder in child witnesses to domestic violence. *American Journal of Orthopsychiatry, 67*(4), 639–644.

Laflamme, L., Engstrom, K., Moller, J. & Hallqvist, J. (2003). Peer victimization during early adolescence: An injury trigger, an injury mechanism and a frequent exposure in school. *International Journal of Adolescent Medicine and Health, 15*(3), 267–279. PMID: 12964447.

Laforest, S., Robitaille, Y., Lesage, D. & Dorval, D. (2001). Surface characteristics, equipment height, and the occurrence and severity of playground injuries. *Injury Prevention 7*(1), 35–40. PMID: 11289532.

Levenson, M. & Mishra, R. (2006, December 27). Bill sets tougher teen driving rules. *Boston Globe.* Retrieved in 2007 from http://www.boston.com/news/local/massachusetts/articles/2006/12/27/bill_sets_tougher_teen_driving_rules/.

Limbos, M. A. & Peek-Asa, C. (2003). Comparing unintentional and intentional injuries in a school setting. *Journal of School Health, 73*(3), 101–106. PMID: 12677728.

Linehan, M. M., Comtois, K. A., Murray, A. M., Brown, M. Z., Gallop, R. J., Heard, et al. (2006). Two-year randomized controlled trial and follow-up of dialectical behavior therapy vs. therapy by experts for suicidal behaviors and borderline personality disorder. *Archives of General Psychiatry, 63*(7), 757–66.

Link, M. S., Wang, P. J., VanderBrink, B. A., Takeuchi, M., Maron, B. J. & Estes, N. A. M. (1999). Timing of chest impact is critical for the vulnerability to ventricular fibrillation and sudden death in an experimental model of commotio cordis. *Circulation, 100,* 4612.

Linker, D., Miller, M. E., Freeman, K. S. & Burbacher, T. (2005). Health and safety awareness for working teens: Developing a successful, statewide program for educating teen workers. *Family & Community Health, 28*(3), 225–238. PMID: 15958881.

Lipkin, A. (2000). *Understanding homosexuality, changing schools*. Boulder, CO: Westview Press.

Loeber, R. & Farrington, D. P. (1998)*. Serious and violent juvenile offenders: Risk factors and successful interventions.* Thousand Oaks, CA: Sage Publications.

Luckstead, E. F. & Patel, D. R. (2002). Catastrophic pediatric sports injuries. *Pediatric Clinics of North America, 49,* 581–591.

Mack, M. G., Sacks, J. J. & Thompson, D. (2000). Testing the impact attenuation of loose-fill playground surfaces. *Injury Prevention*, *6*(2), 141–144.

Maron, B. J. (2003). Sudden death in young athletes. *New England Journal of Medicine, 349,* 1064–1075.

Massachusetts Coalition for Occupational Safety and Health. (2005). *Teens affected by workplace violence*. Retrieved in 2006 from http://www.masscosh.org.

Massachusetts Department of Education. (2006). *2005 Massachusetts youth risk behavior survey (YRBS).* Retrieved in 2006 from http://www.doe.mass.edu/cnp/hprograms/yrbs/.

Massachusetts Department of Education (2004). *2003 Massachusetts youth risk behavior survey (YRBS).* Retrieved in 2006 from http://www.doe.mass.edu/cnp/hprograms/yrbs/.

Massachusetts Medical Society in cooperation with the Massachusetts Interscholastic Athletic Association (MIAA) and the Massachusetts Medical Society Alliance. (1999, 2003). *Concussion: A coaches' guide for sideline evaluation.* Retrieved in 2006 from http://www.massmed.org/AM/Template.cfm?Section=Sports_Safety&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=2653.

Mayo Foundation for Medical Education and Research. (2005). *Domestic violence toward women: Recognize the patterns and seek help.* Retrieved in 2007 from http://www.mayoclinic.com/health/domestic-violence/WO00044.

McAlister Groves, B. (2003). *Children who see too much: Lessons from the Child Witness to Violence Project*. Boston: Beacon Press.

Mertens, S. B. (2006). *Research summary: Adolescent health, wellness, and safety.* Westerville, OH: National Middle School Association. Retrieved in 2007 from http://www.nmsa.org/Research/ResearchSummaries/Health/tabid/267/Default.aspx.

Mihalic, S. F. & Aultman-Bettridge, T. (2004). A guide to effective school-based prevention programs. In W. L. Turk (Ed.), *Policing and School Crime*. Englewood Cliffs, NJ: Prentice Hall.

Mihalic, S., Fagan, A., Irwin, K., Ballard, D. & Elliott, D. (2004). *Blueprints for violence prevention*. Washington, DC: U.S. Department of Justice, Office of Justice Services, Office of Juvenile Justice and Delinquency Prevention.

Molidor, C. & Tolman, R. M. (1998). Gender and contextual factors in adolescent dating violence. *Violence Against Women*, *4*, 180–194.

Mollen, C. J., Fein, J. A., Localio, A. R. & Durbin, D. R. (2004). Characterization of interpersonal violence events involving young adolescent girls vs. events involving young adolescent boys. *Archives of Pediatric and Adolescent Medicine, 158*, 545–550. PMID: 15184217.

Moore, M. H., Petrie, C., Braga, A. & McLaughlin, B. L. (Eds.). (2002). *Deadly lessons: Understanding lethal school violence*. Washington, DC: Joseph Henry Press.

Nansel, T. R., Overpeck, M., Pilla, R. S., Ruan, W. J., Simons-Morton, B. & Scheidt, P. (2001). Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. *Journal of the American Medical Association, 285*(16), 2094–2100. PMID: 11311098.

National Center for Education Statistics. (2006). *Indicators of school crime and safety: 2006.* Washington, D.C.: Institute of Education Sciences, US. Department of Education. Retrieved in 2007 from http://nces.ed.gov/programs/crimeindicators/.

National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. (2003). *Injury fact book 2001–2002.* Retrieved in 2006 from http://www.cdc.gov/ncipc/fact_book/factbook.htm.

National Crime Prevention Council. (2006). *Bystanders can stop bullying.* Retrieved in 2007 from http://www.ncpc.org/parents/bystanders.php.

National Highway Traffic Safety Administration (NHTSA), U.S. Department of Transportation (2006). *Traffic safety facts 2005 data: Young drivers.* Washington, D.C. Available from: http://www-nrd.nhtsa.gov/pdf/nrd 30/NCSA/TSF2005/YoungDriversTSF05.pdf.

National Highway Traffic Safety Administration (NHTSA), Department of Transportation (2001). *Traffic safety facts 2000: Speeding*. Washington, DC: NHTSA. Retrieved in 2006 from www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2000/2000spdfacts.pdf.

National Highway Traffic Safety Administration, U.S. Department of Transportation. (2003). *Traffic safety facts 2002: Alcohol*. Washington, DC: NHTSA. Retrieved in 2006 from http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2002/2002alcfacts.pdf.

National Highway Traffic Safety Administration, U.S. Department of Transportation. (2003). *Traffic safety facts 2002: Children*. Washington, DC: NHTSA. Retrieved in 2006 from http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2002/2002chdfacts.pdf.

National Highway Traffic Safety Administration, U.S. Department of Transportation. (2003). *Traffic safety facts 2002: Young drivers*. Washington, DC: NHTSA. Retrieved in 2006 from http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2002/2002ydrfacts.pdf.

National Institute for Occupational Safety and Health. (2003). *Preventing deaths, injury and illnesses to young workers*: *NIOSH alert* (NIOSH Publication No. 2003-128). Washington, DC: U.S. Government Printing Office. Retrieved in 2006 from http://www.osha.gov/SLTC/teenworkers/links.html#Educators.

National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS). (2004). *Handout on health: Sports injuries.* Retrieved in 2007 from http://www.niams.nih.gov/hi/topics/sports_injuries/SportsInjuries.htm#ra_3

National SAFE KIDS Campaign. (2004). *Burn Injury fact sheet.* Washington, DC: NSKC. Retrieved in 2007 from http://www.preventinjury.org/PDFs/BURN_INJURY.pdf.

National SAFE KIDS Campaign. (2004). *Playground injury fact sheet.* Washington, DC: NSKC. Retrieved in 2007 from http://www.preventinjury.org/PDFs/PLAYGROUND_INJURY.pdf

National SAFE KIDS Campaign. (2004). *School injury fact sheet.* Washington, DC: NSKC. Retrieved in 2007 from http://www.preventinjury.org/PDFs/SCHOOL_INJURY.pdf.

National Telecommunications and Information Administration. (2003). *Children's Internet Protection Act: Study of technology protection measures in section 1703* (Report to Congress, Pub. L. 106-554). Washington, DC: U.S. Department of Commerce.

Nixon, M. K., Leadbeater, B. J., Jansson, M. & Banister, E. (2006). *Reporting of self injurious behaviour in a population based survey of adolescents and young adults.* Retrieved in 2007 from http://www.youth.society.uvic.ca/activities/research/cahr/pubs/SIB%20Poster%20%5B1%5D.5.ppt.pdf.

Olweus, D. (1993). *Bullying at school: What we know and what we can do*. Cambridge, MA: Blackwell Publishers.

Olweus, D., Limber, S. & Mihalic, S. (1999). *Blueprints for violence prevention, book nine: Bullying prevention program*. Boulder, CO: Center for the Study and Prevention of Violence.

Olweus, D. & Substance Abuse and Mental Health Services Administration. (2003). *Bullying is not a fact of life.* Center for Mental Health Services (CMHS), Substance Abuse and Mental Health Services Administration (SAMHSA), Department of Health and Human Services. Retrieved in 2007 from http://mentalhealth.samhsa.gov/publications/allpubs/SVP-0052/.

Perrotti, J. & Westheimer, K. (2002). *When the drama club is not enough: Lessons from the Safe Schools Program for Gay and Lesbian Students.* Boston: Beacon Press.

Phelan, K. J., Khoury, J., Kalkwarf, H. J. & Lanphear, B. P. (2001). Trends and patterns of playground injuries in United States children and adolescents. *Ambulatory Pediatrics, 1*(4), 227–233. PMID: 11888406.

Pickard, P. & Teen Research Unlimited. (2007). *Tech abuse in teen relationships study.* Liz Claiborne, Inc. Retrieved in 2007 from http://www.loveisnotabuse.com/pdf/06-208%20Tech%20Relationship%20Abuse%20TPL.pdf.

Posner, M. (2000). *Preventing school injuries: A comprehensive guide for school administrators, teachers, and staff.* Piscataway, NJ: Rutgers University Press.

Powell, E. C., Tanz, R. R., Uyeda, A., Gaffney, M. B. & Sheehan, K. M. (2000). Injury prevention education using pictorial information. *Pediatrics, 105*, 1–5.

Pratt, H. D. & Greydanus, D. E. (2000). Adolescent violence: Concepts for a new millennium. *Adolescent Medicine, 11*(1), 103–125. Review. PMID: 10640341.

Purington, A. & Whitlock, J. (2004). Self-injury fact sheet. *Research Facts and Findings.* ACT for Youth Upstate Center of Excellence. Retrieved in 2007 from http://www.actforyouth.net/documents/fACTS_Aug04.pdf.

Purvis, J. M. & Hirsch, S. A. (2003). Playground injury prevention. *Clinical Orthopedics, 409,* 11–19. Review. PMID: 12671480.

Ramirez, M., Peek-Asa, C. & Kraus, J. F. (2004). Disability and risk of school related injury. *Injury Prevention, 10,* 21–26.

Resnick, M.D., Ireland, M. & Borowsky, I. (2004). Youth violence perpetration: what protects? What predicts? Findings from the National Longitudinal Study of Adolescent Health. *Journal of Adolescent Health , 35:*424, e1–e10.

Rigby, K. (2001). Health consequences of bullying and its prevention in schools. In J. Juvonen & S. Graham (Eds.), *Peer harassment in school: The plight of the vulnerable and victimized*. New York: Guilford Press.

Roberts, T., Klien, J. & Fisher, S. (2003). Longitudinal effect of intimate partner abuse on high-risk behavior among adolescents. *Archives of Pediatric and Adolescent Medicine, 15,* 875–881.

Ross, S. & Heath, N. (2002). A study of the frequency of self-mutilation in a community sample of adolescents. *Journal of Youth and Adolescence, 31*(1), 66–77.

Rossman, R. (1998). Descartes' error and posttraumatic stress disorder: Cognition and emotion in children who are exposed to parental violence. In G. W. Holden, R. A. Gefner & E. N. Jouriles. (1998). *Children exposed to marital violence: Theory, research, and applied issues*. Washington, DC: American Psychological Association.

Safe Kids Worldwide. (2006). *Facts about injuries to children riding bicycles.* Retrieved in 2007 from http://www.usa.safekids.org/content_documents/Bike_facts.pdf.

Safe Kids Worldwide. (2006). *Facts about injuries to children at school.* Retrieved in 2007 from http://www.usa.safekids.org/content_documents/School_facts.pdf

Salib, E. A., Cyran, S. E., Cilley, R. E., Maron, B. J. & Thomas, N. J. (2005). Efficacy of bystander cardiopulmonary resuscitation and out-of-hospital automated external defibrillation as life-saving therapy in Commotio Cordis. *Journal of Pediatrics, 147,* 863–866.

Saluja, G., Brenner, R., Morrongiello, B. A., Haynie, D., Rivera, M. & Cheng, T. L. (2004). The role of supervision in child injury risk: Definition, conceptual and measurement issues. *Injury Control and Safety Promotion, 11*(1), 17–22.

Schieber, R., Gilchrist, J. & Sleet, D. (2000). Legislative and regulatory strategies to reduce childhood unintentional injuries. *The Future of Children, 10*(1), 111–136.

Schulte, P. A., Stephenson, C. M., Okun, A. H., Palassis, J. & Biddle, E. (2005). Integrating occupational safety and health information into vocational and technical education and other workforce preparation programs. *American Journal of Public Health, 95*(3), 404–411. PMID: 15727967.

Shields, B. J. & Smith, G. A. (2006). Cheerleading-related injuries to children 5 to 18 years of age: United States, 1990–2002. *Pediatrics, 117*(1), 122–129.

Shore, R. (2005). Reducing the teen death rate. *KIDS COUNT Indicator Brief.* Baltirmore, MD: The Annie E. Casey Foundation. Retrieved in 2007 from http://www.aecf.org/kidscount/sld/auxiliary/briefs/teendeathupdated.pdf.

Shults, R. A., Elder, R. W., Sleet, D. A., Nichols, J. L., Alao, M. O., Carande-Kulis, V. G., et al. (2001). Task force on community preventive services: Reviews of evidence regarding interventions to reduce alcohol-impaired driving. *American Journal of Preventive Medicine, 21*(4 Suppl.), 4, 66–88. PMID: 11691562.

Silverman, J. G., Raj, A., Mucci, L. A. & Hathaway, J. E. (2001). Dating violence against adolescent girls and associated substance use, unhealthy weight control, sexual risk behavior, pregnancy, and suicidality. *Journal of the American Medical Association, 286*, 572–579. PMID: 11476659.

Simeon, D. & Hollander, E. (Eds.). (2001). *Self injurious behaviors: Assessment and treatment.* Washington, DC: American Psychiatric Press.

Small, M. L., Everett Jones, S. E., Barrios, L. C., Crossett, L. S., Dahlberg, L. L., Albuquerque, M. S., et al. (2001). School policy and environment: Results from the school health policies and programs study 2000. *Journal of School Health, 71*(7), 325–334. PMID: 11586875.

Smith-Khuri, E., Iachan, R., Scheidt, P. C., Overpeck, M. D., Gabhainn, S. N., Pickett, W. & Harel, Y. (2004). A cross-national study of violence-related behaviors in adolescents. *Archives of Pediatric and Adolescent Medicine, 158,* 539–544. PMID: 15184216.

Somers, C. L. & Gizzi, T. J. (2001). Predicting adolescents' risky behaviors: The influence of future orientation, school involvement, and school attachment. *Adolescent & Family Health, 1*(2).

Spaccarelli, S., Coatsworth, J. D. & Bowden, B. S. (1995). Exposure to serious family violence among incarcerated boys: Its association with violent offending and potential mediating variables. *Violence and Victims, 10,* 163–182.

Spady, D. W., Saunders, D. L., Schopflocher, D. P. & Svenson, L. W. (2004). Patterns of injury in children: A population-based approach. *Pediatrics, 113,* 522–529. PMID: 14993544.

Spicer, R. S., Young, X. J., Sheppard, M. A., Olson, L. M. & Miller, T. R. (2003). *American Journal of Health Education, 34*(5 Suppl), s13–s17.

Stanley, B., Gameroff, M. J., Michalsen, V. & Mann, J. J. (2001). Are suicide attempters who self-mutilate a unique population? *American Journal of Psychiatry, 158,* 427–432.

Stein, N. (2001). Gender violence in elementary and secondary schools. *Illinois Coalition Against Sexual Assault Newsletter,* Fall.

Teenage Research Unlimited for Liz Claiborne, Inc. (2007). *Technology & teen dating abuse survey 2007.* Retrieved in 2007 from http://www.loveisnotabuse.com/surveyresults_2007mstr.htm.

Teen Research Unlimited for Liz Claiborne, Inc. (2006). *Teen relationship abuse survey.* Retrieved in 2007 fromhttp://www.loveisnotabuse.com/pdf/Liz%20Claiborne%20Mar%2006%20Relationship%20Abuse%20Hotsheet.pdf.

Teicher, S. (2007, February 13). Teens often use cellphones for stalking more than safety. *Christian Science Monitor*.

Thompkins, D. E. (2000). School violence: Gangs and a culture of fear." *ANNALS of the American Academy of Political and Social Science, 567,* 54−71.

Thompson, N. & McClintock, H. (2000). *Demonstrating your program's worth: A primer on evaluation for programs to prevent unintentional injury* (2nd Ed.). Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

Tinsworth, D. & McDonald, J. (2001). *Special study: Injuries and deaths associated with children's playground equipment.* Washington, DC: U.S. Consumer Product Safety Commission.

Towner, E., Dowswell, T. & Jarvis, S. (2001). Updating the evidence: A systematic review of what works in preventing childhood unintentional injuries (Part 1). *Injury Prevention, 7,* 161–164.

Twemlow, S. W., Fonagy, P., Sacco, F. C., Gies, M. L., Evans, R. & Ewbank, R. (2001). Creating a peaceful school learning environment: A controlled study of an elementary school intervention to reduce violence. *American Journal of Psychiatry, 158*(5), 808–811. PMID: 11329408.

U.S. Department of Education, Office of Civil Rights. (2001). *Revised sexual harassment guidance: Harassment of students by school employees, other students or third parties, Title IX.* Retrieved in 2006 from http://www.ed.gov/about/offices/list/ocr/docs/shguide.html.

U.S. Department of Education and National Association of Attorneys General. (1999). *Protecting students from harassment and hate crime: A guide for schools.* Washington, DC: Author. Retrieved in 2006 from http://www.ed.gov/pubs/Harassment/.

U.S. Department of Health and Human Services. (2000). *Healthy People 2010* (2nd ed.) with *Understanding and Improving Health and Objectives for Improving Health*. 2 vols. Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (2001). *Youth violence: A report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, Centers for Disease Control, National Center for Injury Prevention and Control; National Institutes of Health, National Institute of Mental Health; Substance Abuse and Mental Health Services Administration, Center for Mental Health Services. Retrieved in 2006 from http://www.surgeongeneral.gov/library/youthviolence.

U.S. Department of Health and Human Services. (1999). *The Surgeon General's call to action to prevent suicide*. Washington, DC: Department of Health and Human Services. Retrieved in 2006 from http://www.surgeongeneral.gov/library/calltoaction/calltoaction.htm.

U.S. Fire Administration (2004). The fire risk to children, *Topical Fire Research Series, 4*(8). Retrieved in 2007 from http://www.usfa.dhs.gov/downloads/pdf/tfrs/v4i8.pdf.

U.S. Secret Service and U.S. Department of Education. (2002). *Threat assessment in schools: A guide to managing threatening situations and to creating safe school climates*. Retrieved in 2006 from http://www.ed.gov/admins/lead/safety/threatassessmentguide.pdf.

Wagman Borowsky, I. & Ireland, M. (2004). Predictors of future fight-related injury among adolescents. *Pediatrics, 113,* 530–536.

Waitt Institute for Violence Prevention. (2007). *Stopping the cycle of abuse: Defining domestic violence.* Retrieved in 2007 from http://waittinstitute.org/WIVP/projects/violence_prevention_define.html.

Wekerle, C. & Wolfe, D. A. (1999). Dating violence in mid-adolescence: Theory, significance, and emerging prevention initiatives. *Clinical Psychology Review, 19*(4), 435–456.

Wilde, M. (2005). *Stopping school violence: The latest trends*. Retrieved in 2006 from Great Schools website: http://www.greatschools.net/cgi-bin/showarticle/ma/309/?page=1.

Williams, A .F., McCartt, A. T. & Geary, L. (2003). Seatbelt use by high school students. *Injury Prevention 9,* 25-28.

Williams, V. L. & Brake, D. L. (1998). *Do the right thing: Understanding, addressing and preventing sexual harassment in schools.* Washington, DC: National Women's Law Center.

Wolfe, D. A. & Jaffe, P. G. (2003). *Prevention of domestic violence and sexual assault.* National Resource Center on Domestic Violence. Retrieved in 2007 from http://www.vawnet.org/DomesticViolence/Research/VAWnetDocs/AR_Prevention.php.

Wolfe, D. A., Wekerle, C., Reitzel, D. & Gough, R. (1995). *Strategies to address violence in the lives of high risk youth*. In E. Peled, P. G. Jaffe, and J. L. Edleson (Eds.), *Ending the cycle of violence: Community responses to children of battered women.* New York: Sage Publications.

Wooden, W. S. (1995). Skinheads: Teenagers and hate crimes. In S. W. S. Wooden & R. Blazak (Eds.), *Renegade kids, suburban outlaws: From youth culture to delinquency.* Belmont, CA: Wadsworth.

Zador, P. L., Krawchuk, S. A. & Voas, R. B. (2000). *Relative risk of fatal crash involvement by BAC, age and gender.* Washington, DC: National Highway Transportation Safety Administration (NHTSA), U.S. Department of Transportation.

Note: Articles with PMID number have been indexed by PubMed for MEDLINE.

EXHIBITS

Exhibit 13-1 Tools for Evaluating the Social and Emotional Climate of Your School

Exhibit 13-2 Massachusetts Child Labor Laws

Exhibit 13-3 Teens At Work Fact Sheet

Exhibit 13-4 Identifying Students at Risk for Violent Behavior: A Checklist of Early Warning Signs

Exhibit 13-1 Tools for Evaluating the Social and Emotional Climate of Your School

Below are tools for evaluating the social and emotional climate of your school recommended by the Collaborative for Academic, Social, and Emotional Learning (CASEL).

Annenberg Institute School Improvement Tools

The Annenberg Institute website now includes a school improvement section with tools and step-by-step guides to help users examine specific school-improvement concerns. Tools include observation protocols, focus group samples and questions, surveys, and questionnaires. They are organized by key focus areas: leadership; community connections; professional development; school organization; school climate; student supports; and comprehensive school improvement. Currently featured is a "student voice" tool from the Northwest Regional Laboratory to help engage students in survey analysis. All of these school improvement tools and guides can be downloaded at http://www.annenberginstitute.org/tools/index.html.

California Healthy Kids Survey

The Healthy Kids Survey (HKS) is a comprehensive and customizable youth self-report data collection system that provides essential and reliable health risk assessment and resilience information to schools, districts, and communities. Targeted at grades 5–12, the HKS enables schools and communities to collect and analyze valuable data regarding local youth health risks, assets, and behaviors. The student self-report Youth Development and Resiliency survey module includes questions related to school climate and connectedness. In addition, a staff school climate survey has been developed recently. The purpose of the survey is to obtain "staff perceptions of student behavior and attitudes, school programs and policies, and the overall school climate as they relate to student well-being and learning." All of the surveys can be downloaded in Spanish and English at http://www.wested.org/pub/docs/chks_surveys_summary.html. The staff school climate survey is the last one listed on the HKS page.

School As a Caring Community Profile — II

This profile is a 43-question survey for the "4th and 5th Rs." The first 26 items relate to perceptions of students; the final 17 items relate to perceptions of adults. The survey is available at http://www.cortland.edu/c4n5rs/sccp-II.asp (the PDF is at the bottom of the page).

World Health Organization's Psycho-Social Environment Profile

As part of its Information Series on School Health, WHO has created an extensive school social-emotional climate survey that is easy to administer, fill out, and score. The document is entitled "Creating an Environment for Emotional and Social Well-Being." In addition to the survey instrument, it includes a short background section that summarizes research demonstrating the benefits schools gain from attending to climate issues, gives suggestions on how the survey should be administered, specifies how the data can be used to improve school climate, and includes worksheets for leading discussions on each of the 7 areas of climate assessed. The profile is available free of charge at http://www.who.int/school_youth_health/media/en/sch_childfriendly_03_v2.pdf.

Wisconsin School Climate Survey

The Wisconsin Successful Schools initiative has posted student and staff school climate surveys on its website as part of its school improvement project. Surveys are available at http://www.dpi.state.wi.us/sig/improvement/process.html. In addition to the climate surveys, there are the "characteristics of successful schools" surveys. They include surveys on school vision, leadership, school family partnerships, and SEL-related standards.

Permission to reprint: The Collaborative for Academic, Social, and Emotional Learning (CASEL). From the book: Devaney, E., O'Brien, M. U., Resnik, H., Keister, S. & Weissberg, R. P. (2006). *Sustainable schoolwide social and emotional learning (SEL): Implementation guide and toolkit.* Chicago: Collaborative for Academic, Social, and Emotional Learning (CASEL).

Exhibit 13-2 Massachusetts Child Labor Laws

Updated March 2007

This is a list of the child labor laws applicable in Massachusetts. It reflects changes in the State child labor laws that took effect on January 3, 2007. It also provides updated information on the work permit application process.

Hazardous Orders

Persons under 14 may not work: Exceptions include working as news carriers, on farms, and in entertainment (with a special permit).

Persons under 16 years old may *NOT*:

- Operate power-driven machinery (except office machines or machines in retail or food service not otherwise prohibited)
- Cook (except on electric or gas grills that do not have open flames)
- Operate fryolators, rotisseries, NEICO broilers, or pressure cookers
- Operate, clean or repair power-driven food slicers, grinders or choppers
- Perform any baking activities
- Operate microwave ovens (except to heat food in microwave ovens with a maximum capacity of 140 degrees Fahrenheit)
- Clean kitchen surfaces that are hotter than 100 degrees Fahrenheit
- Filter, transport, or dispose of cooking oil or grease hotter than 100 degrees Fahrenheit
- Work in freezers or meat coolers
- Work in a manufacturing facility (e.g., a factory)
- Work on ladders or scaffolds
- Work in garages, except dispensing gas and oil
- Work in brick or lumber yards
- Work in amusement places (e.g., pool or billiard room, or bowling alley)
- Work in barber shops
- Work in construction, transportation, communications, or public utilities (except doing clerical work away from heavy machinery off the job-site)
- Work in warehouses (except doing clerical work)
- Load or unload trucks, railroad cars, or conveyors
- Wash windows in public or commercial buildings if the window sill is more than 10 feet above the ground
- Work doing laundry in a commercial laundry or dry cleaning establishment
- Work as a public messenger
- Work at processing operations (e.g., in meat, fish, or poultry processing or cracking nuts, bulk or mass mailing)
- Work around boilers or in engine rooms
- Do industrial homework
- Work with dangerous electrical machinery or appliances
- Work that is determined by the Massachusetts Attorney General to be dangerous to the health and well-being of minors
- ***Work in any of the occupations or tasks prohibited for persons under age 18***

Persons under 18 years old may *NOT*:

- Drive a vehicle or forklift (except golf carts in certain circumstances)
- Operate, clean or repair power-driven meat slicers, grinders or choppers
- Operate, clean or repair power-driven bakery machines
- Work 30 feet or more above ground or water
- Handle, serve, or sell alcoholic beverages
- Use circular or band saws, or guillotine shears
- Manufacture or store explosives
- Work in excavation, wrecking, demolition, or shipbreaking
- Work in logging, sawmilling, or mining
- Work slaughtering, packing, or processing meat
- Work in railway operations
- Work in roofing or on or about a roof
- Work in foundries or around blast furnaces
- Work manufacturing phosphorus or phosphorus matches

- Use power-driven woodworking machines
- Use hoisting machines
- Operate paper balers, paper box compactors, or other power-driven paper products machines
- Use power-driven metal-forming, punching, or shearing machines
- Use buffing or polishing equipment
- Manufacture brick, tile, or kindred products
- Work where they are exposed to radioactive substances
- Work as a firefighter or engineer on a boat
- Oil or clean hazardous machinery in motion
- Work in any job requiring the possession or use of a firearm

Legal Work Hours for Teens in Massachusetts

Note: After 8 pm, all minors must have the direct and immediate supervision of an adult supervisor who is located in the workplace and is reasonably accessible to the minor, unless the minor works at a kiosk, cart or stand in the common area of an enclosed shopping mall that has security from 8:00 pm until the mall is closed to the public.

14 and 15 Year Olds

Work Hours

- Only between 7:00 am and 7:00 pm during the school year
- Not during school hours
- Only between 7:00 am and 9:00 pm during the summer (from July 1 through Labor Day)

Maximum Hours When School *Is* In Session

- 18 hours a week
- 3 hours a day on school days
- 8 hours a day on weekends and holidays
- 6 days a week

Maximum Hours When School *Is Not* In Session

- 40 hours a week
- 8 hours a day
- 6 days a week

16 and 17 Year Olds

Work Hours

- Only between 6:00 am and 10:00 pm (on nights preceding a regularly scheduled school day)
- If the establishment stops serving clients or customers at 10:00 pm, the minor may be employed until 10:15 pm
- Only between 6:00 am and 11:30 pm (on nights *not* preceding a regularly scheduled school day)
- Exception for restaurants and racetracks: Only between 6:00 am and 12:00 midnight (on nights *not* preceding a regularly scheduled school day)

Maximum Hours of Work – Whether or Not School is in Session

- 48 hours a week
- 9 hours a day
- 6 days a week

Work Permit Process

There is now a single application and permit process for all teen workers ages 14 through 17. (Prior to January 3, 2007, Massachusetts law required “work permits” for 14- and 15-year-olds, and “educational certificates” for 16- and 17-year-olds.) Fourteen- and 15-year-olds must have a doctor complete the “Physician’s Certificate of Health” section of the work permit. This Certificate of Health must be signed within the previous 12 months of the date that the application is submitted. Parents now have to sign the

work permit applications, which include a summary of the Child Labor Laws. Teens may also now obtain their work permits either in the school districts where they live *or* where they go to school.

Additionally, under the new law, 17-year-olds with documented proof of a high school diploma or the equivalent, who complete a work permit application, are entitled to a work permit without authorization from the Superintendent. The new Employment Permit provides a box to check that indicates that a signature by the Superintendent or authorized school official is not necessary for these individuals.

Resources for More Information

Questions about wages or child labor laws: Massachusetts Office of the Attorney General, Fair Labor and Business Practices Division, 617-727-3465, http://www.ago.state.ma.us; U.S. Department of Labor, Wage and Hour Division, 617-624-6700, http://www.dol.gov/esa/whd
Questions about workers' compensation: Massachusetts Department of Industrial Accidents, 800-323-3249 x470, http://www.mass.gov/dia
Questions about health and safety: U.S. Department of Labor, Occupational Safety & Health Administration (OSHA); Methuen Office 617-565-8110, Braintree Office 617-565-6924, Springfield Office 413-785-0123, http://www.osha.gov

Note: This exhibit is a compilation of state and federal child labor laws. The most protective laws are presented here and apply to all employers of teens including parents who may employ their children. There are additional regulations and some exceptions for employers in agricultural industries.

Massachusetts Department of Public Health, Occupational Health Surveillance Program, *Teens at Work* Injury Surveillance and Prevention Project. 617-624-5632; http://www.mass.gov/dph/bhsre/ohsp/ohsp.htm.

Exhibit 13-3 Teens at Work Fact Sheet

Large numbers of teens are working afternoons, evenings, weekends, and summers. Teens are also working during school hours, in jobs secured through school in cooperative education, school-to-career, internships, and career technical education programs. Learning to recognize and avoid potential job hazards is an important skill for adolescents to develop. Equally important is learning about their rights and responsibilities in the workplace. A goal of Massachusetts schools and communities should be guiding adolescents and parents/guardians toward choosing safe and meaningful working experiences that do not detract from school.

School and Community Goals:

- provide teachers, staff, parents, and teens with education about choosing appropriate and safe work;
- ensure schools have the necessary training to issue work permits in accordance with child labor laws;
- provide training to teachers, staff, and students on recognizing and preventing job hazards and on rights and responsibilities under the child labor laws and workplace health and safety regulations;
- report cases of work-related injuries to teens less than 18 years of age immediately to DPH's Occupational Health Surveillance Program; and
- work with employers of teens to ensure compliance with child labor laws and a safe and healthful workplace for all employees.

MANDATED REPORTING: Under 105 CMR 300.180, all health care providers must report all serious work-related injuries to persons under 18 years of age to DPH.

CHILD LABOR LAWS: The state child labor laws can be found in the General Laws of Massachusetts Chapter 149: Labor and Industries. The federal child labor laws can be found in 29 CFR Part 570. See Exhibit 13-2 for a compilation of the most protective state and federal child labor laws.

RESOURCES: Curricula, fact sheets, videos, and educational materials are available from the following agencies: DPH Occupational Health Surveillance Program, Massachusetts Office of the Attorney General, U.S. Department of Labor Wage and Hour Division, Massachusetts Division of Occupational Safety, National Institute of Occupational Safety and Health, Young Workers Safety Resource Center, and the Occupational Safety and Health Administration.

FOR MORE INFORMATION: Occupational Health Surveillance Program, DPH
Phone: 617-624-5632; Website: http://www.mass.gov/dph/bhsre/ohsp/ohsp.htm

Exhibit 13-4 Identifying Students at Risk for Violent Behavior: A Checklist of Early Warning Signs

Because violence continues to impact our schools, we should, in a sense, consider all of our students "at risk." The purpose of this infosheet is to assist parents/guardians and school personnel in identifying children and adolescents who are at *greater risk* for engaging in violent behavior.

The following checklist of early warning signs will facilitate identification of students who may be in need of intervention. The greater the number of items that are checked, the greater the potential for violent acting-out behavior. For help, turn to individuals who regularly work with at-risk children and adolescents — professionals in the fields of education, law enforcement, social services, medicine, and mental health. At-risk children and adolescents may:

- express self-destructive or homicidal ideation;
- express feelings of hopelessness;
- have a history of self-destructive behavior;
- give away possessions;
- articulate specific plans to harm self and/or others;
- appear withdrawn;
- engage in "bullying" other children;
- evidence significant changes in mood;
- have difficulty with impulse control;
- experience sleep and eating disturbances;
- evidence significant changes in behavior;
- have experienced prior trauma/tragedy;
- engage in substance abuse;
- have been/be victims of child abuse;
- become involved with gangs;
- have experienced a significant loss;
- have been tormented and/or teased by others;
- evidence a preoccupation with fighting;
- evidence a preoccupation with television;
- have a history of antisocial behavior;
- enjoy programs/movies with violent themes;
- evidence a low tolerance for frustration;
- evidence a preoccupation with games with violent themes;
- externalize blame for their difficulties;
- evidence a preoccupation with guns and other weapons;
- have harmed small animals;
- have access to a firearm;
- have engaged in fire-setting;
- have brought a weapon to school;
- evidence persistent bedwetting;
- evidence frequent disciplinary problems;
- appear/acknowledge feeling depressed;
- exhibit poor academic performance;
- talk about not being around; and
- have been frequently truant from school.

Reprinted from *A Practical Guide for Crisis Response in Our Schools,* © 2003 by the American Academy of Experts in Traumatic Stress, 368 Veterans Memorial Highway, Commack NY 11725, tel. 631-543-2217, fax 631-543-6977, http://www.aaets.org, http://www.schoolcrisisresponse.com.

Chapter 14

SUBSTANCE ABUSE AND ADDICTIVE BEHAVIOR

Susceptibility of School-Age Youth to Addictions

Legal/Regulatory Issues

Policy Implications/Strategies for Schools

Specific Agents

Summary

Resources: Curricula/Teaching Tools and Registries of Effective Programs

Resources: National Agencies and Organizations (General)

Resources: Massachusetts Agencies and Organizations (General)

Resources: Regional Agencies and Organizations (General)

Resources: Specific Topics

Resources: Treatment/Post-Treatment

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 14

SUBSTANCE ABUSE AND ADDICTIVE BEHAVIOR

This chapter discusses harmful addictive activities in which many school-age children and youth engage. These activities are grouped together in the same chapter because initiation of one risky activity is often linked with initiation of others. For example, the 2002 to 2004 National Surveys on Drug Use & Health, conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA), found that well over half (59.7%) of children aged 12–17 who had recently begun using inhalants had a history of cigarette smoking. Furthermore, more than two-thirds (67.6%) of this group had previously used alcohol, 42.4% had previously used marijuana, and more than one-third (35.9%) had used all 3 substances (cigarettes, alcohol, and marijuana) before they used inhalants.

Similarly, current research suggests that the risk factors and protective factors for substance abuse and gambling are interrelated. Researchers, seeing some common causal factors between the two behaviors, recommend developing prevention strategies aimed at these common factors (Winters & Anderson, 2000; Vitaro et al., 2001).

SUSCEPTIBILITY OF SCHOOL-AGE YOUTH TO ADDICTIONS

Adolescents are more susceptible than any other age group to develop addictions. Although it is likely that an individual's genetic makeup plays a part in determining the threshold of exposure required to pass from experimentation to addiction, researchers now believe that the same neurodevelopmental factors that predispose teens to seek out new experiences — incomplete development of brain regions related to adult motivation, impulse control, and inhibition — also make them more vulnerable to substance abuse, risky behavior, and addiction. Not only is the area of the brain that controls judgment the last to be fully developed, it is also the same area in which addictions are formed. It is now believed that the malleability of the adolescent brain makes the process of developing substance dependencies both faster and more permanent (Chambers & Potenza, 2003; Chambers, Taylor & Potenza, 2003; Winters, 2004).

At least three other important factors contribute to adolescents' susceptibility to risk behaviors as well as complicate the task of deterring them:

- the tendency of this age group to underestimate the dangers of substance abuse and potentially addictive behaviors such as gambling;
- the perception among teens and young adults that risky behaviors such as drinking, marijuana use, cigarette smoking, and gambling are associated with popularity, a perception that persists even when risks are understood (Annenberg Public Policy Center, Institute for Adolescent Risk Communication, 2002); and
- the likelihood that differences in the way adolescents' brains process information, which make them less able to accurately "read" and understand facial expressions (Yurgelun-Todd, 2002), may make them less likely to heed logical arguments against dangerous

substances or to understand the motivations of adults who are delivering cautionary messages (ACT for Youth, 2002).

Recent research suggests that girls may be at particular risk both for substance abuse and for adverse physical and psychological consequences (Office of National Drug Control Policy, 2006). Key findings related to the susceptibility of girls include:

- Depression, anxiety, excessive concerns about weight and appearance, risky sexual behavior, early puberty, psychiatric or conduct disorders, and physical or sexual abuse are key risk factors (CASA, 2003).
- Girls are especially susceptible to peer pressure related to drinking (Donovan, 1996).
- Since 2002, more teenage girls than boys have begun using marijuana. And in 2004, more girls than boys started using alcohol and cigarettes. (SAMHSA, National Survey on Drug Use & Health (NSDUH) ,2002, 2003, 2004, 2005).
- Adolescent girls surpass boys in abuse of prescription drugs (SAMHSA, NSDUH, 2006).
- Girls aged 14–15 who use marijuana daily are 5 times more likely to face depression at age 21 (Patton et al., 2004).
- Girls may develop symptoms of nicotine addiction faster than boys (DiFranza et al., 2002).
- Adolescent girls who consume even moderate amounts of alcohol may experience disrupted growth and puberty (National Institute on Alcohol Abuse and Alcoholism, 2004).

The age of initiation of substance use and gambling is a significant factor in addiction. For example, the earlier a person starts drinking, the higher the likelihood that he or she will experience alcohol abuse or dependency as an adult. Adults who report that they first used alcohol before age 15 are more than 5 times as likely to report past-year alcohol dependence or abuse than persons who first used alcohol at age 21 or older (SAMHSA, NSDUH, 2004). The inverse is also true: Every year use of a substance is delayed, the risk of developing a substance abuse disorder decreases concurrently (Winters, 2004).

LEGAL/REGULATORY ISSUES

The degrees of regulation of risk activities may be categorized as follows:

- Some activities are illegal for everyone, regardless of age. These include the use of illicit drugs and also illegal types of gambling.
- Some activities are legal for adults but not for minors. Minors may not buy alcohol and tobacco, and adults may not sell these to minors (although parents may furnish these substances to their minor children, presumably while supervising their use). Minors may not participate in even legalized gambling.
- Some substances may be used legally at any age for their intended purpose but not otherwise. Legal medications, whether prescription or over-the-counter, may not be abused. Substances with volatile solvents, whether medicinal or industrial, may be used as directed, but it is illegal in Massachusetts to possess, buy, sell, or inhale them with the intent of causing intoxication.

Laws Pertaining to School Premises and School-Related Events

Alcohol and Drugs

The use of alcohol and other drugs by students is strictly forbidden on school grounds, as is the unlawful possession, use, or distribution of illicit drugs and alcohol on school property or at any school sponsored activities by either students or school employees.

These prohibitions originate in a U.S. Department of Education regulation and the Drug-Free Schools Certification regulations, in addition to numerous state and local ordinances.

In Massachusetts, it is illegal for anyone under the age of 21 to purchase or be in possession of an alcoholic beverage (M.G.L. c.138, s.34A). Additionally, M.G.L. c.272, s.40A prohibits alcohol on school premises and M.G.L. c.71, s.37H states that any student who is found in possession of a controlled substance (such as marijuana, cocaine, or heroin) on school premises or at school-sponsored or school-related events, including athletic games, may be subject to expulsion from the school or school district at the discretion of the school district. When a student is expelled under the provisions of this section, no school or school district within the Commonwealth is required to admit or provide educational services to that student.

Massachusetts imposes criminal penalties for the possession and/or distribution of controlled substances, or drugs, without valid authorization, with penalties varying as to the type of drug. Sale and possession of “drug paraphernalia” is illegal in Massachusetts. Under federal law, penalties may be doubled when a person at least 18 years old distributes drugs within 1,000 feet of a public or private elementary or secondary school.

Tobacco

A federal law, the Pro-Children Act of 1994, bans smoking in kindergarten, elementary, and secondary educational school buildings, or library services to children under the age of 18 years, when federal funds are used in the school (20 U.S.C. s.6083(a)). M.G.L. c.90, s.7B(10) prohibits smoking on school buses. Under M.G.L. c.71, s.37H, school districts are required to publish policies prohibiting the use of any tobacco products on school property: “Said policies shall prohibit the use of any tobacco products within the school buildings, the school facilities, or on the school grounds or on school buses by any individual, including school personnel.”

It is a violation of law (M.G.L. c.71, s.2A) for any student enrolled in either primary or secondary public schools in the Commonwealth to use tobacco products of any type on school grounds during normal school hours. The law also states: “Each school committee shall establish a policy dealing with students who violate this law. This policy may include, but not be limited to, mandatory education classes on the hazards of tobacco use.”

The Smoke-Free Workplace Law, M.G.L. c.270, s.22(b)(2), prohibits smoking in all enclosed workplaces, including public and private schools. (See Exhibit 14-1 for detailed information on this law.) In addition, the law commonly referred to as the Education Reform Act (M.G.L. c.71, ss.2A, 37H) requires that all Massachusetts public schools prohibit the use of tobacco products of any kind, including smokeless tobacco, on school grounds, on school buses, and at school-sponsored events. The outside grounds of private schools are not addressed in this law. The superintendent for the school district is responsible for publishing the district’s policies prohibiting tobacco use. The principal of each school building is responsible for enforcing the school district’s policies. (See Exhibit 14-1 for more detailed information on this law.)

Other Laws/Regulations Concerning Alcohol

M.G.L. c.138, s.34 is the primary statute governing purchase and possession of alcoholic beverages by minors. In addition to a general prohibition on purchase and possession by anyone under 21, this law contains many specific provisions that apply to minors and to adults providing alcohol to minors.

Section 34 prohibits the sale of alcohol to minors by licensed establishments, as well as the procuring of liquor for minors and furnishing liquor to minors other than one’s own children or grandchildren. Penalties for violations are fines of up to $2,000 and a year in prison.

Section 34A covers purchases of, or attempts to purchase, alcohol:

> "Any person under twenty-one years of age who purchases or attempts to purchase alcoholic beverages or alcohol, or makes arrangements with any person to purchase or in any way procure such beverages, or who willfully misrepresents his age, or in any way alters, defaces or otherwise falsifies his identification offered as proof of age, with the intent of purchasing alcoholic beverages, either for his own use or for the use of any other person shall be punished by a fine of three hundred dollars and whoever knowingly makes a false statement as to the age of a person who is under twenty-one years of age in order to procure a sale or delivery of such beverages or alcohol to such person under twenty-one years of age, either for the use of the person under twenty-one years of age or for the use of some other person, and whoever induces a person under twenty-one years of age to make a false statement as to his age in order to procure a sale or delivery of such beverages or alcohol to such person under twenty-one years of age, shall be punished by a fine of three hundred dollars. A conviction of a violation of this section shall be reported forthwith to the registrar of motor vehicles by the court. Upon receipt of such notice the registrar shall thereupon suspend for 180 days the defendant's license or right to operate a motor vehicle."
>
> If a licensee is charged with serving a person under the age of 21, written notice of the allegation shall be sent to the parent or guardian of the underage patron.

Section 34C covers possession or transportation of alcohol by minors in a motor vehicle:

> "Whoever, being under twenty-one years of age and not accompanied by a parent or legal guardian, knowingly possesses, transports or carries on his person, any alcohol or alcoholic beverages, shall be punished by a fine of not more than fifty dollars for the first offense and not more than one hundred and fifty dollars for a second or subsequent offense; provided, however, that this section shall not apply to a person between the ages of eighteen and twenty-one who knowingly possesses, transports or carries on his person, alcohol or alcoholic beverages in the course of his employment. A police officer may arrest without a warrant any person who violates this section. A conviction of a violation of this section shall be reported forthwith to the registrar of motor vehicles by the court, and said registrar shall thereupon suspend for a period of ninety days the license of such person to operate a motor vehicle."

Other Laws/Regulations Concerning Tobacco

In Massachusetts, tobacco products may not be sold or given (by anyone other than a parent or guardian) to any individual under 18 years of age (M.G.L. c.270, s.6). It is also illegal to sell cigarette rolling papers to an individual under 18 (M.G.L. c.270, s.6A).

Other Laws/Regulations Concerning Drugs

Inhalants

M.G.L. c.270, s.18 forbids intentionally smelling or inhaling *"the fumes of any substance having the property of releasing toxic vapors, for the purpose of causing a condition of intoxication, euphoria, excitement, exhilaration, stupefaction, or dulled senses or nervous system."* It also outlaws possessing, buying, or selling any such substance for the purpose of violating, or aiding another to violate, this section. Punishment for violating the provisions of this section can be a fine of $200 or imprisonment for not more than 6 months, or both.

Anabolic Steroids

The federal Anabolic Steroid Control Act of 2004, effective January 20, 2005, broadened the definition of steroids to include both steroids and steroid precursors (such as “andro”) in the same legal class (Schedule III) as barbiturates, LSD precursors, veterinary tranquilizers, and narcotic painkillers. Simple possession is a federal offense punishable by up to 1 year in prison and/or a minimum fine of $1,000 for a first offense. Selling steroids, or possessing them with intent to sell, is a federal felony punishable by up to 5 years in prison and/or a $250,000 fine for a first offense.

Sports Regulations

In addition to state law, use of alcohol, tobacco, and other illicit drugs is addressed by regulations governing school sports. The Massachusetts Interscholastic Athletic Association (MIAA) Coaches’ Code of Ethics states: “The coach shall take an active role in the prevention of drug, alcohol, and tobacco abuse, and under no circumstances should authorize their use.” In addition, in its *Handbook of Rules and Regulations Governing Athletics (Bluebook),* MIAA sets out specific rules and penalties governing purchase, possession, and use of alcohol, tobacco, and drugs in Section 62, “Student (and Coach) Eligibility: Chemical Health/Alcohol/Drugs/Tobacco.” Provision 62.1 states:

> “During the season of practice or play, a student shall not, regardless of the quantity, use, consume, possess, buy/sell, or give away any beverage containing alcohol; any tobacco product; marijuana; steroids; or any controlled substance. This policy includes products such as ’NA or near beer.’ It is not a violation for a student to be in possession of a legally defined drug specifically prescribed for the student’s own use by his/her doctor. This rule represents only a minimum standard upon which schools may develop more stringent requirements.”

Minimum penalties for a student athlete’s confirmed violations are:

- First violation: When the principal confirms, following an opportunity for the student to be heard, that a violation occurred, the student shall lose eligibility for the next consecutive interscholastic contests totaling 25% of all interscholastic contests in that sport. For the student, these penalties will be determined by the season the violation occurs. No exception is permitted for a student who becomes a participant in a treatment program. It is recommended that the student be allowed to remain at practice for the purpose of rehabilitation. All decimal part of an event will be truncated, i.e., all fractional part of an event will be dropped when calculating the 25% of the season.

- Second and subsequent violations: When the principal confirms, following an opportunity for the student to be heard, that a violation occurred, the student shall lose eligibility for the next consecutive interscholastic contests totaling 60% of all interscholastic contests in that sport. For the student, these penalties will be determined by the season the violation occurs. All decimal part of an event will be truncated, i.e., all fractional part of an event will be dropped when calculating the 60% of the season.

  If, after the second or subsequent violations, the student of his/her own volition becomes a participant in an approved chemical dependency program or treatment program, the student may be certified for reinstatement in MIAA activities after a minimum of 40% of events. The director or a counselor of a chemical dependency treatment center must issue such certification. All decimal part of an event will be truncated, i.e., all fractional part of an event will be dropped when calculating the 40% of the season.

If a student in violation of this rule is unable to participate in interscholastic sports due to injury or academics, the penalty will not take effect until that student is able to participate again. Penalties shall be cumulative each academic year. If the penalty period is not completed during the season

of violation, the penalty shall carry over to the student's next season of actual participation, which may affect the eligibility status of the student during the next academic year.

Provision 62.2 prohibits use of any tobacco product by a coach during practice or competition.

Provision 62.3 covers use of steroids and states in part:

> "Anabolic androgenic steroid use at the high school level is of grave concern. Steroids are used by some athletes, and the seriousness of the problem has been well documented. A recent study indicates that over 3% of high school seniors have tried steroids in their lifetime (NIDA, 2004). High school coaches may not be able to prevent the use of steroids altogether, but they can clearly and forcefully discourage their use. Coaches should take a proactive role, learning about steroids, and then providing this information to their athletes. . . . The issue goes beyond protecting the integrity of sport. The use of steroids in sports is cheating. We must oppose the use of steroids for both health and ethical reasons."

For the most recent MIAA rules, visit the Bluebook area at http://www.miaa.net.

Laws/Regulations Concerning Drug and Alcohol-Related Treatment

Under Massachusetts law (M.G.L. c.112, s.12E), drug-dependent minors may consent to medical treatment related to their drug dependency. The law states:

> "A minor twelve years of age or older who is found to be drug dependent by two or more physicians may give his consent to the furnishing of hospital and medical care related to the diagnosis or treatment of such drug dependency. Such consent shall not be subject to disaffirmance because of minority. The consent of the parent or legal guardian of such minor shall not be necessary to authorize hospital and medical care related to such drug dependency and, notwithstanding any provision of section fifty-four of chapter one hundred and twenty-three to the contrary, such parent or legal guardian shall not be liable for the payment of any care rendered pursuant to this section. Records shall be kept of such care. The provisions of this section shall not apply to methadone maintenance therapy."

In instances such as drug overdose, M.G.L. c.112, s.12F, which governs emergency treatment of minors, also applies. Section 12F states:

> "No physician, dentist or hospital shall be held liable for damages for failure to obtain consent of a parent, legal guardian, or other person having custody or control of a minor child, or of the spouse of a patient, to emergency examination and treatment, including blood transfusions, when delay in treatment will endanger the life, limb, or mental well-being of the patient."

It is important to note that under M.G.L. c.111B, s.10, the consent of the minor and a parent *may be needed* for some alcohol treatment programs.

Laws/Regulations Concerning Gambling

M.G.L. c.10 establishes age requirements for purchasers of tickets for the Massachusetts State Lottery and Keno. No Lottery or Keno tickets may be knowingly sold to individuals under 18 years of age, although adults are allowed to buy Lottery tickets for minors as gifts. The minimum age for Lottery ticket sellers is 21.

M.G.L. c.10, s.38, which governs Beano (Bingo) games, requires that no person under 18 years of age "be permitted in that portion of any building or premises of the licensee during such time as such game is being played."

M.G.L. c.128A, s.10 forbids betting by minors at horse and dog tracks. Track owners who permit minors to bet are liable for fines of not more than $100.

Note: The collection of law and regulations above is not intended to be comprehensive. Additional state laws and regulations as well as local statutes may apply. New laws and regulations may also take effect after publication of this manual. The Massachusetts General Laws may be found online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). Always refer to an official edition of the MGL and CMR.

POLICY IMPLICATIONS/STRATEGIES FOR SCHOOLS

Addictions are a problem for all ages of society, but especially for the younger population. Add to that the problems that schools already face, such as classroom size, student indifference, and parental apathy. The overlapping of these two issues makes it imperative for the education system to develop plans to address the additional negative impact of substance abuse on the learning process. Evidence is emerging that a major risk for school failure is a child's inability to read by the 3rd and 4th grades (Barrera et al., 2002), and school failure is strongly associated with drug abuse.

Effectively promoting health and supporting substance abuse and addiction prevention efforts for children and adolescents requires a broad perspective. Schools must educate students about risks, teach avoidance skills, and establish clear policies about substance use on school property. To be truly effective, schools must address protective factors as well as risk factors, and support students through a variety of services that include school-based counseling, peer counseling, family therapy, health care, and post-treatment support. Schools must address the total environment in which their students function, creating a school climate promoting strong connections and positive development while engaging families and communities in broader environmental changes.

School-Based Strategies

School Policies

An effective alcohol, tobacco and other drugs (ATOD) policy states the school's goals and plan of action to prevent and respond to ATOD problems and articulates the consequences for policy violations. The policy should be publicized across every level of the school and community and be consistently enforced. The school should establish an ongoing process to examine the climate of the school, identify and reduce risk factors contributing to ATOD abuse, and enhance factors to increase student resiliency while preventing use.

It has been found that schools that incorporate the following strategies have effectively reduced self-reported student substance abuse (Learning First Alliance, 2001):

- fostering positive and supportive adult-student relationships;
- fostering positive peer relationships;
- creating a climate of appropriate and high expectations for all students;
- emphasizing student involvement in decision making (in school governance, instruction on social and communication skills, cooperative problem solving, goal setting);
- promoting a school climate that respects and celebrates cultural differences;
- providing information regarding addiction treatment programs, and staff support for students involved in such programs;

- training students, faculty and staff members in substance use prevention policies; and
- providing skill-based instruction, including devoting class time for skill practice.

In order to reduce youth access to harmful substances and provide a climate where positive behaviors are modeled, the Health, Mental Health and Safety Guidelines for Schools recommend the development and enforcement of alcohol-free and drug-free policies for all school staff, families, students, and visitors at indoor and outdoor school-sponsored events. **Note:** In Massachusetts, the policy for alcohol and drug free school sponsored events must be enforced at all times.

The Alcohol Epidemiology Program (AEP), a research program within the School of Public Health at the University of Minnesota further recommends that school policies ban alcohol at any school-related event — even those not held on school property. “Alcohol possession or consumption should be prohibited for everyone (including parents and other adults),” AEP suggests, “at all sports events, banquets, fundraisers, and teachers' gatherings.” School sponsored events generally adhere to “on school property” guidance, policies and procedures.

Exhibits 14-2 through 14-4 provide sample school policies.

Prevention Education

An effective school-based substance abuse prevention program is part of a comprehensive health promotion plan. Integrating school-based prevention programs into the school’s academic program is ideal because integrated programs strengthen students’ bonding to school and reduce dropout rates. Coordinating school prevention programs with local intervention programs is also critical.

Because substance use frequently starts as early as preadolescence, and risk factors are present years before initiation, school-based prevention activities should start in elementary school and be periodically reinforced as students encounter new social situations and pressures to use substances. Prevention programs that address general populations at key transition points, such as the transition to middle school, have been found particularly effective and can produce beneficial outcomes even among high-risk families and children. Because such programs or curricula do not single out risk populations, they reduce labeling and promote bonding to school and community (Botvin et al., 2004; Botvin et al., 2003; Dishion et al., 2002). Research suggests that these programs should address risk factors such as early aggression, academic failure, and school dropout by focusing on the following social competencies (NIDA, 2003; Conduct Problems Prevention Research Group, 2002; Ialongo et al., 2001):

- self-control;
- emotional awareness;
- communication;
- social problem solving; and
- academic support, especially in reading.

A planned, sequential, developmentally appropriate, and culturally sensitive comprehensive health education curriculum for PreK–12 is designed to influence students’ knowledge, attitudes, and behavior related to alcohol, tobacco, and other drugs, as well as support students in need of additional help and services. Such a curriculum reinforces healthy decision making and, through skill building, reduces the risks of a wide range of health problems (Botvin et al, 2003; Bosworth, 1997). Programs for elementary, middle, and high school should be coordinated with the educational frameworks designed by DOE (see Chapter 3).

Helping children and adolescents improve their decision-making skills, problem-solving ability, capacity to resist peer pressure, and social and communication skills can reduce involvement with substance abuse (Massachusetts DOE, 2002). Successful prevention programs typically:

- provide accurate, fact-based information about short-term and long-term health effects;
- foster development of norms that make substance abuse unacceptable and unpopular;
- disprove the notion that the majority of students experiment;
- encourage positive, supportive, sustained connections between youth and role models;
- include activities that provide youth with opportunities to role-play or use newly learned skills; and
- develop linkages to other resources as necessary.

Prevention programs for preadolescents and adolescents should increase academic and social competence by:

- improving study habits, with academic support;
- improving attendance rates;
- enhancing communication;
- strengthening peer relationships;
- improving self-efficacy and assertiveness;
- enhancing drug resistance skills;
- reinforcing antidrug attitudes; and
- strengthening personal commitments against drug abuse (NIDA, 2003; Botvin et al., 1995; Scheier et al., 1999).

Peer Leadership Programs

Peer leadership programs should be research based and implement proven effective strategies. Student peer leaders can participate in prevention activities, provide one-on-one support for other students, and present educational sessions for students, parents, school committees, and community members. With appropriate training, peer leaders have the opportunity to assist other students when they experience difficulties. Some school districts include peer leadership programs as part of the curriculum, rather than as an extracurricular activity.

Building effective peer leadership programs requires identifying, recruiting, and selecting peer advisors and providing them adequate training, ongoing support, and follow-up. Caution should be exercised in utilizing peer interventions, however. Research suggests that high-risk teens participating in peer groups can reinforce each other's drug abuse behaviors, producing unanticipated negative outcomes (Dishion et al., 2002; Dishion, McCord & Poulin, 1999). Care should also be taken to ensure that specially trained adults provide ongoing supervision and consultation. Adults should receive training to identify peer leaders who have the requisite skills to lead others and they must also be able to recognize signs of substance use by the peer leaders.

Evidence of Prevention Education's Impact

Recent evidence suggests that Massachusetts schools are educating students effectively about many risks. Every 2 years, DOE conducts the Massachusetts Youth Risk Behavior Survey (MYRBS) with funding from CDC. The 2003 MYRBS results, the most recent available, reveal continued and significant progress in reducing adolescent risk behaviors in the Commonwealth. (For details, see the report at http://www.doe.mass.edu/hssss/yrbs/03/execsum_results.pdf.) This pattern of improvement began in 1995, two years after initial distribution of Health Protection Funds, which provided financial support for strengthening health education and prevention programs in schools. The significant improvements evident in the 2003 MYRBS underscore the critical impact school-based programs have on the behavior of young people.

Intervention and Support

It is important for schools to provide a continuum of care from prevention to intervention. Some schools provide prevention and intervention through a school based health center, or a school based mental health center. At the very least, the school setting should have a strong connection with local service providers. Schools should establish protocols for managing suspected instances of substance abuse in the school setting. School nurses and behavioral health specialists/counselors should be available to provide supportive resources for all students, including those who are returning to school from alcohol and drug treatment programs. Exhibits 14-5 through 14-7 provide sample guidelines and protocols for assessing students suspected of drug or alcohol use in school.

There are many resources available to school personal regarding substance prevention or intervention for at risk or substance using students. The school personnel should follow the district wide protocol in accessing help and support for the referent as well as the student. It is important to keep in mind that many students who are drug involved often present mental health concerns as well. School personnel concerned about alcohol, inhalant, or other drug abuse may call the Massachusetts Substance Abuse Information and Education Helpline (800-327-5050) or visit http://www.helpline-online.com. Helpline referral specialists are available 24 hours a day.

The FRESH (Focusing Resources on Effective School Health) program of UNESCO also offers a number of helpful resources, all of which can be accessed under School Health at the UNESCO website (http://portal.unesco.org/education). These include:

- *Managing Drug-Related Incidents at School,* a manual offering detailed guidelines and addressing the rights of victims, perpetrators, and the school community;
- *Alcohol Screening Instrument,* for use by school staff and school-based service providers, as well as student drinkers who want to self-assess;
- *Basic Skills for Identifying, Counseling and Making Initial Contact with Students Who Use Drugs,* providing expert recommendations and guidelines for teachers and other school staff in identifying and approaching students suspected to be using drugs; and
- *Guidelines for Individual Drug Counseling in Schools,* for use by teachers or school drug counselors.

Establishing a protocol for students reentering school after receiving treatment prepares educators for some of the issues that are likely to arise and helps prevent relapse. A comprehensive guide on this subject is Thomas Shiltz's *10 Steps for Preventing Student Relapse* (1992).

Student Assistance Programs

A Student Assistance Program (SAP), sometimes referred to by schools as a Student Assistance Team (SAT), provides the necessary link between a school's instructional functions and its guidance, counseling, and health service delivery programs. A SAP is a prevention and early intervention program that has the following functions: identifying and referring students, providing ongoing case management, and recommending policy and program changes to improve the school's climate and educational and support services. Its primary goal is early intervention. Policies must be developed for SAPs and should include provisions for parent/guardian notification, consistent with Massachusetts General Law and FERPA regulations. (See Chapter 2 for discussion of confidentiality.)

According to Ensuring Solutions to Alcohol Problems, a health initiative at George Washington University Medical Center, SAPs can now be found in more than 1,500 school systems. Evaluations of the effectiveness of SAP programs have been limited, however the findings thus far have been promising. One study found that 86% of high school students who participated in a Rhode Island-based SAP stopped or significantly decreased their substance use, and 73% rated

their experience as positive (Wagner et al., 1999). Another controlled study, conducted in Nebraska, compared students from schools with a SAP with students whose schools did not offer such a program. This study found that students in schools with a SAP reported both a lower use of alcohol in the previous 30 days and a significantly higher level of academic achievement (Scott et al., 1999). Recent NIH funded studies have also tested interventions specifically designed for use in a SAP setting (Wagner, Tubman, & Gil, 2004; Winters & Leitten, 2004).

The SAP is operated by a multidisciplinary team of educational and health service professionals. Members of the team should include, but not be limited to, an administrator, the school nurse, a behavioral/health specialist/counselor, a guidance and/or adjustment counselor, a school physician, one or more classroom teachers, and the director of discipline, as well as a truant officer, law enforcement officer, and/or parole officer.

Role of the School Nurse

The school nurse often plays a pivotal role in prevention education, risk assessment, health assessment, counseling, collaboration with parents/guardians, and referrals as needed. In some cases the nurse may need to provide emergency treatment until the emergency medical services arrive. In addition, the school nurse is a health resource/health educator, working with the student and parent/guardian to assist in accessing appropriate treatment programs. These responsibilities are always performed in collaboration with other members of the Student Assistance Team.

Role of the Substance Abuse Specialist/Counselor

In some school districts, a substance abuse specialist or counselor may be part of the Student Assistance Team. Such specialists may be district or school employees, or may provide services on a contract basis. If a substance abuse specialist is available on-site, he or she may perform tasks such as:

- assessment and referral;
- on-site substance abuse counseling;
- delivery of a substance abuse prevention curriculum;
- consultation to teachers and other appropriate school personnel;
- crisis intervention and referral, as needed; and
- educational workshops relevant to substance abuse for parents and school personnel.

For many school districts, providing intensive substance abuse counseling services may not be a possibility. However, recent research indicates that brief interventions can be effective for youth with moderate substance abuse problems, and such limited interventions may be more accommodating to resources and training levels of school counselors (Robert Wood Johnson Foundation, 2005; Winters & Leitten, 2004).

In Massachusetts, alcoholism counselors and drug counselors are certified by The Massachusetts Board of Substance Abuse Counselors. The requirements for the Certified Alcoholism Counselor (C.A.C.) certification are: 4,000 documented hours (2 years full time) of supervised counseling of clients with substance abuse problems; 180 clock hours of education; a national written exam; and, an oral case presentation. The education hours are broken down into four categories: (1) alcohol- and drug-specific education, (2) counseling techniques, (3) behavioral science, and (4) ethics. Also required within the 4,000 hours of counseling experience are 220 hours of supervised practical training in twelve counselor core function areas.

For the Certified Alcohol and Drug Abuse Counselors (C.A.D.A.C.) certification, the requirements are: 6,000 hours (3 years full time) of documented hours of supervised counseling of clients with substance abuse problems; 270 hours of education in the four categories; 300 hours of supervised practical training; and, a national exam and oral presentation. Additional information about C.A.C.

and C.A.D.A.C. credentialing may be obtained from The Massachusetts Board of Substance Abuse Counselors website: http://www.mbsacc.org/.

In addition, certification as an addiction specialist may be obtained from the American Academy of Health Care Providers in the Addictive Disorders, a membership organization comprised of nurses, doctors, psychologists, psychiatrists, social workers, and counselors. The Certified Addiction Specialist (C.A.S.) credential has specialty areas covering alcoholism, other drug addiction, eating disorders, compulsive gambling, and sex addiction. To qualify, applicants must have 3–5 years of supervised clinical experience (depending on educational degree attained), 120 hours of training in basic counseling skills, 60 hours of training in each area of specialization, three professional recommendations, and a completed application. Applicants meeting the above requirements are eligible to take one of the Academy's written examinations in alcoholism and drug addiction or in compulsive gambling. More information about C.A.S. credentialing is available at http://www.americanacademy.org/.

Family Involvement

Families — parents/guardians and extended family members — are the strongest influence over children's substance abuse. Parents who abstain from cigarettes and illegal drugs, drink responsibly, have high expectations for their children, monitor their children's whereabouts, know their children's friends, and provide loving support and a forum for communication are less likely to have children who use and abuse tobacco, alcohol, or drugs (The National Center on Substance Abuse at Columbia University, CASA, 2005). To be truly effective, any substance prevention program must incorporate families as supportive partners (NIDA, 2003; National Research Council & Institute of Medicine, 2003). These interested adults can reinforce learned skills through at-home practice and modeling, and provide support for programs in their communities (Kelly et al., 2002).

Parental monitoring and supervision can be enhanced with training on rule-setting; methods for monitoring child activities; praise for appropriate behavior; and moderate, consistent discipline that enforces family rules. In cases where family members are abusing ATOD, education programs should be offered that include identification of community resources. Free pamphlets for parents and/or youth are available through DPH. (See Resources section for more information.)

Community Involvement

Through public policy, media-created awareness, advocacy, and enforcement, communities can be active in changing and supporting norms of non-use and reinforcing positive messages presented at school.

DPH's Bureau of Substance Abuse Services supports community-based prevention programs that use science-based programs to prevent ATOD abuse among preschool and school-age youth and their families. Each program focuses on a specific municipality or neighborhood and is implemented by a coalition composed of interested community members. These programs view youth as resources in their communities; incorporate meaningful youth involvement in program planning, implementation, and evaluation; and focus on positive outcomes for youth.

A federally funded initiative, the Massachusetts Collaborative for Action Leadership and Learning (MassCALL), is working to bring together state and community leaders to revitalize the Commonwealth's comprehensive substance abuse prevention strategy and to provide funding to communities to reduce ATOD abuse among youth. In 2002, coalitions funded by MassCALL collaborated with DPH, DOE, and other state agencies and organizations to develop a statewide framework that would guide future efforts to prevent and reduce substance abuse, particularly among youth and young adults. The resulting document, *Maximizing Health: A Framework,* promotes close collaboration among state and local planners, practitioners, evaluators, and others

to maximize resources and balance the evidence from prevention research. The framework is available at http://www.mass.gov/dph/bsas/prevention/masscall/framework/maxhealth_title.htm.

Individual schools may also choose to work actively with their communities to improve the environment in which their students live, play, and study. The following suggestions of ways schools can work with communities to improve community norms and the wider environment come from the U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention document *Schools and the Community Alcohol, Tobacco, and Other Drug Environment: Opportunities for Prevention,* produced in collaboration with the Pacific Research Institute.

- Schools can play an important role in targeting problem retail outlets that sell alcohol or tobacco to minors by documenting sales practices, conducting surveys and educational workshops for the community, promoting and participating in local coalitions, working with local businesses and officials, and providing written and oral testimony at relevant governmental hearings and small-claims courts.
- Schools can play an active part in assessing the role of alcohol in community celebrations and can sponsor alcohol-free events to encourage student and family participation and enhance the school's educational mission.
- Schools can play a lead role in developing ATOD-free zones that extend beyond school boundaries into recreation areas and other locations by promoting the concept in the community, working with local officials in implementation, soliciting support from parents and local residents, and integrating the ATOD-free zones into school activities.
- Schools can work with local officials to end alcohol and tobacco industry sponsorships of community events and to limit outdoor advertising, especially in the vicinity of school facilities.
- Schools can counteract alcohol and tobacco marketing, which often uses images, promotional materials, logos, and messages that are particularly attractive to young people, by working with local businesses and community leaders to remove youth-oriented alcohol and tobacco promotional materials or restrict their distribution to students.
- Schools can help change aspects of the physical environment that may be contributing to illegal drug problems (e.g., poor lighting, abandoned buildings) by documenting locales where problems exist, publicizing the dangers to children and the need for action, and working with local officials to develop and implement policy reforms.

SPECIFIC AGENTS

In addition to alcohol and tobacco, many drugs are commonly abused, as listed by The National Institute on Drug Abuse at: http://www.drugabuse.gov/DrugPages/DrugsofAbuse.html. Gambling is also a temptation for abuse.

Alcohol

Scope of the Problem

Alcohol is the leading drug of choice among children and adolescents. A higher percentage of youth aged 12–20 use alcohol (29%) than use tobacco (23.3%) or illicit drugs (14.9%) (SAMHSA, 2003).

According to the National Center on Addiction and Substance Abuse (CASA) at Columbia University, individuals under 21 drink almost one-fifth (19.7%) of the alcohol consumed in the United States. More than 5 million high school students (31.5%) admit to binge drinking at least once a month. The age at which children begin drinking has been dropping since 1975, and recent

estimates of the number of children who begin drinking in the 8th grade or earlier range from 36% (CASA, 2003) to 53% (National Institute on Alcohol Abuse and Alcoholism (NIAAA), 2005).

The gender gap that endured for generations has evaporated: male and female 9th graders are equally likely to drink (40.2% and 41%) and binge drink (21.7% and 20.2%) (CASA, 2003).

A 2006 SAMHSA report, *State Estimates of Substance Use From the 2003–2004 National Surveys on Drug Use and Health,* placed Massachusetts in the top fifth of states for both underage use of alcohol and underage binge use of alcohol.

DPH conducts the Massachusetts Youth Health Survey (YHS) in alternate years (to the YRBS), documenting trends in health risk behaviors; the most recent data available as of this printing come from the 2002 survey. The YHS surveys students in grades 6–12, thus including middle school as well as high school students. According to the YHS:

- Current use (within the past 30 days) of alcohol rises steadily, from just under 14% in 6th grade to nearly 69% in 12th grade.
- Forty-six percent of all students had consumed an alcoholic drink in the 30 days before the survey. After having remained virtually unchanged since 1995, the rate of current drinking decreased significantly in the most recent survey (down from 53% 2 years earlier).
- Twenty-seven percent of all students reported at least one episode of binge drinking (defined as consuming 5 or more drinks in a row within a couple of hours) during the 30 days before the survey.
- More than half (59%) of students who reported any current drinking also reported engaging in binge drinking at least once in the 30 days before the survey.
- Risk behaviors are once again shown to cluster: Among students who had ever had a drink in their lives, those who reported current alcohol use were significantly more likely than students who did not drink (the month before the survey) to report lifetime and current drug use, lifetime and recent sexual intercourse, attempting suicide, carrying a weapon, being in a physical fight, and experiencing sexual contact against their will.
- All measures of alcohol use were associated with significantly lower rates of academic achievement.
- Students in rural school districts had the highest rate of binge drinking (31% vs. 28% in suburban districts and 24% in urban districts).

Risk Factors

Research by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) has found that 1 youth in 4, or about 19 million young people, is exposed to family alcoholism or alcohol abuse some time before the age of 18. Children in families affected by alcohol often live in environments that are stressful, chaotic, and frightening. Moreover, children of alcoholics are vulnerable to mental illness and medical problems and are at greater risk than others to abuse alcohol (Johnson & Leff, 1999; Elkins et al., 2004).

Studies conducted by the Prevention Research Center (PRC), using data from the National Household Survey on Drug Abuse and the National Longitudinal Study of Adolescent Health (2004), indicate that teens who sustain intense work schedules (above 10 hours per week) are particularly susceptible to drinking. In fact, it was found the more they work, the more heavily they tend to drink. It was also found that working 10 hours a week or less appears to pose no risk for alcohol use or heavy drinking, but risk increases significantly above 10 hours a week.

The likelihood of consuming alcohol (as well as using drugs and smoking) is elevated for teenage girls who date older boys, for teens with many sexually active friends, and for those who spend 25

hours or more a week with a boyfriend or girlfriend (CASA, 2004). According to one recent study, a very strong correlation also exists between victimization in middle school and alcohol use in high school. Researchers from the Oregon Research Institute who followed 223 at-risk male and female students through their middle school and high school years found that verbal harassment during middle school increased the likelihood of alcohol use during high school almost threefold (Rusby et al., 2005).

Consequences

The brain changes dynamically during adolescence, and early use of alcohol can seriously impair these growth processes and hinder academic ability. Recent research to evaluate the cognitive functioning of alcohol-dependent adolescents has found evidence of impaired memory, altered perception of spatial relationships, and deficiencies in verbal skills. These negative cognitive effects may cause alcohol-dependent adolescents to fall behind in academic performance, which can induce an unfortunate downward spiral (NIDA, 2003; Brown et al., 2000). Research using sophisticated imaging tests also suggests that alcohol consumption during adolescence may have a permanent adverse effect on the growth and development of the hippocampus—a part of the brain important for learning and memory (NIDA, 2003; De Bellis et al., 2000).

Cognitive damage is not the only consequence of underage drinking. It highlights additional risks of alcohol consumption by youth (Office of Alcohol and Other Drug Abuse, 2004):

- Underage drinking is a factor in nearly half of all teen automobile crashes, the leading cause of death among teenagers.
- Alcohol use contributes to youth suicides, homicides, and fatal injuries.
- As many as two-thirds of all sexual assaults and date rapes of teens and college students are linked to alcohol abuse.
- Alcohol is a major factor in unprotected sex among youth, increasing their risk of contracting HIV and other sexually transmitted diseases (Stueve & O'Donnell, 2005).

The impact of alcohol use upon the health of all Americans is acknowledged in Healthy People 2010, the national health promotion and disease prevention initiative (discussed in Chapter 1). Among the alcohol-related objectives specified in Healthy People 2010 are: reduce the proportion of persons engaging in binge drinking of alcoholic beverages, reduce alcohol use among adolescents, and increase the average age at which adolescents first use alcohol by at least 1 year. Schools have a role in helping communities meet these goals.

Preventive Measures

The first school-based prevention programs were primarily informational rather than skill-based and were found to be ineffective. Today's improved programs share a number of common elements: they follow social-influence models and include setting norms, addressing social pressures to drink, and teaching resistance skills. These programs also offer interactive and developmentally appropriate information, include peer-led components, and provide teacher training (NIAAA, 2004, 2005, and 2006).

Leadership to Keep Children Alcohol Free, a coalition of governors' spouses, federal agencies, and public and private organizations working together to prevent the use of alcohol by children aged 9–15, recommends schools pay particular attention to perceptions about peer behavior. Children and teens frequently overestimate how many of their peers are engaging in behaviors such as drinking. Because studies of 6th graders have shown that children who overestimate the number of their peers who are drinking are more likely to drink, the coalition suggests schools incorporate information about actual peer alcohol use rates into prevention education programs. This approach results in less alcohol use and fewer related problems, as students usually desire to align themselves with the majority of their peers. Recognizing the strong influence parents or guardians

can have on teen alcohol use, the Alcohol Epidemiology Program (AEP) also suggests that schools educate families about community factors that influence their teens' access to alcohol and about preventing access to alcohol in the home.

According to the National Institute of Alcohol Abuse and Alcoholism (NIAAA), the most effective approach for preventing underage drinking is to bring about the coordinated effort of all elements influencing a child's life, including family, schools, and community. Ideally, intervention programs also should integrate treatment for youth who are alcohol-dependent. (See Resources for additional information.)

Recognizing and Responding to Problems

Signs of alcohol intoxication include:

- sleepiness;
- slurred speech or difficulty expressing a thought intelligibly;
- lack of coordination, poor balance;
- inability to walk a straight line;
- inability to focus on another person's eyes;
- red eyes, dilated pupils, or flushed face;
- morning headaches, nausea, weakness, or sweatiness; and
- odor of alcohol on breath or in sweat.

Among the more subtle behavioral signs of alcohol or drug use are:

- secretive behaviors, including hiding the odor of alcohol with such foods as peanut butter and mints;
- change in personality or baseline mood;
- drop in grades;
- dropping old friends and getting new friends, whom the student does not introduce to parents;
- change in participation in extracurricular activities; and
- drug paraphernalia found, even if the student claims it belongs to a friend.

Screening and Identification

School nurses, counselors, and others may use a standardized screening tool to assess the risk of alcohol and/or substance abuse. Several such tools — the Alcohol Use Disorders Identification Test (AUDIT), the Program Oriented Screening Instrument for Teenagers (POSIT), and the CRAFFT Substance Abuse Screening Test questionnaires — have demonstrated acceptable sensitivity for identifying alcohol problems or disorders in adolescents. The CAGE questionnaire, a brief alcohol screening tool, is an internationally used assessment instrument for identifying problems with alcohol. However, it is not recommended for use with adolescents (Knight et al., 2003).

The CRAFFT tool was developed specifically for adolescents by the Center for Adolescent Substance Abuse Research at Children's Hospital Boston. The tool's name is a mnemonic device that helps to remind the screener of the 6 questions it includes, as shown below. The CRAFFT is very brief and easy to score: 2 "yes" answers indicate a need for further assessment, while 4 "yes" answers indicate dependence (Knight et al., 2003). Studies have shown that scores on the CRAFFT screening tool have a high correlation with measures of substance abuse and dependence.

CRAFFT Screening Instrument for Adolescents

- Have you ever ridden in a **C**ar driven by someone (including yourself) who was "high" or had been using alcohol or drugs?
- Do you ever use alcohol or drugs to **R**elax, feel better about yourself, or fit in?
- Do you ever use alcohol or drugs while you are by yourself, **A**lone?
- Do you ever **F**orget things you did while using alcohol or drugs?
- Do your **F**amily or **F**riends ever tell you that you should cut down on your drinking or drug use?
- Have you ever gotten into **T**rouble while you were using alcohol or drugs?

Exhibits 14-5 through 14-7 provide sample guidelines and checklists for screening of students suspected of alcohol or drug use.

State-Sponsored Recovery Assistance

In 2006, state-funded recovery high schools for students with substance use disorders opened in three Massachusetts cities — Springfield, Beverly, and Boston. Designed to reduce the risks of relapse, these schools aim to provide education only to students who are in recovery.

Tobacco

Scope of the Problem

Smoking is the leading preventable cause of death in the United States. It is estimated that more than 9,000 Massachusetts residents die each year from smoking-related causes. The cost of health care for people in the state with smoking-related illnesses exceeds $2.7 billion a year. Smoking is a major risk factor for heart disease and stroke, chronic bronchitis, emphysema, and cancers of the lung, larynx, pharynx, mouth, esophagus, pancreas, and bladder. Students who smoke are also at higher risk for contracting colds, bronchitis, and triggering asthmatic symptoms, and therefore have increased absenteeism due to illness (Massachusetts Department of Education, 2000).

As noted above, results from the 2003 YRBS suggest that school health programs have had a major positive effect on the behavior of Massachusetts young people. Nevertheless, an estimated 13,700 children under 18 in Massachusetts become new daily smokers each year. Statistics indicate that teenagers are the age group most vulnerable to the addictive attraction of cigarettes. According to CDC, 80% of tobacco users began smoking as teens. A new report compiling 5 years of studies from a research program at the University of California, Irvine, Transdisciplinary Tobacco Use Research Center (UCI TTURC, 2004), provides some possible explanations for adolescents' susceptibility to tobacco addiction:

- A single exposure to nicotine can produce changes in the developing brains of adolescents.
- Adolescents are more receptive than adults to the rewarding effects of nicotine and the chemicals with which it combines in cigarette smoke.
- Teens may not feel the negative effects of nicotine as strongly as adults.
- Teens with ADHD may turn to smoking as a form of self-medication.

Cigarettes are not the only means by which children and adolescents may become addicted to tobacco or fall victim to negative health effects associated with tobacco products. Other dangers include:

- **Smokeless tobacco and cigars.** The use of smokeless or "spit" tobacco, including chewing tobacco or snuff, is not a safe alternative to smoking. Smokeless tobacco has been determined to be highly addictive, and its use has been linked to cancers of the head,

neck, throat, and esophagus, as well as gum disease. It also increases the risk of cardiovascular disease, including heart attack. Chewing tobacco has also been linked to tooth decay. Cigar smoking similarly poses serious health risks: Cigar smokers are at higher risk for heart disease, chronic obstructive pulmonary disease, and lung and other cancers.

- **Water pipes.** The smoking of flavored tobaccos through water pipes has become popular among young people, who are often mistakenly assuming that water filtration makes smoking safer. In 2006, the World Health Organization issued a warning about this activity, noting that users of water pipes inhale dangerous amounts of carbon monoxide, nicotine, and tar, and that substantial evidence confirms that smoking through a water pipe causes lung disease, cardiovascular disease, and cancer.
- **Secondhand smoke.** The detrimental effects of secondhand smoke, also known as environmental tobacco smoke, have been well documented. Secondhand smoke includes both sidestream smoke produced by a lighted cigarette, cigar, or pipe and mainstream smoke exhaled by a smoker. Secondhand smoke contains a complex mixture of more than 4,000 chemicals, more than 50 of which are cancer-causing agents. Secondhand smoke is a particular danger to young children because their lungs are not fully developed. Exposure to secondhand smoke is associated with an increased risk for sudden infant death syndrome (SIDS), asthma, bronchitis, and pneumonia in young children.

Consequences Beyond Health Impact

Negative Effects on School Performance

Significant evidence exists that adolescent smoking impacts cognitive performance in ways that can hamper educational achievement. Limited access to tobacco during school hours is related to withdrawal, which increases distraction by external stimuli and decreases activity level. (Massachusetts Department of Education, 2000).

In tests of visual and auditory attention, adolescent smokers perform as accurately as nonsmokers, but their reaction times are slower. On tests of verbal learning and accuracy of working memory, adolescent smokers perform less well than nonsmokers. When smokers in this age category are deprived of cigarettes, the impairment of both working memory and verbal learning performance becomes more pronounced. The earlier an individual begins smoking, the worse the severity of performance deficits (Jacobsen et al., 2005).

The negative effects of early smoking on academic achievement are also apparent in the results of a longitudinal study conducted by researchers at Rand Health, which surveyed participants in 7th grade and then again in 12th grade. Compared with 7th grade nonsmokers, the 7th grade smokers were 2–3 times more likely to experience academic problems (such as frequent absences, poor grades, or grade repetition) and nearly 4 times more likely to have skipped classes or been suspended during middle school. By 12th grade, early smokers were consistently more likely than early nonsmokers to experience a variety of academic problems (including dropping out of high school), to engage in other types of substance abuse, and to exhibit delinquent and other problem behaviors (Ellickson et al., 1996; Ellickson et al., 2001).

Correlation With Other Risk Behaviors

Seventh grade smokers in the Rand Health study were also far more likely than their nonsmoking counterparts to abuse substances other than tobacco. They were 21 times more likely to engage in marijuana use or drinking on a weekly basis, 8 times more likely to engage in binge drinking, and 36 times more likely to use hard drugs. The likelihood of having engaged in stealing was also 7 times greater among smokers than nonsmokers (Ellickson et al., 1996; Ellickson et al., 2001).

Preventive Measures

School-based programs to prevent tobacco use can make a substantial contribution to the health of the next generation. Indeed, in its 1994 *Guidelines for School Health Programs to Prevent Tobacco Use and Addiction,* the CDC declared that meeting the challenge to provide effective tobacco-use prevention programs to all young persons is an ethical imperative.

Recent research indicates strong links between smoking and students' experiences in school. One study conducted by researchers from Brown Medical School found that feeling alienated from school and having friends who smoke were particularly strong influences that led adolescents both to experiment with tobacco and to become regular smokers (Lloyd-Richardson et al., 2002).

Most established smokers start before age 18, often well before. Although little data about smoking is regularly collected for children under 12, data from a nationwide *Monitoring the Future* survey suggest that the peak years for initiation of smoking are the 6th and 7th grades, with a significant number of students experimenting even earlier. By the 8th grade, 28% of students had already tried smoking, and 13% reported that their first experience of smoking took place by the 5th grade (Johnston et al., 2005; Gallogly, 2004).

In its *Guidelines for School Health Programs to Prevent Tobacco Use and Addiction,* CDC recommends 7 strategies that are effective in preventing tobacco use among youth. To achieve the greatest impact, schools should implement all 7 recommendations:

(1) Develop and enforce a school policy on tobacco use.
(2) Provide instruction about the short-term and long-term negative physiological and social consequences of tobacco use, social influences on tobacco use, peer norms regarding tobacco use, and refusal skills.
(3) Provide proven effective research based tobacco-use prevention education in kindergarten through 12th grade; this instruction should be especially intensive in junior high or middle school and should be reinforced in high school.
(4) Provide program-specific training for teachers.
(5) Involve parents or families in support of school-based programs to prevent tobacco use.
(6) Support cessation efforts among students and all school staff who use tobacco (see Tobacco Cessation section in this chapter).
(7) Assess the tobacco-use prevention program at regular intervals.

The Campaign for Tobacco-Free Kids offers a few additional suggestions that build on the framework of CDC's 7 strategies. The organization recommends that schools adopt a firm policy of not accepting any funding, curricula, or other materials for tobacco-use prevention programs from tobacco companies (Gallogly, 2004).

Finally, based on the results of their longitudinal study of the long-term social consequences of smoking in early adolescence, Rand Health researchers made a number of recommendations about how to structure tobacco prevention programs for maximum effect:

- Given the links between early smoking and concurrent and later high-risk behaviors, prevention efforts aimed at youth who are already smoking should also address the other problems these teens may be facing.
- Because young adolescents who smoke only occasionally are at increased risk to become heavy smokers in the future, it is very important to start smoking prevention programs early and continue these efforts throughout high school.
- Because early smoking seems predictive of dropping out of high school, programs aimed at preventing or stopping young adolescents from smoking and using other drugs may significantly reduce their risk of dropping out in the future.

Recognizing and Responding to Problems

Signs and Symptoms

Observation, rather than a formal screening tool, is usually adequate to identify a smoker. Obvious indications of tobacco use include the smell of tobacco around the young person or on his or her clothing, and stained fingers or teeth.

Tobacco Cessation

CDC's 2004 publication *Youth Tobacco Cessation: A Guide for Making Informed Decisions,* available at http://www.cdc.gov/tobacco/educational_materials/cessation/youth_cess, provides information on assessing community needs, details cessation interventions, and discusses a range of factors that might complicate cessation services once a program is started.

Research indicates that the most effective programs are those that enhance adolescents' motivation to quit (see Exhibit 14-8 for a fact sheet on the health benefits of quitting) and their ability to resist pressures to smoke, as opposed to simply obstructing access to cigarettes. Tailoring programs for adolescents seems to work better than making superficial changes to programs designed for adults. Providing social supports to help teens persevere in their attempts to quit and showing them how to make use of available community resources are important elements. In addition, school-based cessation programs have tended to yield higher quit rates than clinic-based or family-based programs or mass-media campaigns. Finally, programs that include more sessions have shown higher quit rates (Carpenter, 2001).

Smoking cessation services are available free of charge to all Massachusetts residents through the Try-To-STOP TOBACCO Resource Center (800-TRY-TO-STOP (800-879-8678); http://www.trytostop.org).

American Lung Association (ALA) has a program for youth smokers called Not On Tobacco (N-O-T). Consisting of a 10-session curriculum and booster sessions conducted by teachers, counselors, nurses, or health educators who have been trained by the ALA, N-O-T takes place in schools and community settings and is currently in use in some Massachusetts high schools. For more information, call 800-LUNG-USA (800-586-4872) or contact a local ALA chapter.

Beginning in 1999, DPH's School Health Unit began collaborating with the Division of Preventive and Behavioral Medicine, Department of Medicine, University of Massachusetts Medical School and a group of high school nurses to design, develop, and implement a pilot study of interventions delivered by school nurses to help individual youth stop using tobacco. The pilot study, conducted within 71 schools in Massachusetts during the 2002–2003 school year, demonstrated extremely promising results, indicating potential for school nurses to have a significant impact on smoking cessation among adolescents. School nurses found it feasible to implement the 4-session, one-on-one intervention within their practices, and the intervention was extremely well received by students. Implementation of the methodology is ongoing in schools in Massachusetts. Contact DPH's School Health Unit to request resource information for implementation of the school-nurse-delivered cessation program.

Illicit Drugs

Scope of the Problem

Illicit drugs include marijuana, hashish, cocaine, crack cocaine, speed, heroin, opium, LSD, mescaline, and PCP. National research, based on admissions for substance abuse treatment (SAMHSA, 2006), indicates an increase in early initiation of marijuana and opiates (a category that includes prescription pain medications and heroin) between 1993 and 2003. Initiation of marijuana

use prior to age 13 increased from 20% to 23% of marijuana admissions during this time period, while among those receiving treatment for opiate abuse, the percentage reporting pre-teen use increased from 4% to 5%. Reports of use prior to age 13 declined among the populations admitted for treatment of cocaine addiction (from 5% to 4% and addiction to stimulants, including methamphetamine (10% to 9%).

Lifetime and current rates of marijuana use in Massachusetts have been consistently above the national average since 1993. In 2003, according to the Massachusetts Youth Risk Behavior Survey, 47% of all Massachusetts high school students and 61% of seniors reported lifetime use of illegal drugs, primarily marijuana. Approximately 28% of high school students and 37% of seniors had used marijuana in the 30 days before the survey. This rate has not changed significantly since 1995. Three in five students who had ever used marijuana also reported current use of the drug, suggesting that one-time experimentation with it was rare. Approximately 9% of all high school students had used ecstasy in their lifetimes, 8% had used cocaine, 6% had used methamphetamine, and 3% had used heroin.

A disturbing shift has occurred in the perception of the risk involved in illegal drug use over recent years. Adolescents see less risk of harm than they did previously, while they also report greater availability of drugs than in past years (U.S. Department of Health and Human Services, Healthy People 2010 Midcourse Review, 2006).

Research suggests that the higher the perceived risk associated with marijuana use, the lower the likelihood that youth will use it. For example, “among youths who considered smoking marijuana once a month a ‘great’ risk, few (1.8%) indicated that they had used marijuana in the past month. However, among youths who considered ‘moderate,’ ‘slight,’ or ‘no’ risk to using marijuana, the prevalence rate was 11.2%” (SAMHSA, 2005).

Early drug use often leads to other forms of unhealthy and antisocial behavior. Illegal drugs are associated with premature sexual activity and the attendant risks of unwanted pregnancy and exposure to sexually transmitted diseases (Scivoletto et al., 2002). Users of illegal drugs are at risk for a number of other diseases, including tuberculosis and hepatitis. Drug use is also strongly associated with delinquency, violence, and other high-risk behaviors (U.S. Department of Justice, National Drug Intelligence Center, 2004).

Although all youth are potentially at risk for substance abuse, those with low school achievement and/or high rates of truancy and misconduct are at particularly high risk, as are those whose friends abuse alcohol or drugs. Spending a significant amount of time with older peers and adults who abuse substances exerts a particularly strong influence. Other risk factors for abuse include youth from families of substance abusers, youth with physical disabilities (who may drink or take drugs as a way of coping with feelings of isolation or to self-medicate), and gay and lesbian youth (who may turn to substances to “fit in” or to cope with depression). As noted earlier, recent research also indicates that girls may be particularly vulnerable to the abuse of certain substances, including marijuana (Office of National Drug Control Policy, 2006; SAMHSA, 2002, 2003, and 2004; National Survey on Drug Use and Health, 2004 and 2005).

Prescription and Over-the-Counter Drugs

Scope of the Problem

Research indicates that prescription medication abuse by teens and young adults is a problem that has reached alarming proportions in the United States. According to the Partnership for a Drug-Free America (PDFA), which conducts annual studies of teen drug use and attitudes, the intentional abuse of prescription and over-the-counter (OTC) medications to obtain a high is now

an “entrenched behavior” among today’s teen population (PDFA, 2006). PDFA’s 2005 Partnership Attitude Tracking Study (PATS), which surveyed more than 7,300 students in grades 7–12, found that today’s teenagers are more likely to have abused prescription and OTC medications than they are to have abused ecstasy, cocaine, crack, or methamphetamine. Nearly 1 in 5 teens (19%, or 4.5 million) reported abusing prescription medications, and 1 in 10 (2.4 million) reported abusing cough medicine (PDFA, 2006).

Commonly abused classes (and generic and brand names) of prescription drugs include:

- opioids and narcotics (often prescribed to treat pain)
  - oxycodone (OxyContin, Percodan)
  - propoxyphene (Darvon)
  - hydrocodone (Vicodin)
  - morphine
  - hydromorphone (Dilaudid)
  - meperidine (Demerol)
  - diphenoxylate (Lomotil)
- central nervous system depressants (“downers”) (often prescribed to treat anxiety and sleep disorders)
  - barbiturates
    - pentobarbital sodium (Nembutal)
  - benzodiazepines
    - diazepam (Valium)
    - alprazolam (Xanax)
  - tranquilizers
- stimulants (“uppers”) (prescribed to treat narcolepsy, ADHD, and obesity)
  - methamphetamine
  - dextroamphetamine (Dexedrine)
  - methylphenidate (Ritalin)

Cold and cough medicines, particularly “extra strength” cough syrups, are used by teens as a source of dextromethorphan (sometimes called “DXM” or “robo”), which, when taken in large doses (4 or more ounces), produce dissociative effects similar to those of hallucinogens.

A key factor driving increased abuse of prescription pain relievers, according to PDFA, is their widespread availability and easy access. More than 3 out of 5 teens surveyed said prescription pain relievers were easy to get from parents’ medicine cabinets; half said they were easily obtained through other people’s prescriptions; and more than half said pain relievers are “available everywhere.”

Many teens perceive that these prescription and OTC drugs are safe and nonaddictive, because they have legitimate uses. In fact, prescription and OTC medications can be highly addictive, and long-term addiction to any form of medication can lead to liver and kidney damage and heart and blood pressure problems. Furthermore, the consequences of misusing or abusing some of these medications on even one occasion can be serious or fatal. A single dose of an opioid can dangerously lower a person’s breathing rate. Reducing or stopping central nervous system depressants can lead to seizures. Abusing stimulants such as Ritalin may cause dangerously high body temperatures, irregular heartbeat, aggression, paranoia, seizures, or heart failure (Van Vranken, 2005).

Compounding the risk is the fact that teens who are abusing such medications frequently mix them with alcohol or other drugs or take them in ways that make them much more dangerous. For example, the Drug Enforcement Administration (DEA) has reported that some Ritalin abusers

dissolve the tablets in water and inject the mixture. This can block small blood vessels and damage the lungs and retina. Similarly, abusers of OxyContin, a controlled drug approved in 1995 to treat chronic, moderate-to-severe pain, often chew the tablets, crush them and snort the powder, or dissolve them in water and inject the drug to get a fast high (Meadows, 2001).

Preventive Measures for All Drugs

The Second Edition of the National Institute on Drug Abuse publication, *Preventing Drug Use Among Children and Adolescents: A Research-Based Guide for Parents, Educators and Community Leaders,* is a valuable resource for schools initiating or revamping their drug prevention programs. Some of the advice from this 2003 edition, pertaining to school-based programs, is summarized below.

First, the potential impact of specific risk and protective factors associated with drug abuse changes with age, so drug prevention education must be tailored for grade level. For a younger child, risk factors within the family have greater impact, so avoidance lessons should reinforce the child's sense of identification with the family and its value system. For adolescents, on the other hand, association with drug-abusing peers and misperceptions of the extent and acceptability of drug-abusing behaviors in school, peer, and community environments may be more significant risk factors. For this reason, most prevention curricula for middle school and high school students include a normative education component designed to correct the misperception that many students are abusing drugs.

Second, prevention programs should not assume that any one drug is the main problem but should address all forms of drug abuse, including combining of substances. This is the best way to deter youth from addictive behavior, because they often abuse more than one substance and/or progress from substances such as alcohol or tobacco to illegal drugs, inhalants, prescription medications, or OTC drugs.

Third, school-based prevention programs in schools should not be taught in a vacuum or in a manner tending to make students feel defensive or untrustworthy. Instead, these programs should be integrated with curricula that focus on children's social and academic skills, including enhancing peer relationships, self-control, coping skills, social behaviors, and drug-offer refusal skills. This approach has the added benefit for a school in furthering its own goal of enhanced academic performance. Integrated programs strengthen students' bonding to school and reduce their likelihood of dropping out.

Recognizing and Responding to Problems With All Drugs

General Signs and Symptoms

The following list includes general signs and symptoms of drug use. Exhibit 14-9 provides detailed information about indicators of use of specific types of drugs. Exhibits 14-5 through 14-7 provide sample guidelines and checklists for screening of students suspected of drug or alcohol use.

Physical Signs

- any changes in eating habits, including loss of appetite or increase in appetite
- unexplained weight loss or gain
- slowed or staggering walk; poor physical coordination
- inability to sleep, awake at unusual times, unusual laziness
- red, watery eyes; pupils larger or smaller than usual; blank stare
- cold, sweaty palms; trembling hands
- puffy face, blushing, or paleness

- smell of substance on breath, body, or clothes
- extreme hyperactivity; excessive talkativeness
- runny nose; hacking cough
- needle marks on lower arm, leg, or bottom of feet
- nausea, vomiting, or excessive sweating
- tremors
- irregular heartbeat

Behavioral Signs

- change in overall attitude/personality with no other identifiable cause
- changes in friends; new hangouts; sudden avoidance of old crowd; doesn't want to talk about new friends; friends are known drug users
- change in activities or hobbies
- drop in grades at school or performance at work; skips school or is late for school
- change in habits at home; loss of interest in family and family activities
- difficulty in paying attention; forgetfulness
- general lack of motivation, energy, self-esteem; "I don't care" attitude
- sudden oversensitivity, temper tantrums, or resentful behavior
- moodiness, irritability, or nervousness
- silliness or giddiness
- paranoia
- excessive need for privacy; unreachable
- secretive or suspicious behavior
- car accidents
- chronic dishonesty
- unexplained need for money; stealing money or items
- change in personal grooming habits
- possession of drug paraphernalia

Note: It is important to keep in mind that ***a student who displays any of the characteristics cited above is not necessarily using drugs.*** Some of these behaviors could be the product of stress, depression, an undiagnosed physical health condition, or a host of other problems. Whatever the cause, these symptoms may warrant attention, especially if they occur in a cluster or persist. A mental health professional or a caring and concerned adult may be able to help a youngster successfully overcome a crisis and develop more effective coping skills, thereby preventing further problems. It is important to notice and respond to significant changes in the student's physical appearance, personality, attitude, or behavior.

Treatment for Drug Use

In 2003, Drug Strategies, a nonprofit research institute that promotes more effective approaches to the nation's drug problems, published "Treating Teens: A Guide to Adolescent Drug Programs", a 60-page guide that identifies key elements of effective treatment for adolescents:

- Assessment is performed to determine proper treatment match.
- Treatment approach is comprehensive and integrated treatment.
- Families are actively involved in treatment.
- Program content is geared to the developmental level and unique issues of adolescents.
- Program design is sufficiently engaging to keep teens in treatment.
- Staff are professional, understand adolescent development, and work effectively with families.

- Treatment approach recognizes gender and cultural differences.
- Programs educate teens to recognize and deal with factors that lead to relapse.

Anabolic Steroids

Anabolic steroids are synthetic substances related to male sex hormones (androgens). Anabolic steroids promote growth of skeletal muscle (anabolic effect) and development of male sexual characteristics (androgenic effects). Steroids have legitimate medical applications but are also taken by adolescents, usually student athletes, to increase muscle size and improve athletic performance. When adolescents abuse steroids in this way, they often take them in combination (a process called “stacking”) or in doses up to 100 times larger than would be medically prescribed.

Scope of the Problem

In the 2004 Monitoring the Future Study, which surveyed students in 8th, 10th, and 12th grades, 1.9% of 8th graders, 2.4% of 10th graders, and 3.4% of 12th graders reported using steroids at least once in their lifetimes.

Illicit anabolic steroids are often sold at gyms, at competitions, and through mail operations after being smuggled into this country. The most common way to obtain steroids for illegal use is by smuggling them from other countries that do not require a prescription for purchase. Steroids are also sometimes illegally diverted from U.S. pharmacies or synthesized in clandestine laboratories. Steroids that originate in illegal laboratories may be adulterated in ways that compound the already substantial dangers of misuse.

These drugs are often used in patterns called “cycling,” which involves taking multiple doses of steroids over a specific period of time, stopping for a period, and starting again, or “pyramiding,” in which users slowly escalate steroid use (increasing the number of drugs used at one time and/or the dose and frequency of one or more steroids), reaching a peak amount at mid-cycle and gradually tapering the dose toward the end of the cycle.

Consequences

A wide range of adverse side effects are associated with anabolic steroid abuse (National Institute on Drug Abuse (NIDA), 2005; American Academy of Pediatrics, 2002). Some side effects are physically unattractive, but not dangerous. Males may develop acne, breast enlargement, and baldness. Females may develop more masculine characteristics, such as decreased body fat and breast size, deepening of the voice, excessive growth of body hair, and loss of scalp hair. Males risk reduced sperm production, shrinking of the testicles, impotence, and difficulty or pain in urinating. In addition, steroid use among both male and female adolescents may prematurely stop the lengthening of bones, resulting in stunted growth.

Other physical effects can be life-threatening. In both males and females, steroid use can result in liver cancer, heart attacks, and elevated cholesterol levels. People who inject steroids also run the risk of contracting or transmitting HIV, hepatitis B, and infective endocarditis, a potentially fatal inflammation of the inner lining of the heart. Bacterial infections can also develop at the injection site, causing pain and abscess.

Steroid abusers are also prone to irritability and aggression. Symptoms of steroid withdrawal include mood swings, fatigue, restlessness, loss of appetite, insomnia, reduced sex drive, and depression. If untreated, steroid-induced depression can persist for a year or more after an individual has stopped taking the drug, which can lead to suicidal behavior.

Preventive Measures

The National Institute on Drug Abuse (NIDA) suggests the following measures to encourage

adolescents to avoid use of anabolic steroids:

- Present a balanced picture of what these drugs can do for them and to them. Most adolescents know that anabolic steroids build muscles and can increase athletic prowess. Research has shown that failure to acknowledge these potential benefits creates a credibility problem and can actually make youths more likely to try the drugs.
- Make use of the authority of coaches and the team ethos. In one NIDA-sponsored program currently under study, coaches and team leaders are trained to educate team members about the effects of anabolic steroid abuse, both desirable and adverse, in the general context of training. They also provide information about nutrition, exercise, and other training techniques that may help athletes improve performance by as much as 50% without steroid abuse. This program also reduces alcohol abuse among teammates (U.S. Department of Health and Human Services, 2006).

NIDA's website at http://www.steroidabuse.org provides additional science-based information about steroid abuse and how to prevent it. Additional information on the ATLAS program discussed here, as well as ATHENA, a program developed for female athletes, may be found in Resources: Curricula/Teaching Tools and Registries of Effective Programs at the end of this chapter.

Recognizing and Responding to Problems

The warning signs shown below may indicate steroid abuse (U.S. Department of Health and Human Services, SAMHSA, 2006).

For males:

- baldness
- development of breasts
- impotence

For females:

- growth of facial hair
- deepened voice
- breast reduction

For both males and females:

- jaundice (yellowing of the skin)
- swelling of feet or ankles
- aching joints
- bad breath
- mood swings
- nervousness
- trembling

Other indicators include rapid weight gain or muscle development and acne flare-up (American Council for Drug Education, 2002).

Inhalants

Abuse of inhalants is a large and growing problem among school-age youth and one that frequently goes undetected. Inhalant abuse is the intentional breathing in of gas and vapors with the goal of getting high. (It does not refer to snorting cocaine or smoking substances such as tobacco, marijuana, crack cocaine, or opium.) More than 1,000 common household, school, and industrial products can be abused, including solvents, solvent-based products, gases, fuels, and aerosols. In SAMHSA's 2002–2004 National Surveys on Drug Use and Health, the types of

inhalants most frequently mentioned as having been used by recent initiates were: glue, shoe polish, or toluene (30.3%); gasoline or lighter fluid (24.9%); nitrous oxide or “whippets” (24.9%); and spray paints (23.4%).

Inhalants are attractive to children because they are easy to obtain, free or inexpensive, and difficult to detect. Furthermore, many adults are either unaware of the problem or do not understand the severity of the problem. Inhalants produce an effect within seconds that may last from 15–45 minutes. These substances generally act as central nervous system depressants. After an initial euphoria a depressed state-of-mind follows, accompanied by sleepiness or sleep. Inhalants lower breathing and heart rates and impair coordination and judgment. Use is repeated to maintain intoxication.

Scope of the Problem

One out of eight Massachusetts high school students has tried inhalants, but risk of experimentation begins much earlier. Use can start as early as the 3rd grade and generally increases through middle school, peaking in grades 7–9. In the national Monitoring the Future surveys, 8th graders regularly report the highest rates of abuse. The percentage of 8th graders who have used inhalants at least once has been increasing steadily, from 15.2% in 2002 to 17.3% in 2004 (NIDA, 2005).

Equally alarming to the increase in reported use is the fact that awareness of risk on the part of students is declining. In 2001, 45.6% of 8th graders surveyed by Monitoring the Future said they believed there was a “great risk” in trying inhalants once or twice. By the 2004 survey, that percentage had dropped to 38.7%. Past research has shown a decrease in perceived risk of drug use is often related to an increase in use (NIDA, 2005; Center for Substance Abuse Research, 2005).

Consequences

Inhalants can cause severe and permanent damage to the brain, peripheral nerves, kidneys, liver, bone marrow, and other organs. Some inhalants cause irreversible hearing loss, while others produce chromosome and fetal damage much like fetal alcohol syndrome. More than any other substance, inhalants can cause sudden death, resulting from heart arrhythmia and suffocation. Chronic inhalant users can develop physical addiction (with tolerance and withdrawal symptoms) and psychological dependence.

Inhalant abuse has also been linked to memory loss, learning problems, and difficulties in school. Inhalant users also tend to be truant, disruptive, and delinquent (Lloyd, 2003).

Preventive Measures

Because common and easily obtained substances may be used as inhalants, and because initiation into this form of substance abuse often occurs at an early age, the recent escalation in inhalant abuse is occurring with little attention from adults.

To avoid inadvertently contributing to the problem, schools should try to avoid using products that can be easily abused as inhalants. Many abusable solvent-based products such as spray paints, glues, gasoline, paint thinners, and products packaged in aerosol cans are found in art, shop, cosmetology, science, and culinary-arts classrooms. Permanent and dry-erase markers containing solvents are found throughout schools. Safer water-based versions of these products are available and should be used whenever possible. If solvent-based products are used, they should be used only under close adult supervision, and school staff should be aware of the quantities being used. If usage rates rise, staff should ask questions and monitor the situation closely.

Collaborating with parents/guardians, school staff can take an active role in identifying and preventing inhalant abuse. This requires that school nurses, health educators, and behavioral health staff work together to provide education on inhalant abuse. Since use may begin as early as 3rd or 4th grade, prevention activities should begin in elementary school. Activities should be coordinated with the community efforts.

The main prevention message is that inhalants are dangerous poisons. Inhalants should be equated with poisons, pollutants, and toxins, not drugs. Rather than teaching children what products can be abused or how they can be abused, the damaging effects of inhalants should be stressed. Telling youth the names and types of abusable products increases the likelihood that some youth will experiment with inhalants. Other strategies include teaching inhalant refusal skills, supporting positive youth development and leadership, and educating parents and other community members. For more information on inhalant prevention, contact your local Massachusetts Regional Center for Healthy Communities (to find a location near you, call 800-327-5050) or the Massachusetts Inhalant Abuse Task Force (617-624-5140), or see the DPH website: http://www.state.ma.us/dph/inhalant.

The use of inhalants has become a particular concern in Massachusetts. The DPH's Bureau of Substance Abuse Services created an Inhalant Abuse Task Force in 1995 to provide parents, teachers, health care workers, and other youth-serving professionals with the most up-to-date information available on the prevention of inhalant abuse. In 1996, the Task Force officially launched A Breath Away, a statewide campaign designed to increase public awareness of inhalant abuse through the dissemination of educational materials and information about effective prevention strategies.

Recognizing and Responding to Problems

Signs of inhalant use include:

- facial rash;
- blistering, rashes, or soreness around the nose, mouth, or lips;
- runny nose, secretions from the nose, or frequent sniffing;
- irritated, watery, or glazed eyes, and dilated pupils;
- frequent unexplained coughing;
- headaches;
- hand tremors;
- poor muscle control;
- unusual, harsh breath odor;
- appearance of intoxication;
- drowsiness;
- impaired vision, memory, and thought;
- extreme mood swings;
- uncontrolled laughter;
- grandiose and hostile speech;
- bizarre risk-taking;
- increased irritability and anger;
- anxiety;
- violent outbursts;
- nausea, loss of appetite, and vomiting; and
- hallucinations and convulsions.

If you suspect that a child or adolescent is abusing inhalants, be alert to the presence of discarded product containers; bags, rags, gauze, or soft drink cans used to inhale the fumes; and any traces of odors of paint, gasoline, or glue.

Assessment

Because inhalants are seen by many substance abusers as low-status or childish, children may be reluctant or embarrassed to admit use. Furthermore, many youth confuse “inhaling” with “smoking” or “snorting.” When attempting to assess a student’s use, one question might be: “Have you ever inhaled anything to get high? For instance, this would include the gases or fumes or vapors from household products or products used in a shop, art projects, or a garage. It would not include anything you might smoke, such as tobacco, marijuana, or crack, or anything you might snort, such as cocaine.” Because youth are generally not aware of the special dangers of inhalants, any child who has experimented with them even once should receive inhalant abuse prevention education. Parent/guardian education is also essential.

A staff member or parent/guardian suspicious about a child’s behavior should follow up, asking about the possibility of inhalant use. The inquiry should specify the reason for suspicion. At times, parents/guardians or staff will need to rely on intuition, remembering that one of the attractions of inhalants is that adults don’t often suspect or recognize use. If there are questions about the inhalant effects of a certain substance, call the Regional Center for Poison Control and Prevention serving Massachusetts and Rhode Island at 800-222-1222.

Any experimentation with inhalant use is serious because even limited use can be fatal. Staff should be encouraged to work with parents/guardians to seek an alcohol and drug assessment and take appropriate action. Even if it is a false alarm, these actions send a clear message about expectations.

Emergency Treatment

If a young person is suspected of being in crisis as a result of inhalant intoxication, experts recommend several steps:

(1) Call an ambulance.
(2) Lay the person on their side to prevent aspiration of vomit.
(3) See that they get fresh air.
(4) Remain calm and supportive, and keep the person in a quiet atmosphere. Startling or agitating them may trigger a fatal adrenalin-fueled cardiac arrhythmia, a phenomenon called sudden sniffing death (SSD).
(5) Minimize distractions and keep them from moving.
(6) Stay with the person until they receive medical attention.

Remedial Treatment

Inhalants can produce both psychological dependence and physical addiction. Withdrawal symptoms can include hand tremors, nervousness, excessive sweating, hallucinations, chills, headaches, abdominal pain, muscular cramps, and delirium tremens. Individuals who are regular users of inhalants may require 30–40 days or more to detoxify. Adequate detoxification is crucial to successful treatment. Inhalant abusers have very high relapse rates and may experience multiple psychological and social problems (Focus Adolescent Services, 2000). Aftercare and follow-up are extremely important.

Through its network of community providers, DPH supports outpatient and residential programs for youth who are abusing inhalants and other drugs. For information on programs, call the Massachusetts Substance Abuse Information and Education Helpline at 800-327-5050.

Gambling

Scope of the Problem

Although compulsive gambling is often considered an adult problem, recent research indicates that a sizeable proportion of youth, especially male youth, engage in gambling activities, both legal and illegal, and that adolescents may be more likely to become addicted to gambling than they are to alcohol, smoking, and drugs. DPH has identified compulsive gambling as a serious public health issue. At least 78% of all Massachusetts youth have placed a bet by age 18, and studies show that 10% to 17% of students have a gambling problem (a proportion that is 2–3 times higher than the general population). Moreover, tens of thousands of students are negatively impacted by a parent's gambling disorder (Massachusetts Council on Compulsive Gambling, 2005).

Youth Gambling International, a research center at McGill University, notes that gambling has become normalized in many cultures. It is not unusual for a parent to purchase a lottery ticket for a child at an early age or to take children to play Bingo. In retrospective studies, adult problem gamblers report that their gambling began quite early, often between the ages of 10 and 19.

Youth Gambling International's research and clinical work suggest that adolescents who gamble excessively are not motivated primarily by desire for money. Instead, the primary attraction is the escape that gambling offers. Adolescents with serious gambling problems report that, while they are gambling, nothing else matters, and they are able to forget about their problems.

Youth Gambling International reports that, despite some conflicting findings, the overall consensus is that:

- Gambling is more popular among males than females.
- Adolescents with problem/pathological gambling behaviors have lower self-esteem and higher rates of depression, dissociate more frequently when gambling, are greater risk takers, and are at increased risk for the development of an addiction or multiple addictions.
- Adolescents with serious gambling problems are at heightened risk for suicidal ideation and suicide attempts.
- Quality friendships and relationships are often lost and replaced by gambling associates.
- Adolescent problem gamblers report beginning gambling at earlier ages (approximately age 10), with many reporting an early big win.
- Adolescents experience a rapid progression from social gambling to problem gambling.
- Adolescents with gambling problems often have parents, relatives, or friends with similar problems.
- Problem and pathological gambling in adolescence result in increased delinquency and crime, disruption of familial relationships, and decreased academic performance.

Preventive Measures

The Massachusetts Council on Compulsive Gambling, an organization dedicated to reducing the social, financial, and emotional costs of problem gambling (including card games such as poker and betting on sports events) recommends that students, parents, teachers, and coaches consider adopting the following prevention techniques:

- Include prevention of problem gambling in your school's health or math curriculum.
- Include gambling guidelines in school and team policies.
- Reconsider giving lottery tickets as gifts to students.
- Reconsider gambling as a fundraising activity.
- Mention problem gambling in discussions or presentations about tobacco, alcohol, or drug addiction.

- Make posters or literature available that demonstrate the risks of student gambling.
- Recognize problem gambling as a disorder that affects the gambler's whole family.

The Council offers a curriculum for middle school students entitled "Facing the Odds: The Mathematics of Gambling and Other Risks," developed with Harvard Medical School's Division on Addictions (see Resources). It also provides consultation on policy development and review, as well as training, for all schools in the Commonwealth.

Recognizing and Responding to Problems

Signs and Symptoms

Students with gambling problems are likely to engage in frequent talk about gambling, spend more time or money on gambling (including card tournaments) than they can afford, borrow money in order to gamble, sell sports betting cards or organize sports pools, and/or possess gambling paraphernalia such as lottery tickets or poker items. Moreover, such students may miss or be late for school, work, or family activities due to gambling and may feel sad, anxious, fearful, or angry about gambling losses.

Screening and Identification

One recent study found that only 1 in 7 adolescent problem gamblers (identified through a semi-structured interview that included diagnostic criteria for pathological gambling) recognized that they had a problem. None of the youth had sought treatment (Ladouceur et al., 2004).

Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) defines pathological gambling as "persistent and recurrent maladaptive gambling behavior" that is indicated by 5 or more of the following criteria (and is not better accounted for by a manic episode). The individual:

- is preoccupied with gambling;
- needs to gamble with increasing amounts of money to achieve the desired excitement;
- has repeated unsuccessful efforts to control gambling;
- is restless or irritable when trying to cut down or stop;
- after losing, often returns another day to get even;
- lies to others to conceal the extent of involvement with gambling;
- has committed illegal acts to finance his or her gambling;
- has jeopardized or lost a significant relationship, job, or educational or career opportunity due to gambling; and
- relies on others to provide money to relieve a desperate financial situation caused by gambling.

One screening tool, the Lie/Bet Screening Questionnaire (Johnson et al., 1997) uses 2 questions to identify pathological gambling problems:

- Have you ever felt the need to bet more and more money?
- Have you ever had to lie to people important to you about how much you gamble?

A separate Four Question Screening Tool based on the CAGE questioning technique asks the following questions:

- Have you ever borrowed money in order to gamble or to cover lost money?
- Have you ever thought you might have a gambling problem, or been told that you might?
- Have you ever been untruthful about the extent of your gambling, or hid it from others?
- Have you ever tried to stop or cut back on how much or how often you gamble?

(Permission granted. Based on the revised CAGE. Adapted by Walter Miller; LCSW, NCGC and Christopher Armentano; NCGC, Connecticut Department of Mental Health and Addiction Services/Problem Gambling Services. The original CAGE was developed by Dr. John Ewing, founding director of the Bowles Center for Alcohol Studies, University of North Carolina at Chapel Hill.)

In addition, the Massachusetts Council on Compulsive Gambling has developed the Massachusetts Gambling Screen (MAGS) for assessing adolescent gambling disorder. The MAGS is available on the Council's website, http://www.masscompulsivegambling.org.

Treatment

Massachusetts is one of 16 states offering public funds for the treatment of compulsive gamblers and their families. A student with a gambling problem can call the Massachusetts Council on Compulsive Gambling's 24-hour, confidential helpline at 800-426-1234.

SUMMARY

Schools and community agencies play a critical role in addressing alcohol, tobacco, and other drug use among students, as well as other addictive behaviors such as gambling. The age when a child or adolescent begins using an illegal substance, or engages in illegal activity, is a critical factor in future abuse. Prevention is paramount as the onset of substance abuse and addiction can occur at any age, indicating prevention messages must be shared and reiterated at every grade, kindergarten through 12. In addition to health education, schools must have strong policies that clearly convey that the use of alcohol, tobacco, and other drugs, as well as gambling, will not be tolerated. Policies must be consistently enforced for all students. Furthermore, these policies, as well as the laws governing illegal use and gambling and relevant MIAA rules, must be clearly communicated to students, families, and the community. The community and schools should collaborate in the effort to provide clear and consistent messages and should coordinate activities for students, parents, community, and schools.

When a student is suspected of or identified as misusing substances or gambling, protocols must be in place to address the issues, involve families, and refer for treatment. Protocols should establish supports for students after they receive treatment, to help prevent relapse and support reentry into school, if regular education has been interrupted for treatment.

Schools clearly play a pivotal role in enforcing regulations regarding substance use, abuse, and addictive behaviors, as well as in providing prevention education and in supporting access to treatment. Community agencies, law enforcement, youth organizations, faith-based organizations, health care providers, and others are important partners to assist families in preventing and combating illegal substance use, adjusting community norms as needed, and providing caring, accessible treatment for youth who require it.

RESOURCES: CURRICULA/TEACHING TOOLS AND REGISTRIES OF EFFECTIVE PROGRAMS

Alcohol/Drugs

Across Ages
Center for Intergenerational Learning
Website: http://www.temple.edu/cil/Acrossageshome.htm
Across Ages is a school- and community-based drug prevention program for youth aged 9–13 that seeks to strengthen the bonds between adults and youth and provide opportunities for positive community involvement. The unique feature of Across Ages is the pairing of older adult mentors (age 55 and above) with young adolescents, specifically youth making the transition to middle school. The overall goal of the program is to increase the protective factors for high-risk students in order to prevent, reduce, or delay the use of alcohol, tobacco, and other drugs and the problems associated with such use.

AlcoholEdu for High School
Outside the Classroom
Website: http://www.outsidetheclassroom.com
This interactive, online prevention program is aimed at curbing alcohol use among high school students. Developed by Outside the Classroom in collaboration with Mothers Against Drunk Driving (MADD), the program consists of 3 30-minute segments that reinforce key concepts and enable students to answer questions about their own behavior and the information presented in the course. Individual responses are confidential, but school officials are able to obtain an overview of students' experiences and attitudes towards alcohol. Outside the Classroom, located in Newton, MA, previously developed a similar program for use by college students.

American Council for Drug Education (ACDE)
164 West 74th Street
New York, NY 10023
Phone: 800-488-DRUG (3784)
E-mail: acde@phoenixhouse.org
Website: http://www.acde.org/Default.asp
ACDE is a substance abuse prevention and education agency that develops programs and materials based on the most current scientific research on drug use and its impact on society. Within the ACDE website is a special section for educators called *Facts for Educators:* http://www.acde.org/educate. It offers basic drug information, tips for talking about drugs in the classroom, age-appropriate lesson plans, and more.

ATLAS (Athletes Training and Learning to Avoid Steroids) and ATHENA (Athletes Targeting Healthy Exercise & Nutrition Alternatives)
Division of Health Promotion and Sports Medicine
Oregon Health & Science University
Websites: http://www.atlasprogram.com and http://www.ohsu.edu/hpsm/athena.html
ATLAS is a multicomponent, school-based program for male high school athletes (ages 13–19). It capitalizes on team-centered dynamics and uses positive peer pressure and role modeling to reduce the use of anabolic steroids, alcohol and other drugs, and performance-enhancing supplements. Delivered to a school sports team with instruction by student athlete peers and facilitation by coaches, ATLAS promotes healthy nutrition and exercise behaviors as alternatives to substance use. The 10-session curriculum is highly scripted and contains interactive and entertaining activities that make it easy and desirable to deliver, enhancing the fidelity of the intervention. The product of 10 years of research and field testing, ATLAS focuses specifically on adolescent male athletes' risk and protective factors. **Recognitions:** *Model Program,* Substance Abuse and Mental Health Services Administration (SAMHSA); *Exemplary Program,* Office of Juvenile Justice and Delinquency Prevention; *Exemplary Program,* Safe and Drug Free Schools Program (2001).

The ATHENA curriculum, initiated several years after ATLAS, is tailored to address the unique risk and protective factors of female athletes. Its content and sequence are designed to reduce disordered eating and use of body-shaping and other drugs while promoting healthy nutrition and exercise. ATHENA is a school-

based, team-centered prevention program for female athletes on middle school and high school sports, dance, and cheerleading teams. The curriculum is 8 45-minute sessions delivered to a team and integrated into their usual sport training activities. No new class hours are required. ATHENA uses scripted lesson plans and is peer-taught and coach-facilitated.

CheckYourself.com
Partnership for a Drug-Free America
Website: http://checkyourself.com
CheckYourself.com offers older teens an opportunity to think in a focused way about their relationship with drugs and alcohol and invites them to consider whether their substance use risks turning into a problem for them. The site allows visitors to "look in the mirror" by answering quiz questions about their lifestyle, reading first-person stories, communicating with other teens, and playing decision games to see how they might act in situations involving drugs and alcohol. Support for CheckYourself.com is provided by the Partnership for a Drug-Free America. The Partnership provides the site's factual information about drugs and alcohol and monitors postings to make sure they comply with the terms of use.

Community Intervention, Inc.
2412 University Ave SE, Suite B
Minneapolis, MN 55414
Phone: 800-328-0417 or 612-332-6537
Fax: 612-342-2388
Website: http://www.communityintervention.org
Community Intervention provides training seminars and educational resources for professionals who work with youth (ages 5–18, grades K–12). Areas covered include teenage tobacco intervention and cessation; positive alternatives to suspension; alcohol, marijuana, and other drug prevention and intervention; student assistance programs; support-group facilitation; and community mobilization.

The Cool Spot
National Institute of Alcohol Abuse and Alcoholism (NIAAA)
Website: http://www.thecoolspot.gov
The Cool Spot, "the young teen's place for info on alcohol and resisting peer pressure," is a website created for kids aged 11–13 by NIAAA. The content of The Cool Spot is based on a curriculum for grades 6–8 developed by the University of Michigan. The curriculum was created for the Alcohol Misuse Prevention Study (AMPS), a large-scale project supported by NIAAA.

D.A.R.E. (Drug Abuse Resistance Education) America
Website: http://www.dare-america.com
This series of classroom lessons, led by police officers, teaches children in grades K–12 how to resist peer pressure and live productive drug-free and violence-free lives.

Drug Prevention and Youth Safety Resources
Smith Initiatives for Prevention & Education
College of Education
University of Arizona
P.O. Box 210069
Tucson, AZ 85721-0069
Phone: 520-626-4964
Website: http://www.drugstats.org

Guidelines for Selecting Content for School Drug Education Curricula
UNESCO (United Nations Educational, Scientific and Cultural Organization)
Focusing Resources on Effective School Health (FRESH) Program
E-mail: bpiweb@unesco.org
Website: http://www.unesco.org/education/fresh
This publication discusses the role that school-based drug education programs can play in preventing or reducing drug use and the adverse consequences of drug use to individuals and society. It provides guidelines for selecting content and teaching methods for school drug education programs and suggests

knowledge, attitude, and skill objectives for drug prevention education at the lower, middle, and upper class levels.

Heads Up: Real News About Drugs and Your Body
National Institute on Drug Abuse (NIDA)/Scholastic, Inc.
Website: http://www.drugabuse.gov/scholastic.html
NIDA has teamed with Scholastic, a leading provider of educational materials for children and teachers, to bring science-based information about drug abuse U.S. schoolchildren in grades 6–10. *Heads Up,* which includes articles and activities created to educate students on the repercussions of drug use, is delivered via the pages of Scholastic's publications *Junior Scholastic, Science World,* and *Up Front*. Collections of articles and reproducible fact and activity sheets are also available for download at the website.

Making the Grade: A Guide to School Drug Prevention Programs
Drug Strategies
Phone: 202-289-9070
Website: http://www.drugstrategies.org/pubs.html#making
A comprehensive guide to the most widely used drug prevention programs in the nation, *Making the Grade* helps educators and parents make informed decisions on how to spend limited resources. First published in 1996, *Making the Grade* has been completely updated and expanded to include: reviews of 50 curricula, many of which have been revised since the first edition; 10 new curricula, as well as 6 curricula that focus exclusively on alcohol or tobacco; information on cost, teacher training, developmental appropriateness, fidelity of implementation, and family involvement; and comparison of 14 programs that have rigorous evaluation data.

Media Sharp
Website: http://www.cdc.gov/tobacco/mediashrp.htm
CDC's MediaSharp^{SM} kit is a free tool designed to help middle school and high school students evaluate media messages about alcohol and tobacco and make healthy, lifesaving choices. The kit includes a 7-minute video and an easy-to-follow teachers' guide with activities, handouts, and discussion topics. MediaSharp^{SM} complies with CDC's Guidelines for School Health Programs to Prevent Tobacco and Alcohol Use.

National Youth Anti-Drug Media Campaign
Website: http://www.theantidrug.com/teachersguide/index.asp
Working with the nation's leading experts in the fields of parenting and substance abuse prevention, TheAntiDrug.com provides parents and other adult caregivers with tools to use with kids. It also serves as a drug prevention information center and a supportive community where parents can interact and learn from one another. A teachers' guide developed by the National Youth Anti-Drug Media Campaign and offered on the website provides teachers with ideas and resources for incorporating drug prevention messages into the classroom.

NIDA Goes to School — Science-Based Drug Abuse Education
Website: http://backtoschool.drugabuse.gov
This website is a source of free information about the latest science-based drug abuse publications and teaching materials. It lists specific curricula and other teaching aids listed on these pages.

Preventing Drug Use Among Children and Adolescents: A Research-Based Guide for Parents, Educators, and Community Leaders (Second Edition)
Website: http://www.nida.nih.gov/Prevention/examples.html
This guide from the National Institute on Drug Abuse (NIDA) contains examples of research-based drug-abuse prevention programs.

Prevention 2000: Moving Effective Programs into Practice
Website: http://www.rwjf.org/files/publications/other/Prevention2000.pdf
This report from the Robert Wood Johnson Foundation identifies a range of conclusions and recommendations compiled at an October 2000 symposium focusing on advancing the prevention of alcohol, tobacco, and other drug problems in the United States.

Prevention Pathways
Website: http://preventionpathways.samhsa.gov
Prevention Pathways is an online gateway to information on prevention programs, program implementation, evaluation technical assistance, online courses, and many other prevention resources. The site is sponsored by SAMHSA's Center for Substance Abuse Prevention.

Project ALERT
Website: http://www.projectalert.com
Project ALERT is a drug prevention curriculum for middle school students (ages 11–14) that has been shown to dramatically reduce both the onset and the regular use of substances. The 2-year, 14-lesson program, developed by RAND, a leading think tank on drug policy, focuses on the substances that adolescents are most likely to use: alcohol, tobacco, marijuana, and inhalants. Guided classroom discussions and small-group activities stimulate peer interaction and challenge student beliefs and perceptions, while intensive role-playing activities help students learn and master resistance skills. Homework assignments that also involve parents extend the learning process by facilitating parent-child discussions of drugs and how to resist using them. These lessons are reinforced through videos that model appropriate behavior. **Recognitions:** *Model Program,* SAMHSA; *Exemplary Program,* U.S. Department of Education; *Exemplary Program,* White House Office of National Drug Control Policy.

Project Northland
Hazelden, Inc.
Phone: 800-328-9000
Website: http://www.hazelden.org/bookstore
Project Northland, developed by researchers at the University of Minnesota with a grant from the National Institute on Alcohol Abuse and Alcoholism, is a comprehensive alcohol use prevention program for students in grades 6–8. This program has been shown to reduce alcohol use in this age group. Participants learn that fewer of their peers drink alcohol than they thought, and they also learn how to resist pressure to drink and to talk with their parents about what happens if they do drink. **Recognitions:** *Model Program,* SAMHSA; *Exemplary Program,* U.S. Department of Education; *"Rated A" Program,* Drug Strategies, Making the Grade.

Protecting You/Protecting Me (PY/PM)
Mothers Against Drunk Driving (MADD)
Website: http://www.MADD.org/pypm
PY/PM, a 5-year, classroom-based alcohol-use prevention curriculum for elementary students in grades 1–5 (ages 6–11) and high school students in grades 11 and 12 (ages 16–18), is designed to reduce alcohol-related injury and death among youth. **Recognitions:** *Model Program,* SAMHSA.

SAMHSA (Substance Abuse and Mental Health Services Administration) Model Programs
Website: http://modelprograms.samhsa.gov
The SAMHSA Model Programs featured on this website have been tested in communities, schools, social service organizations, and workplaces across the U.S. and have provided solid proof that they have prevented or reduced substance abuse and other related high-risk behaviors. Programs included have been reviewed by SAMHSA's National Registry of Evidence-based Programs and Practices (NREPP).

Science Education Programs at NIAAA
National Institute on Alcohol Abuse and Alcoholism
Website: http://pubs.niaaa.nih.gov/publications/Science/main.htm
NIAAA offers a variety of curricular materials that can be used in the science classroom to create awareness about the issue of alcohol use and combat the problem of underage drinking through the application of an inquiry-based approach:

- *Better Safe Than Sorry — Preventing a Tragedy: A Science and Health Curriculum.* This flexible (1–4 class periods), inquiry-based curriculum module was developed by researchers at UNC-Chapel Hill as well as teachers and other educational consultants. Materials and lessons are adapted for use in a middle school science classroom, aligned with the National Science Education Standards (NSES), and based on current research relevant to a life-science curriculum. All kits are free of charge and include guided teacher instructions for implementation,

data tables and background materials, a video with guided lab instruction and background on fetal alcohol syndrome, a CD-ROM with all hardcopy materials and a post-assessment game, color transparencies, brochures, and ordering information for an accompanying hands-on experiment involving varying concentration levels of ethanol and the growth and development of brine shrimp.

- *Understanding Alcohol: Investigations Into Biology and Behavior* (online ordering). This middle school curriculum supplement involves 6 hands-on, inquiry-based lessons and Web-based components that include simulations of intoxicated and sober mice (varying alcohol concentrations, time and genetics, calculations, and impact on BAC levels), as well as depictions of intoxicated drivers, requiring students to make observations and inferences. The last lesson is an interdisciplinary piece that requires students to synthesize information from a variety of primary sources in developing a justification for positions on various legal and social issues related to the science of alcohol. All activities and lessons were field-tested in a variety of educational settings, and all teacher background and overall science content were verified by experts at NIAAA. Web activities, downloadable teacher materials, and technical information may be accessed at http://science.education.nih.gov/supplements/nih3/alcohol/default.htm.
- *My Brain My Body — A Comprehensive Web-Based Curriculum Module* (http://www.mybrainmybody.com). This online educational tool for middle school students promotes discussions about the sensitive psychosocial issues of alcohol abuse while increasing and extending students' scientific understanding. Each 45-minute online lesson is supplemented by videos, overhead transparencies, live Internet polls, lab activities, and hardcopy classroom activities.

Stop Underage Drinking
Website: http://www.stopalcoholabuse.gov/educators.aspx
Supported by a coalition of federal agencies, this website provides educators with information and resources to open a dialog with students about underage alcohol use.

Too Good For Drugs (TGFD)
Mendez Foundation
Website: http://www.mendezfoundation.org
TGFD is a school-based prevention program designed to reduce the intention to use alcohol, tobacco, and illegal drugs in middle school and high school students. Developed by the Mendez Foundation for use with students in grades K–12 (ages 5–18), TGFD offers a separate, developmentally appropriate curriculum for each grade level and is designed to develop the following: personal and interpersonal skills relating to alcohol, tobacco, and illegal drug use; appropriate attitudes toward alcohol, tobacco, and illegal drug use; knowledge of the negative consequences of alcohol, tobacco, and illegal drug use and benefits of a drug-free lifestyle; and positive peer norms. The program aims to engage students through role-play, cooperative learning, games, small-group activities, and class discussions, and includes a family component.
Recognitions: *Model Program,* SAMHSA; *Excellence in Prevention,* American Medical Association.

Words Can Work
E-mail: info@wordscanwork.com
Website: http://wordscanwork.com
Created and produced by Blake Works, Inc., with research assistance from advisors at Harvard Medical School and CDC, *Words Can Work* is both an informational website and a source of booklets, DVDs, videos, and other materials that give young people and parents the information — and the words — to talk about the challenges kids face growing up. Products include:

- *Alcohol: True Stories* (VHS/DVD): A 20-minute film, hosted by Matt Damon, with a guide for leading discussion with young people and parents.
- *Drugs: True Stories* (VHS/DVD): A 20-minute film recommended for grades 5 and up, parents, and other caregivers.
- *Steroids: True Stories* (VHS/DVD): A 20-minute film, hosted by Curt Schilling, recommended for grades 5 and up, parents, and other caregivers, with discussion guide.

Gambling

Facing the Odds: The Mathematics of Gambling and Other Risks
Harvard Medical School Division on Addictions and the Massachusetts Council on Compulsive Gambling
Website: http://www.divisiononaddictions.org
This middle school curriculum on probability, statistics, and mathematics was designed to enhance students' critical thinking ability, number sense, and knowledge of the mathematics of gambling so that they can develop rational views about gambling and make their own informed choices when confronted with gambling opportunities.

Problem Gambling Prevention Resource Guide for Prevention Professionals
Oregon Department of Human Services, Office of Mental Health & Addiction Services
Website: http://www.gamblingaddiction.org/Prevent/PreventGuide.pdf
This resource guide is designed to provide addictions-prevention providers and other professionals with information on potential relationships between problem gambling and other problem behaviors and, further, to equip providers with information about evidence-based addictions-prevention programs, including gambling-specific prevention programs.

Wanna Bet?
North American Training Institute, a division of the Minnesota Council on Compulsive Gambling
Website: http://www.nati.org
Wanna Bet? is a field-tested interdisciplinary curriculum for grades 5–8 designed to discourage underage gambling through improved critical thinking and problem solving. It includes an educator's guide, an 11-minute video, "Andy's Story," a Wanna Bet? Resource Guide, overhead transparencies, a bibliography, and a resource list. This curriculum also includes a Gambling Fact Sheet, a Brief History of Gambling, and a Parent Letter, all of which are copy ready. *Wanna Bet?* magazine is an interactive online publication designed by teens for teens.

Tobacco

Creating Health-Promoting, Tobacco-Free Schools
UNESCO (United Nations Educational, Scientific and Cultural Organization)
Focusing Resources on Effective School Health (FRESH) Program
E-mail: bpiweb@unesco.org
Website: http://www.unesco.org/education/fresh
A lesson plan designed for teachers working with primary and secondary school students, this tool is intended to help in creating a health-promoting school with a tobacco-free policy by teaching students to develop an advocacy plan to contribute to tobacco-control efforts in their schools.

Media Sharp
Website: http://www.cdc.gov/tobacco/mediashrp.htm
(See description under Alcohol/Drugs.)

Project ALERT
Website: http://www.projectalert.com
(See description under Alcohol/Drugs.)

Project Towards No Tobacco Use (TNT)
ETR Associates
Website: http://www.etr.org
TNT, a comprehensive, classroom-based curriculum developed at the University of Southern California's Institute for Health Promotion and Disease Prevention, is designed to prevent or reduce tobacco use in youth aged 10–15 (grades 5–10). Upon completion of this program, students will be able to describe the course of tobacco addiction, the consequences of using tobacco, and the prevalence of tobacco use among peers. Delivered in 10 core and 2 booster lessons, TNT is proven effective at helping youth to: resist tobacco use and advocate no tobacco use; demonstrate effective communication, refusal, and cognitive coping skills; identify how the media and advertisers influence youth to use tobacco products; identify methods for building

their own self-esteem; and describe strategies for advocating no tobacco use. Because tobacco use is determined by multiple causes, TNT is designed to counteract several different causes simultaneously.
Recognitions: *Model Program,* SAMHSA; *Programs That Work,* National Institute on Drug Abuse; *Exemplary Program,* U.S. Department of Education.

SAMHSA (Substance Abuse and Mental Health Services Administration) Model Programs
Website: http://modelprograms.samhsa.gov
(See description under Alcohol/Drugs.)

Too Good For Drugs (TGFD)
Mendez Foundation
Website: http://www.mendezfoundation.org
(See description under Alcohol/Drugs.)

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS (GENERAL)

Adolescent Risk Communication Institute (ARCI)
Annenberg Public Policy Center
3535 Market Street, Suite 200
Philadelphia, PA 19104-3309
Phone: 215-898-9400
Fax: 215-898-7116
Website: http://www.annenbergpublicpolicycenter.org/07_adolescent_risk/adolescent_risk.htm
Formally established in January 2002 with a grant from the Annenberg Foundation, ARCI brings together outstanding researchers to synthesize knowledge about prevention of risky behaviors in adolescents, and translates these scholarly findings for use by young people and their families.

American Academy of Health Care Providers in the Addictive Disorders
314 West Superior Street, Suite 702
Duluth, MN 55802
Phone: 218-727-3940
Fax: 218-722-0346
E-mail: info@americanacademy.org
Website: http://www.americanacademy.org
This website offers information on addictions research, diagnosis, and treatment.

American Foundation for Addiction Research (AFAR)
7711 E. Greenway Road, Suite 211
Scottsdale, AZ 85260
Phone: 480-368-2688
Website: http://www.addictionresearch.com
AFAR is dedicated to fostering scientific research, understanding and disseminating the knowledge of the causes and nature of addictive disorders.

American Medical Association (AMA)
Office of Alcohol and Other Drug Abuse
515 N. State Street
Chicago, IL 60610
Phone: 800-621-8335
Website: http://www.ama-assn.org/ama/pub/category/3337.html
The Office of Alcohol and Other Drug Abuse was created by a collaboration of the AMA and the Robert Wood Johnson Foundation to reduce underage alcohol abuse.

American Society of Addiction Medicine (ASAM)
4601 North Park Avenue
Upper Arcade, Suite 101
Chevy Chase, MD 20815-4520
Phone: 301-656-3920
Website: http://www.asam.org
ASAM is dedicated to increasing access to and quality of treatment, education of the medical community and the public, and promotion of research and prevention.

The Brief Addiction Science Information Source (BASIS)
Website: http://www.basisonline.org
Created by the Cambridge Health Alliance, an affiliate of Harvard Medical School and one of the country's primary centers for the study of addictive behavior, this website provides the general public, treatment providers, policy makers, and other interested individuals with direct access to the latest scientific information and resources on addiction, including self-help tools and screening resources. Five weekly science reviews are available here: *DRAM: The Drinking Report for Addiction Medicine,* which covers issues related to alcohol; *ASHES: Addiction Smoking Health Education Service,* which covers tobacco use; *STASH: Science Threads on Addiction, Substance Use, and Health,* which addresses substance use and abuse; *The WAGER,* a research bulletin on problem gambling published by the Division on Addictions at Harvard Medical School in collaboration with the Massachusetts Council on Compulsive Gambling; and a humanities review called *Addiction and the Humanities,* which discusses literature, art, music, and contemporary culture as these relate to addiction.

Brown University Center for Alcohol and Addictions Studies
Box G-BH
Brown University
Providence, RI 02912
Phone: 401-444-1800
Fax: 401-444-1850
E-mail: CAAS@brown.edu
Website: http://www.caas.brown.edu
The Center for Alcohol and Addictions Studies promotes the identification, prevention, and effective treatment of alcohol and other drug use problems through research, education, training, and policy advocacy. It operates the Addiction Technology Transfer Center of New England (ATTC-NE), a SAMHSA/CSAT-funded program that promotes systems change and increases treatment effectiveness through the translation and adoption of research-based approaches in the treatment of addictive disorders into clinical practice and educational programming.

Center for Adolescent and Child Health Research (CACHR)
1995 University Avenue, Suite 450
Berkeley, CA 94704
Phone: 510-883-5724
Fax: 510-644-0594
Website: http://www.pire.org/PRC/cachr
CACHR is part of the Prevention Research Center (PRC) of Berkeley, one of 15 national research centers dedicated to the prevention and reduction of social problems. CACHR's primary focus is to undertake and encourage basic and applied behavioral research relating to adolescent and child health and to apply behavioral research findings to the prevention of health problems among young people.

Center for Substance Abuse Prevention (CSAP)
Substance Abuse and Mental Health Services Administration (SAMHSA)
Phone: 800-729-6686
Website: http://www.prevention.samhsa.gov
CSAP, the prevention arm of SAMHSA, is the sole federal organization with responsibility for improving accessibility and quality of substance abuse prevention services. CSAP provides national leadership in the development of policies, programs, and services to prevent the onset of illegal drug use and underage alcohol and tobacco use, and to reduce the negative consequences of using substances. It operates the

RADAR Network, a substance abuse prevention and treatment infrastructure consisting of more than 700 state clearinghouses, prevention resource centers, and national, international, and local organizations supporting substance abuse prevention activities (http://ncadi.samhsa.gov/radar). CSAP also produces a monograph series, available through the National Clearinghouse for Alcohol and Drug Information (NCADI) at 800-729-6686 or http://www.health.org.

Center for Substance Abuse Research (CESAR)
4321 Hartwick Road, Suite 501
College Park, MD 20740
Phone: 301-405-9770
Fax: 301-403-8342
Website: http://www.cesar.umd.edu
CESAR is dedicated to addressing the problems substance abuse creates for individuals, families, and communities. It seeks to inform policy makers, practitioners, and the general public about substance abuse — its nature and extent, its prevention and treatment, and its relation to other problems. In addition to substance-abuse-related information on its website, CESAR provides a library that serves as a clearinghouse of information on substance abuse and related topics, as well as weekly faxed overviews of timely substance abuse topics.

Community Anti-Drug Coalitions of America (CADCA)
625 Slaters Lane, Suite 300
Alexandria, VA 22314
Phone: 800-542-2322 or 703-706-0560
Fax: 703-706-0565
Website: http://cadca.org
CADCA's mission is to build and strengthen the capacity of community coalitions to create safe, healthy, and drug-free communities. The organization supports its members with technical assistance and training, public policy, media strategies and marketing programs, conferences and special events. CADCA's National Coalition Institute, created by an act of Congress, helps build more effective community antidrug coalitions through training, technical assistance, and educational materials.

Drug Abuse Warning Network (DAWN)
1650 Research Blvd.
Rockville, MD 20850-3195
Website: http://dawninfo.samhsa.gov
DAWN is a public health surveillance system that monitors hospital emergency department (ED) visits associated with underage drinking and misuse of prescription drugs, as well as drug-related deaths. DAWN is managed by Westat, a private research corporation, on behalf of SAMHSA. Communities use DAWN to detect emerging drug problems, support grant applications for treatment and prevention services, and assess the need for public health resources.

Join Together
One Appleton Street, 4th Floor
Boston, MA 02116-5223
Phone: 617-437-1500
Website: http://www.jointogether.org
Join Together is a national resource for communities working to reduce alcohol and drug use disorders, offering a comprehensive website, daily news updates, publications, and technical assistance.

National Association on Alcohol, Drugs and Disability, Inc. (NAADD)
2165 Bunker Hill Drive
San Mateo, CA 94402-3801
Phone: 650-578-8047
Website: http://www.naadd.org
NAADD promotes awareness and education about alcohol and drug use disorders among people with physical, sensory, cognitive, and developmental disabilities.

National Black Alcoholism and Addictions Council, Inc.
5104 North Orange Blossom Trail, Suite 111
Orlando, FL 32810
Phone: 888-NBA-CORG (888-622-2674) or 407-532-2774
Website: http://www.nbacinc.org
The National Black Alcoholism and Addictions Council is a nonprofit organization that provides programs, education, and training for the prevention and treatment of alcohol and drug use disorders in the African American community.

National Center for Addiction and Substance Abuse at Columbia University (CASA)
633 Third Avenue, 19th Floor
New York, NY 10017-6706
Phone: 212-841-5200
Website: http://www.casacolumbia.org
CASA defines its mission as: informing Americans of the economic and social costs of substance abuse and its impact on their lives; assessing what works in prevention, treatment, and law enforcement; encouraging every individual and institution to take responsibility to combat substance abuse and addiction; providing those on the front lines with the tools they need to succeed; and removing the stigma of abuse and replacing shame and despair with hope.

National Clearinghouse for Alcohol and Drug Information (NCADI)
P.O. Box 2345
Rockville, MD 20747-2345
Phone: 800-729-6686
Websites: http://ncadi.samhsa.gov or http://www.health.org
SAMHSA's NCADI is a national resource for information about substance abuse prevention and addiction treatment. In addition to extensive online resources, it operates a toll-free, 24-hour phone center staffed with English- and Spanish-speaking information specialists.

National Council on Alcoholism and Drug Dependence, Inc. (NCADD)
22 Cortlandt Street, Suite 801
New York, NY 10007
Phone: 212-269-7797
Fax: 212-269-7510
E-mail: national@ncadd.org
Website: http://www.ncadd.org
NCADD is a nonprofit advocacy organization working with the legislative and executive branches of the federal government on alcohol and drug policies, advocating for alcoholic and drug-dependent persons and their families, and providing information to the public on prevention, intervention, and treatment.

National Education Association Health Information Network (NEA HIN)
1201 16th Street NW, Suite 216
Washington, DC 20036
Phone: 202-822-7570
E-mail: info@neahin.org
Website: http://www.neahealthinfo.org
NEA HIN's mission is to improve health, safety, and student achievement by providing school employees with vital, effective, and timely health information through parent, community, public, and private partnerships. Its Substance Use program includes a school-based advocacy program designed to motivate and mobilize teachers, middle school students, and parents to address the use of drugs, alcohol, and tobacco at the grassroots level.

National Latino Council on Alcohol and Tobacco Prevention (LCAT)
1616 P Street NW, Suite 430
Washington, DC 20036
Phone: 202-265-8054
Fax: 202-265-8056

E-mail: lcat@nlcatp.org
Website: http://www.nlcatp.org
LCAT's mission is to combat alcohol and tobacco problems and their underlying causes in Latino communities.

National Student Assistance Association (NSAA)
4200 Wisconsin Avenue NW, Suite 106-118
Washington, DC 20016
Phone: 800-257-6310
Fax: 215-257-6997
E-mail: info@nasap.org
Website: http://www.nasap.org
NSAA is a nonprofit organization dedicated to ensuring student success through safe, disciplined, and drug-free schools and communities. Formerly known as the National Association of Student Assistance Professionals (NASAP), the association was founded in 1987 by professionals who were concerned about the problems of student substance abuse, violence, and academic underachievement. NSAA represents the interests of thousands of student-assistance professionals across the United States.

Prevention Platform
Website: http://www.preventiondss.org
Prevention Platform is an online resource for substance abuse prevention provided by SAMHSA's Center for Substance Abuse Prevention. Optional no-fee registration allows users to save work and produce customized reports. Informational resources and interactive tools cover: assessment (determining prevention needs), capacity (improving capabilities), planning (developing a strategic plan), implementation (putting a plan into action), and evaluation (documenting outcomes).

Prevention Research Center
1995 University Avenue, Suite 450
Berkeley, CA 94704
Phone: 510-486-1111
Fax: 510-644-0594
E-mail: center@prev.org
Website: http://resources.prev.org/index.html
PRC was formed as part of the Pacific Institute for Research and Evaluation (PIRE) in 1983 as a national center for prevention research. PRC's focus is on conducting research to better understand how social and physical environments influence alcohol use and misuse. The above-listed website is PRC's Resource Link: Research in Action, providing information and practical guidance to state and community agencies and organizations, policy makers, and members of the general public who are interested in combating alcohol and other drug abuse and misuse. Materials on the website are based on the scientific research and analysis conducted at PRC. PRC and Resource Link: Research in Action are funded by the National Institute on Alcohol Abuse and Alcoholism (NIAAA).

Safe and Drug-Free Schools Program
U.S. Department of Education
Phone: 800-872-5327
Website: http://www.ed.gov/about/offices/list/osdfs/programs.html
The mission of U.S. DOE's Safe and Drug-Free Schools Program is to create safe schools, respond to crises, support prevention of drug abuse and violence, ensure the health and well-being of students, and promote development of good character and citizenship.

Silent Treatment: Addiction in America
Website: http://www.silenttreatment.info
This multimedia public education project, produced by Public Access Journalism LLC and supported by the Robert Wood Johnson Foundation, features the latest research on addiction and treatment possibilities, personal stories of daily struggles and victories on the road to recovery, and a wide range of resources.

Substance Abuse and Mental Health Data Archive (SAMHDA)
Website: http://www.icpsr.umich.edu/SAMHDA
SAMHDA, an initiative of SAMHSA's Office of Applied Studies, is an archive providing ready access to substance abuse and mental health research data and promoting the sharing of these data among researchers, academics, policy makers, service providers, and others.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS (GENERAL)

Harvard Medical School Division on Addictions
Cambridge Health Alliance, an Affiliate of Harvard Medical School
101 Station Landing, 2nd Floor
Medford, MA 02155
Phone: 781-306-8600
Website: http://www.divisiononaddictions.org
The Division's mission is to strengthen understanding of addiction through innovative research, education, and information exchange. In addition to providing critical links between Harvard Medical School students, clinical and research scientists at Harvard, and other medical education communities, the Division reaches the general public through its public forums, public education activities, middle school curriculum development, and high school student internship program.

Massachusetts Department of Education
Bureau of Student Development and Health
350 Main Street
Malden, MA 02148
Phone: 617-388-3300 x409

Massachusetts Department of Education
Safe and Drug-Free Schools Program
350 Main Street
Malden, MA 02148
Phone: 617-388-3300
Website: http://www.doe.mass.edu/ssce
Publication: *Don't Give Kids Alcohol; It's Not Worth It,* a brochure designed to educate parents and other adults about social host liability and the criminal and civil responsibility they bear if they allow underage drinking on their property.

Massachusetts Department of Public Health
Bureau of Substance Abuse Services
250 Washington Street, 3rd Floor
Boston, MA 02108
Phone: 617-624-5111
Website: http://www.state.ma.us/dph/bsas
DPH's Bureau of Substance Abuse Services offers a number of publications related to prevention of substance abuse by school-age youth that are downloadable or available for online ordering. These include:

- *Be the First to Talk with Your Pre-Teen about Alcohol, Tobacco and Other Drugs: A Family Guide,* a pamphlet for parents on effective means to prevent abuse with associated information sheets
- *7 Ways to Protect Your Teen from Alcohol and Other Drugs*
- *I Imagined This, but Heroin Lied*
- *Preventing Alcohol and Other Drug Use by Pre-Teens: Pediatric Clinician Update*
- *Inhalants Poison Your Body*

Massachusetts Health Promotion Clearinghouse
Phone: 800-952-6637 (English, Spanish, Portuguese)
Website: http://www.maclearinghouse.com

The Massachusetts Health Promotion Clearinghouse provides free health promotion materials for Massachusetts residents and health and social service providers in the Commonwealth. Funded by DPH, the Clearinghouse develops and distributes health promotion materials on a variety of health topics, including substance abuse.

Massachusetts Regional Centers for Healthy Communities (RCHC)
Massachusetts Department of Public Health, Office of Healthy Communities
250 Washington Street, 5th Floor
Boston, MA 02108
Phone: 617-624-5455
Fax: 617-624-6062
Website: http://www.mass.gov/dph/ohc/reghealthcenters.htm
Six RCHCs (see website for locations and contact information) provide training and technical support and facilitate a process for community partners across the region with a focus on science-based substance abuse prevention practices and environmental strategies. RCHCs provide communities with up-to-date research and data assistance to support best practices across each region. Each RCHC maintains a resource library that provides free loans and current and culturally appropriate resources including videos, curricula, books, and health data. Many materials are available in languages other than English.

Monitoring the Future (MTF)
National Institute on Drug Abuse (NIDA)
6001 Executive Boulevard, Room 5213
MSC 9561
Bethesda, MD 20892
Phone: 301-443-6245
Website: http://www.nida.nih.gov or http://monitoringthefuture.org
Monitoring the Future is an ongoing study of the behaviors, attitudes, and values of American secondary school students, college students, and young adults, funded by a series of grants from NIDA. MTF is conducted at the Survey Research Center in the Institute for Social Research at the University of Michigan.

RESOURCES: REGIONAL AGENCIES AND ORGANIZATIONS (GENERAL)

New England Institute of Addiction Studies (NEIAS)
75 Stone Street
Augusta, ME 04330
Phone: 207-621-2549
TTY: 207-623-0830
Fax: 207-621-2550
E-mail: neias@neias.org
Website: http://www.neias.org/SATneias.html
In existence for over 30 years, the New England Institute of Addiction Studies is dedicated to the education of professionals, volunteers, and the general public concerning alcohol and drug prevention and treatment issues. The Institute is the primary organization through which state alcohol and drug agencies develop and deliver regional educational events.

RESOURCES: SPECIFIC TOPICS

Alcohol

Center of Alcohol Studies (CAS)
Rutgers, the State University
607 Allison Road
Piscataway, NJ 08854-8001

Phone: 732-445-2190 or 732-445-4442
Fax: 732-445-3500 or 732-445-5944
Website: http://alcoholstudies.rutgers.edu
CAS is a multidisciplinary institute dedicated to acquisition and dissemination of knowledge on psychoactive substance use and related phenomena with primary emphasis on alcohol use and consequences.

DRAM: The Drinking Report for Addiction Medicine
Website: http://www.basisonline.org
DRAM is a weekly online report on alcohol-related issues from the Brief Addiction Science Information Source (BASIS). (See National Agencies and Organizations.)

Ensuring Solutions to Alcohol Problems
George Washington University Medical Center
2021 K Street NW, Suite 800
Washington, DC 20006
Phone: 202-296-6922
Fax: 202-296-0025
E-mail: info@ensuringsolutions.org
Website: http://www.ensuringsolutions.org
Ensuring Solutions, part of George Washington University Medical Center, provides research-based information on effective alcohol treatment and the barriers many people face when they seek help for a drinking problem. By publishing a variety of publicly available resources — fact sheets, issue briefs, policy briefs, educational primers, and online calculators — Ensuring Solutions shows how successful efforts to increase access to alcohol treatment have improved the lives of many individuals and their families.

Fetal Alcohol and Drug Unit
University of Washington School of Medicine
Department of Psychiatry and Behavioral Sciences
180 Nickerson Street, Suite 309
Seattle, WA 98109
Phone: 206-543-7155
Website: http://www.depts.washington.edu/fadu
This research unit is dedicated to the prevention, intervention, and treatment of fetal alcohol syndrome (FAS) and fetal alcohol effects (FAE). Its work focuses on research to identify and examine the effects of prenatal alcohol and drug exposure across the lifespan, with particular emphasis on FAS and FAE and on interventions with high-risk mothers who abuse alcohol and drugs.

Leadership to Keep Children Alcohol Free
c/o The CDM Group, Inc.
7500 Old Georgetown Road, Suite 900
Bethesda, MD 20814
Phone: 301-654-6740
Fax: 301-656-4012
E-mail: leadership@alcoholfreechildren.org
Website: http://www.alcoholfreechildren.org/en/index.htm
This coalition of governors' spouses, federal agencies, and public and private organizations works to prevent the use of alcohol by children aged 9–15. It is the only national effort that focuses on alcohol use in this age group. Founded by NIAAA and the Robert Wood Johnson Foundation, the initiative has been joined by additional federal sponsors.

Publications:

- *Keep Kids Alcohol Free: Strategies for Action* describes the public and private application of 3 science-based prevention models and includes informative online resources that highlight prevention strategies in action.
- *How Does Alcohol Affect the World of a Child?* is a statistical brochure for lay audiences that summarizes the most current research findings about early alcohol use and its effects. It is available in English and Spanish.

Mothers Against Drunk Driving (MADD)
511 East John Carpenter Freeway, Suite 700
Irving, TX 75062
Phone: 800-438-6233
Website: http://www.madd.org
MADD works to stop drunk driving, support victims, and prevent underage drinking.

National Institute on Alcohol Abuse and Alcoholism (NIAAA) Initiative on Underage Drinking
5635 Fishers Lane, MSC 9304
Bethesda, MD 20892-9304
Website: http://www.niaaa.nih.gov/AboutNIAAA/NIAAASponsoredPrograms/underage.htm
A component of NIH, NIAAA is the lead U.S. agency supporting research into the causes, prevention, and treatment of alcohol problems. In 2004, NIAAA created an Initiative on Underage Drinking as a response to the convergence of recent scientific advances and increased public concern about this social problem. The Initiative's website contains important new research on underage drinking, the most current national statistics, links to other federal government underage drinking prevention resources, and updates on the Initiative's new Steering Committee. (See Resources: Curricula/Teaching Tools and Registries of Effective Programs for information about Coolspot.gov, NIAAA's website for middle school students.)

Prevention Research Center
Website: http://resources.prev.org/index.html
(See also National Agencies and Organizations — General.)

Students Against Destructive Decisions (SADD) (founded under the name Students Against Driving Drunk)
255 Main Street
Marlboro, MA 01752
Phone: 877-SADD-INC (877-723-3462) or 508-481-3568
Fax: 508-481-5759
Website: http://www.sadd.org
For 25 years, SADD has been committed to empowering young people to lead education and prevention initiatives in their schools and communities. Founded as Students Against Driving Drunk in 1981 in Wayland, Massachusetts, SADD is a major peer-to-peer youth education and prevention organization with thousands of chapters in middle schools, high schools and colleges. Originally, the mission of the SADD chapter was to help young people say "No" to drinking and driving. Today, the mission has expanded: to provide students with the best prevention and intervention tools possible to deal with the issues of underage drinking, other drug use, impaired driving, and other destructive decisions.

Youth Alcohol Prevention Center
Boston University School of Public Health
715 Albany Street, Talbot Building
Boston, MA 02118
Phone: 617-638-4640
Fax: 617-638-5299
Website: http://www.bu.edu/dbin/sph/research_centers/niaaa.php

The Youth Alcohol Prevention Center was established at the Boston University School of Public Health in February 2004 with a 5-year grant from NIAAA. Its research, training, and evaluation initiatives seek to understand the etiology and consequences of drinking by young people. In its experimental work, the Center develops and tests interventions for the prevention and treatment of youth drinking.

Drugs/Inhalants

American Council for Drug Education (ACDE)
164 West 74th Street
New York, NY 10023

Phone: 800-488-DRUG (3784)
Website: http://www.acde.org
This prevention and education agency develops programs and materials based on the most current scientific research on drug use and its impact on society.

Bubblemonkey.com
Website: http://www.bubblemonkey.com
Operated by Drug Strategies (see below), this website gives teens anonymous access to accurate information about drugs.

D.A.R.E. (Drug Abuse Resistance Education) America
P.O. Box 512090
Los Angeles, CA 90051
Phone: 800-223-DARE (3273)
Fax: 310-215-0180
E-mail: dspolicy@aol.com
Website: http://www.dare-america.com/home/default.asp
D.A.R.E. is a police officer-led series of classroom lessons that aims to teach K–12 children how to resist peer pressure and live productive drug and violence-free lives.

Drug Strategies
1616 P Street, Suite 220
Washington, DC 20036
Phone: 202-289-9070
Website: http://www.drugstrategies.org
Drug Strategies promotes more effective approaches to the nation's drug problems and supports private and public efforts to reduce the demand for drugs through prevention, education, treatment, law enforcement, and community initiatives. (See also Bubblemonkey.com, above.)

Massachusetts Inhalant Abuse Task Force
Massachusetts Department of Public Health
Bureau of Substance Abuse Services
250 Washington Street, 3rd Floor
Boston MA, 02108
Website: http://www.mass.gov/dph/inhalant/index.htm

Massachusetts Partners in Prevention
c/o Massachusetts Interscholastic Athletic Association
33 Forge Parkway
Franklin, MA 02038
Phone: 508-541-7997
Fax: 508-541-9888
Massachusetts Partners in Prevention is a local affiliate of Partnership for a Drug-Free America.

Massachusetts Substance Abuse Information and Referral Helpline
Phone: 800-327-5050 (24 hours/7 days)
Website: http://www.helpline-online.com

National Inhalants Prevention Coalition (NIPC)
322-A Thompson Street
Chattanooga, TN 37405
Phone: 800-269-4237 or 423-265-4662
E-mail: nipc@io.com
Website: http://www.inhalants.org
NIPC serves as an inhalant referral and information clearinghouse, develops informational materials, produces *ViewPoint* (a quarterly newsletter), and provides training and technical assistance to schools and a variety of other organizations.

Resources:

- *A Parent's Guide to Preventing Inhalant Abuse,* a brochure produced by the Consumer Product Safety Commission and a group of industry and nonprofit organizations
- *EDUCATE: Creating Inhalant Abuse Awareness Together,* a free video produced through the joint efforts of the National Inhalant Prevention Coalition; Deloris Jordan, author of *Family First* (and mother of basketball star Michael Jordan); the Office of National Drug Control Policy; the U.S. Consumer Product Safety Commission; and consumer products manufacturer S. C. Johnson, to provide parents, teachers, and caregivers with information about inhalant abuse and its consequences

National Institute on Drug Abuse (NIDA)
National Institutes of Health
U.S. Department of Health and Human Services
6001 Executive Blvd.
Bethesda, MD 20892-9561
Phone: 301-443-1124
E-mail: information@lists.nida.nih.gov
Website: http://www.drugabuse.gov
NIDA's main website provides information on all aspects of drug abuse, particularly the effects of drugs on the brain and body, prevention of drug use among children and adolescents, the latest research on treatment for addiction, and statistics on the extent of drug abuse in the United States. The website allows visitors to print or order publications, public service announcements, posters, science education materials, research reports and fact sheets on specific drugs or classes of drugs, and the NIDA NOTES newsletter. The site also links to related websites in the public and private sector. NIDA also operates a number of other useful websites (listed below).

Publication:

- *Preventing Drug Use among Children and Adolescents: A Research-Based Guide for Parents, Educators, and Community Leaders, Second Edition* (2003), available for download at http://www.drugabuse.gov/Prevention/Prevopen.html or from the National Clearinghouse for Alcohol and Drug Information (NCADI) at 800-729-6686

Websites:

- BacktoSchool.drugabuse.gov (free information about the latest science-based drug abuse publications and teaching materials)
- HIV.drugabuse.gov (information on the links between HIV/AIDS and drug use)
- Marijuana-Info.org (information about marijuana)
- ClubDrugs.org (information about ecstasy, methamphetamine, GHB, and others)
- SteroidAbuse.org (information on anabolic steroids)

Office of National Drug Control Policy (ONDCP)
Phone: 800-666-3332
Website: http://www.whitehousedrugpolicy.gov
The ONDCP website lists federally sponsored drug-related statistics, links, presentations, and resources.

Partnership for a Drug-Free America (PDFA)
405 Lexington Avenue, Suite 1601
New York, NY 10174
Phone: 212-922-1560
Fax: 212-966-1570
Website: http://www.drugfree.org
PDFA is a nonprofit coalition of communication, health, medical, and educational professionals working to reduce illicit drug use and help people live healthy, drug-free lives. The organization conducts annual national studies of teen drug use and attitudes. Its research-based educational campaigns are disseminated through TV, radio, and print advertisements and online. Two PDFA-operated websites, http://www.drugfree.org/Parent and http://www.dxmstories.com (for teens), provide comprehensive content on the abuse of prescription drugs. Additionally, PDFA offers 4 e-mail newsletters: one for teens/young adults, one for parents/caregivers, one covering early intervention and treatment, and a semiannual "digest" summarizing news and features in one e-mail message.

***STASH* (Science Threads on Addiction, Substance Use, and Health)**
Website: http://www.basisonline.org
STASH is a weekly online science review on substance use and abuse from the Brief Addiction Science Information Source (BASIS). (See National Agencies and Organizations.)

Gambling

Gamblers' Anonymous — Massachusetts
Eastern Massachusetts Hotline: 617-338-6020
Western Massachusetts Hotline: 888-519-5059

Institute for Research on Pathological Gambling and Related Disorders
Division on Addictions
Cambridge Health Alliance
101 Station Landing, 2nd Floor
Medford, MA 02155
Phone: 781-306-8600
Website: http://www.divisononaddictions.org/institute/extra_research.htm
In addition to research and articles, this website, supported by the National Center for Responsible Gaming, offers *Facing the Odds: The Mathematics of Gambling and Other Risks,* a middle-school curriculum on probability, statistics, and mathematics developed by Harvard Medical School's Division on Addictions and the Massachusetts Council on Compulsive Gambling. It was designed to enhance students' critical thinking ability, number sense, and knowledge of the mathematics of gambling so that they can develop rational views about gambling and make their own informed choices when confronted with gambling opportunities.

International Centre for Youth Gambling Problems and High-Risk Behaviors (Youth Gambling International)
McGill University
3724 McTavish Street
Montreal, Quebec
H3A 1Y2, Canada
Phone: 514-398-1391
Fax: 514-398-3401
E-mail: ygi@youthgambling.com
Website: http://www.education.mcgill.ca/gambling or http://www.youthgambling.com
Youth Gambling International is committed to the advancement of knowledge in the area of youth gambling and risk-taking behaviors, through the development of both basic and applied research. Members of the Centre and its International Advisory Board are engaged in a multitude of research projects directly addressing youth gambling problems and that of co-occurring disorders. The website includes FAQs, prevention resources, treatment information, an online newsletter, and an informational section designed specifically for youth.

Massachusetts Council on Compulsive Gambling
190 High Street, Suite 5
Boston, MA 02110-3031
Phone: 800-426-1234 or 617-426-4554
Fax: 617-426-4555
E-mail: gambling@aol.com
Website: http://www.masscompulsivegambling.org
The Massachusetts Council on Compulsive Gambling is a statewide nonprofit agency dedicated to helping people in the Commonwealth with gambling problems. The Council provides information, education, advocacy, and referral services, including a 24-hour, 7-day-a-week Helpline (800-426-1234). In collaboration with the Connecticut Council on Problem Gambling (CCPG) and the New England Center, the Council publishes a monthly newsletter on problem gambling prevention. To receive an electronic copy of the newsletter, contact the Connecticut Council at http://www.ccpg.org, or call 203-453-0138.

Massachusetts Department of Public Health
Bureau of Substance Abuse Services
250 Washington Street, 3rd Floor
Boston, MA 02108
Phone: 617-624-5111
Fax: 617-624-5185
Website: http://www.mass.gov/dph/bsas/gambling/gambling.htm

Massachusetts Gambling Helpline
Phone: 800-GAM-1234 (800-426-1234)
Massachusetts Gambling Helpline is a 24-hour confidential helpline and referral service for problem gamblers and others affected by problem gambling behavior.

National Center for Responsible Gaming (NCRG)
1299 Pennsylvania Avenue NW, Suite 1175
Washington, DC 20004
Phone: 202-530-4704
E-mail: contact@ncrg.org
Website: http://www.ncrg.org
Founded in 1996 as the first national organization devoted exclusively to funding independent, peer-reviewed scientific research on pathological and youth gambling, NCRG helps individuals and families affected by gambling disorders by supporting the finest peer-reviewed research; encouraging the application of new research findings to improve prevention, diagnostic, intervention, and treatment strategies; and enhancing public awareness.

North American Training Institute (NATI)
314 West Superior Street, Suite 702
Duluth, MN 55802
Phone: 888-989-9234 or 218-722-1503
Fax: 218-722-0346
E-mail: info@nati.org
Website: http://www.nati.org
NATI is a private, not-for-profit organization specializing in development and presentation of professional training programs and courses, research facilitation, and distribution of research-based information on the topics of pathological and underage gambling. NATI studies treatment techniques, methods, and programs; provides public awareness and education strategies; and designs educational curricula.

***The Wager:* Weekly Addiction Gambling Education Report**
Website: http://www.basisonline.org/wager
The Wager is a weekly research bulletin published by the Division on Addictions at Harvard Medical School in collaboration with the Massachusetts Council on Compulsive Gambling.

Youthbet
TeenNet Gambling Project
150 College Street
Fitzgerald Building, Room 121
Department of Public Health Sciences, University of Toronto
Toronto, Ontario
M5S 3E2, Canada
Phone: 416-978-8498
Fax: 416-946-0096
Website: http://www.youthbet.net
Youthbet is an informational problem-gambling website for youth aged 10–19.

Tobacco

American Legacy Foundation
2030 M Street NW, 6th Floor
Washington, DC 20036
Phone: 202-454-5555
Fax: 202-454-5599
E-mail: info@americanlegacy.org
Website: http://www.americanlegacy.org
The American Legacy Foundation is dedicated to building a world where young people reject tobacco and where anyone can quit. It develops national programs that address the health effects of tobacco use, through grants, technical training and assistance, youth activism, strategic partnerships, countermarketing and grassroots marketing campaigns, public relations, and community outreach to populations disproportionately affected by the toll of tobacco. Its website offers research, publications, resources, and advice on how to quit.

***ASHES:* Addiction Smoking Health Education Service**
Website: http://www.basisonline.org
ASHES is a weekly bulletin of scientific information about tobacco use from the Brief Addiction Science Information Source (BASIS). (See National Agencies and Organizations.)

Center for Tobacco Cessation
901 E Street NW, Suite 500
Washington, DC 20004
Phone: 202-585-3200
Fax: 202-661-5750
E-mail: ctc@cancer.org
The Center for Tobacco Cessation serves as a source of the best available science on tobacco cessation and works with national partners to expand the use of effective tobacco dependence treatments.

Center for Tobacco Prevention and Control
Preventive and Behavioral Medicine
University of Massachusetts Medical School
55 Lake Avenue North
Worcester, MA 01655
Phone: 508-856-2000
Fax: 508-856-3840
Website: http://www.umassmed.edu/behavmed/tobacco
The Center provides informational talks for the community regarding tobacco dependence, tobacco treatment, and related topics. These presentations are done as a community service, at no charge.

Centers for Disease Control and Prevention
National Center For Chronic Disease Prevention and Health Promotion

Tobacco Information and Prevention Source (TIPS)
Website: http://www.cdc.gov/tobacco/index.htm
TIPS is an online information center where archives of Morbidity and Mortality Weekly Reports, Surgeon Generals' reports, recent research, and educational materials may be obtained.

Office on Smoking and Health
Publications Mailstop K-50
4770 Buford Highway NE
Atlanta, GA 30341-3717
Phone: 770-488-5705
Website: http://www.cdc.gov/tobacco
Publication:
Youth Tobacco Cessation: A Guide for Making Informed Decisions was developed for the Youth Tobacco Cessation Collaborative to assess current efforts designed to help youth quit using tobacco

and to identify "best practices." Free copies are available from the Office on Smoking and Health by telephone or mail. (Recommendations from this guide were also summarized in an article in the *American Journal of Health Behavior* (Milton et al., 2003); see References.)

Massachusetts Tobacco Control Program
Massachusetts Department of Public Health
250 Washington Street, 4th Floor
Boston, MA 02108
Phone: 617-624-5900
Website: http://www.mass.gov/dph/mtcp

National Institute on Drug Abuse (NIDA)
Website: http://smoking.drugabuse.gov
The NIDA website provides information on nicotine addiction and other dangers of tobacco use.
(See also Resources: Specific Topics – Drugs and Inhalants.)

Save Our Daughters
National Center for Tobacco-Free Kids
1400 Eye Street, Suite 1200
Washington, DC 20005
Phone: 202-296-5469
Website: http://www.saveourdaughters.org
Save Our Daughters provides information on women and smoking and on ways to reduce tobacco's impact on women and girls.

Tips4Youth
Tobacco Information and Prevention Source (TIPS)
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention
Website: http://www.cdc.gov/tobacco/tips4youth.htm

Transdisciplinary Tobacco Use Research Center (UCI TTURC)
University of California, Irvine
367 Med Surge II
Irvine, CA 92697-4625
Phone: 949-824-8452
Website: http://www.tturc.uci.edu
UCI TTURC is one of 7 research centers funded by the National Cancer Institute and the National Institute on Drug Abuse in partnership with the Robert Wood Johnson Foundation. These centers are charged with the mission of integrating a transdisciplinary approach to the investigation of tobacco use and nicotine addiction, and translating the research results for policy makers, practitioners, and the public. *Closing the Gap on Youth Tobacco Use,* a report published by the UCI TTURC Office of Communications in 2004, summarizes recent findings about trends and influences on youth tobacco use. This report may be read online at http://www.tturc.uci.edu/TTURCyouthreport.pdf.

Try-To-STOP TOBACCO Resource Center
Massachusetts Tobacco Control Program
Phone: 800-TRY-TO-STOP (800-879-8678) (Smokers' Helpline)
Website: http://www.trytostop.org
The Resource Center houses a telephone-based Smokers' Helpline, an interactive website, educational materials, and the Quitworks program. It also collaborates with the Massachusetts Tobacco Control Program on special promotional programs — such as Ready, Set, Quit — that distribute free nicotine replacement patches to smokers who want to quit. The Smokers' Helpline provides confidential information, referral, and counseling at no charge in English, Spanish, and Portuguese, with translators available for other languages. The website http://www.trytostop.org offers smokers expert advice, an interactive bulletin board, self-directed quitting tools, resources, and information in 9 languages.

RESOURCES: TREATMENT/POST-TREATMENT

Alcohol/Drugs

Adolescent Post-Treatment Support: A High School Substance Recovery Course
Nancy L. Ferguson and Associates, LLC
Phone: 414-481-4042
E-mail: nfergus@execpc.com
This mentored, independent-study program is for high school youth who have had alcohol and/or other drug treatment. The curriculum, created by a certified alcohol and drug counselor and school social worker, includes 18 written lessons, a midterm assignment, a final paper assignment, and a home contract signed by the student and student's parents. Published in paperback form (ISBN 1-55691-195-5) by Learning Publications, it is now available from the author.

Drug Strategies
Treating Teens: A Guide to Adolescent Drug Programs
Website: http://www.drugstrategies.org/pubs.html#teen
Working with a team of nationally recognized experts, Drug Strategies has prepared a comprehensive assessment of adolescent drug treatment. This guide provides current, reliable information on 144 adolescent treatment programs across the country; describes in detail 7 promising adolescent programs that include a range of treatment approaches; and provides practical resources, such as hotline telephone numbers for each state and questions every parent should ask when considering a program. Information on all 144 treatment programs is also available in a searchable database, organized by state, on the Drug Strategies website at http://www.drugstrategies.org/teens/programs.html. (For more information about Drug Strategies, see Drugs/Inhalants section of Specific Topics listing above.)

Massachusetts Organization for Addiction Recovery (MOAR)
30 Winter Street, 3rd Floor
Boston, MA 02108
Phone: 877-423-6627 or 617-423-6627
Website: http://www.neaar.org/moar
MOAR seeks to organize recovering individuals, families, and friends into a collective voice to educate the public about the value of recovery from alcohol and other addictions. It also works to improve access to treatment. MOAR is the Massachusetts chapter of the New England Alliance for Addiction Recovery. (See listing below.)

New England Alliance for Addiction Recovery (NEAAR)
1492 Elm Street
Manchester, NH 03101
Phone: 603-647-4629
Fax: 603-647-5977
E-mail: neias@mva.net
Website: http://www.neaar.org
Sponsored by the New England Institute of Addiction Studies, NEAAR provides education, training, and support to people in recovery through statewide organizations in 6 New England states. NEAAR's mission is to: change public perceptions about addiction and recovery; end discrimination against individuals and families struggling with alcohol and drug addiction; participate in the development of policies and legislation related to addiction, prevention, treatment, and recovery; and provide training to enhance the skills of the recovering community.

SAMHSA (Substance Abuse and Mental Health Services Administration) Model Programs
Website: http://modelprograms.samhsa.gov
(See also Curricula/Teaching Tools and Registries of Effective Programs.)

Searchable/Printable Substance Abuse Directory
Massachusetts Department of Public Health
Bureau of Substance Abuse Services (BSAS)
Website: http://db.state.ma.us/dph/bsas/search.asp
This directory lists BSAS-funded and licensed programs and contacts.

Substance Abuse Treatment Facility Locator
Substance Abuse and Mental Health Services Administration (SAMHSA)
Website: http://www.findtreatment.samhsa.gov
This directory of drug and alcohol treatment programs, sponsored by SAMHSA, shows the location of facilities around the country that treat alcoholism, alcohol abuse, and drug abuse problems. The locator includes more than 11,000 addiction treatment programs, including residential treatment centers, outpatient treatment programs, and hospital inpatient programs for drug addiction and alcoholism. Listings include treatment programs for marijuana, cocaine, and heroin addiction, as well as drug and alcohol treatment programs for adolescents and for adults.

Gambling

Gamblers' Anonymous — Massachusetts
Eastern Massachusetts Hotline Number: 617-338-6020
Western Massachusetts Hotline Number: 888-519-5059

Gambling Treatment Sites in Massachusetts
Massachusetts Department of Public Health
Bureau of Substance Abuse Services
250 Washington Street, 3rd Floor
Boston MA, 02108
Phone: 781-624-5111
Website: http://www.mass.gov/dph/bsas/gambling/treatment.htm
DPH's Bureau of Substance Abuse Services supports 13 gambling treatment sites in Massachusetts. All are listed on this website.

Tobacco

Center for Tobacco Cessation (CTC)
Phone: 202-585-3200
(See Resources: Specific Topics/Tobacco.)

Massachusetts Tobacco Control Program (MTCP)
Massachusetts Department of Public Health
250 Washington Street, 4th Floor
Boston, MA 02108
Phone: 617-624-5900
Website: http://www.state.ma.us/dph/mtcp
MTCP promotes cessation and helps smokers to quit through the following initiatives: the Try-To-STOP TOBACCO Resource Center (see below); the Quitworks program, which improves access to cessation services by working with health care providers, health insurers, and public and private employers in Massachusetts; and Ready, Set, Quit, a pilot program designed to help smokers quit by providing eligible smokers with a free two-week supply of nicotine patches and telephone counseling services. MTCP also conducts cessation program evaluation and research.

Not On Tobacco (N-O-T)
American Lung Association (ALA)
Phone: 800-LUNG-USA (800-586-4872)
Website: http://www.lungusa.org
Developed by the ALA in collaboration with West Virginia University, N-O-T was designed specifically for teens, using a gender-sensitive, 10-session curriculum that includes booster sessions. Sessions are

facilitated in schools and other community settings by teachers, school nurses, counselors, and other staff and volunteers specially trained by the ALA. N-O-T is designed as a voluntary, nonpunitive program for teens that uses life-management skills to help teen smokers handle stress, decision making, and peer and family relationships. The program also addresses unhealthy lifestyle behaviors such as alcohol or illegal drug use, as well as related healthy lifestyle components such as exercise and nutrition. An Alternative-to-Suspension program is also included to address student violation of a school tobacco policy.

Project EX
Institute for Health Promotion and Disease Prevention Research
1000 S. Fremont Avenue, Unit 8, Building A-4, Room 4112
University of Southern California
Alhambra, CA 91803
Phone: 626-457-6635
Fax: 626-376-4012
Project EX, a school-based, tobacco-use cessation program for high school youth aged 14–19, is delivered in a clinic setting and involves enjoyable, motivating activities including games, talk shows, and alternative exercises such as yoga. At the completion of this program, youth are able to: stop or reduce cigarette smoking, and state accurate information about the environmental, social, physiological, and emotional consequences of tobacco use. The 8-session curriculum, delivered over a 6-week period, emphasizes coping with stress, dealing with nicotine withdrawal, relaxation techniques, and avoiding relapse. The program builds interpersonal, coping, commitment-building, and decision-making skills and provides training in self-control. Recognitions: *Model Program,* SAMHSA.

SAMHSA (Substance Abuse and Mental Health Services Administration) Model Programs
Website: http://modelprograms.samhsa.gov
(See Curricula/Teaching Tools and Registries of Effective Programs.)

Try-To-STOP TOBACCO Resource Center
Massachusetts Tobacco Control Program
Phone: 800-TRY-TO-STOP (800-879-8678) (Smokers' Helpline)
Website: http://www.trytostop.org
(See Resources: Specific Topics/Tobacco)

REFERENCES

Act for Youth, Upstate Center for Excellence, Cornell University. (2002). Adolescent brain development. Research Facts and Findings online newsletter. Retrieved in 2007 from http://www.actforyouth.net/documents/may02factsheetadolbraindev.pdf

Aguire-Molina, M. & Gorman, D. (1996). Community-based approaches for the prevention of alcohol, tobacco and other drug use. *Annual Review of Public Health, 17,* 337–358.

Altman, D. G. & Feighery, E. C. (2004). Future directions for youth empowerment: Commentary on application of youth empowerment theory to tobacco control. *Health Education & Behavior, 31*(5), 641–647.

American Academy of Pediatrics. (2002). Steroids–Dangerous side effects. Author. Retrieved in 2006 from http://www.aap.org/pubed/ZZZT6QV5M7C.htm?&sub_cat=1.

American Council for Drug Education. (2002). “Basic facts about drugs: Steroids.” Fact sheet. Author. Retrieved in 2006 from http://www.acde.org/youth/Research.htm

American Legacy Foundation. (2004). *Cigarette smoking among youth: Results from the 2002 National Youth Tobacco Survey. Legacy First Look Report 13*. Washington, DC: American Legacy Foundation. Retrieved in 2006 from http://www.americanlegacy.org.

Anderson, G. L. (1993). *When chemicals come to school: The core team model of student assistance programs* (3rd ed.). Greenfield, WI: Community Recovery Press.

Andrews, J. A., Tildesley, E., Hops, H., Duncan, S. C. & Severson, H. H. (2003). Elementary school age children’s future intentions and use of substances*. Journal of Clinical Child and Adolescent Psychology, 32*(4), 556–567. PMID: 14710464.

Annenberg Public Policy Center, Institute for Adolescent Risk Communication. (2002). Young Americans say alcohol, marijuana, cigarettes, and lottery tickets are easily accessible: Drinking, smoking, drug use, and gambling are more associated with the popular kids than the unpopular ones. Retrieved in 2006 from http://www.annenbergpublicpolicycenter.org/07_adolescent_risk/risk-release.pdf.

Audrain-McGovern, J., Tercyak, K. P., Shields, A. E., Bush, A., Espinel, C. F. & Lerman, C. (2003). Which adolescents are most receptive to tobacco industry marketing? Implications for counter-advertising campaigns. *Health Communication, 15*(4), 499–513. PMID: 14527869.

Baer, J. S., Ginzler, J. A. & Peterson, P. L. (2003). DSM-IV alcohol and substance abuse and dependence in homeless youth. *Journal of Studies on Alcohol, 64*(1), 5–14. PMID: 12608478.

Barrera, M., Biglan, A., Taylor, T. K., Gunn, B., Smolkowski, K., Black, C., et al. (2002). Early elementary school intervention to reduce conduct problems: A randomized trial with Hispanic and non-Hispanic children. *Prevention Science, 3*(2), 83–94.

Battistich, V., Schaps, E., Watson, M., Solomon, D. & Lewis, C. (2000). Effects of the Child Development Project on students’ drug use and other problem behaviors. *Journal of Primary Prevention, 21*(1), 75–99.

Belluzzi, J. D., Lee, A. G., Oliff, H. S. & Leslie, F. M. (2004). Age-dependent effects of nicotine on locomotor activity and conditioned place preference in rats. *Psychopharmacology, 174,* 389–395.

Bergen, H. A., Martin, G., Roeger, L. & Allison, S. (2005). Perceived academic performance and alcohol, tobacco, and marijuana use: Longitudinal relationships in young community adolescents. *Addictive Behaviors, 30,* 1563–1573.

Biglan, A., Brennan, P. A., Foster, S. L. & Holder, H. D. (2004). *Helping adolescents at risk: Prevention of multiple problem behaviors*. New York: Guilford Press.

Black, S. (2003). Dying for a drink: Early alcohol abuse can take a terrible toll on kids. *American School Board Journal, 190*(8).

Bohman, T. M., Barker, E. D., Bell, M. L., Lewis, C. M., Holleran, L. & Pomeroy, E. (2004). Early intervention for alcohol use prevention and vehicle safety skills: Evaluating the Protecting You/Protecting Me curriculum. *Journal of Child and Adolescent Substance Abuse, 14*(1), 17–40.

Bonnie, R. J. & O'Connell, M. E. (Eds.). (2004). *Reducing underage drinking: A collective responsibility.* Washington, DC: National Academies Press.

Bosworth, K. (1997). *Drug abuse prevention: School-based strategies that work.* ERIC Digest. Washington, DC: ERIC Clearinghouse on Teaching and Teacher Education. (ERIC Document Reproduction Service No. ED409316). Retrieved in 2006 from http://www.ericdigests.org/1998-1/drug.htm.

Botvin, G. J. (2004). Advancing prevention science and practices: Challenges, critical issues, and future directions. *Prevention Science, 5,* 69–72.

Botvin, G. J., Griffin, K. W., Paul, E. & Macaulay, A. P. (2003). Preventing tobacco and alcohol use among elementary school students through life skills training. *Journal of Child & Adolescent Substance Abuse, 12,* 1–17.

Botvin, G. J., Baker, E., Dusenbury, L., Botvin, E. M. & Diaz, T. (1995). Long-term follow-up results of a randomized drug-abuse prevention trial in a white middle class population. *Journal of the American Medical Association, 273,* 1106–1112.

Brook, D. W., Brook, J. S., Zhang, C., Cohen, P. & Whiteman, M. (2002). Drug use and the risk of major depressive disorder, alcohol dependence, and substance use disorders. *Archives of General Psychiatry, 59,* 1039–1044. PMID: 12418937.

Brown, S. A. (2001). Facilitating change for adolescent alcohol problems: A multiple options approach. In E. F. Wagner & H. B. Waldron (Eds.), *Innovations in adolescent substance abuse intervention* (pp. 169–187). Oxford, UK: Elsevier Science.

Brown, S. A., Tapert, S. F., Granholm, E. & Delis, D. C. (2000). Neurocognitive functioning of adolescents: Effects of protracted alcohol use. *Alcoholism: Clinical and Experimental Research, 24*(2), 164–171.

Burgoa, C. (2002). Prevention strategies for adolescent girls and young women. *Prevention Tactics, 5*(3). Retrieved in 2006 from http://www.emt.org/publications.html#tactics.

Carpenter, S. (2001). Research on teen smoking cessation gains momentum. *Monitor on Psychology, 32*(5). Retrieved in 2006 from http://www.apa.org/monitor/jun01/cessation.html.

Carver, V., Reinert, B. & Range, L. M. (2004). Youth knowledge, interpersonal skills, and media attitudes after anti-tobacco training. *Journal of Child and Adolescent Substance Abuse, 14*(1), 1–16.

CASA (see National Center on Addiction and Substance Abuse).

Cauce, A. M., Comer, J. P. & Schwartz, D. (1987). Long term effects of a systems oriented school prevention program. *American Journal of Orthopsychiatry, 57:*127–131.

Caulkins, J. P., Pacula, R. L., Paddock, S. & Chiesa, J. (2004). What we can — and cannot — expect from school-based drug prevention. *Drug Alcohol Review, 23*(1), 79–87. PMID: 14965889.

Centers for Disease Control and Prevention. (2000). Strategies for reducing exposure to environmental tobacco smoke, increasing tobacco-use cessation, and reducing initiation in communities and health-care systems. *Morbidity and Mortality Weekly Reports, 49*(RR-12).

Centers for Disease Control and Prevention. (1994). Guidelines for school health programs to prevent tobacco use and addiction. MMWR 43(No. RR-2): [inclusive page numbers]. Retrieved in 2006 from http://www.cdc.gov/mmwr/PDF/RR/RR4302.pdf.

Center for Substance Abuse Research. (2005). Lifetime use of inhalants by U.S. 8th graders continues to increase as perception of risk declines. *CESAR Fax, 14*(3). Retrieved in 2006 from http://www.cesar.umd.edu/cesar/cesarfax.asp.

Chambers, R. A. & Potenza, M. N. (2003). Neurodevelopment, impulsivity, and adolescent gambling. *Journal of Gambling Studies, 19*(1), 53–84.

Chambers, R. A., Taylor, J. R. & Potenza, M. N. (2003). Developmental neurocircuitry of motivation in adolescence: A critical period of addiction vulnerability. *American Journal of Psychiatry, 160,* 1041–1052.

Committee on Developing a Strategy to Reduce and Prevent Underage Drinking. (2003). *Reducing underage drinking: A collective responsibility*. Joint report by the National Research Council and Institute of Medicine. Copies available from the National Academies Press at 800-624-6242 or http://www.nap.edu.

Conduct Problems Prevention Research Group. (2002). The implementation of the Fast Track program: An example of a large-scale prevention science efficacy trial. *Journal of Abnormal Child Psychology, 30,* 1–17.

Cook, G. (2004). Shortcut to tragedy: As steroid use by student athletes increases, officials grapple with how to stop this dangerous trend. *American School Board Journal, 191*(8).

Cunningham, M. (1999). Family-centered prevention: Three proven approaches to help families prevent alcohol and other drug abuse. *Prevention Tactics, 3*(2). Retrieved in 2006 from http://www.emt.org/publications.html#tactics.

D'Amico, E. J., McCarthy, D. M., Metrik, J. & Brown, S. A. (2004). Alcohol-related services: Prevention, secondary intervention and treatment preferences of adolescents. *Journal of Child & Adolescent Substance Abuse, 14,* 61–80.

D'Augelli, A. R. (2004). High tobacco use among lesbian, gay, and bisexual youth: Mounting evidence about a hidden population's health risk behavior. *Archives of Pediatric & Adolescent Medicine, 158,* 309–310.

De Bellis, M. D., Clark, D. B., Beers, S. R., Soloff, P. H., Boring, A. M., Hall, J., et al. (2000). Hippocampal volume in adolescent-onset alcohol use disorders. *American Journal of Psychiatry*,*157*(5), 737–744.

Derevensky, J. & Gupta, R. (Eds.). (2004). *Gambling problems in youth: Theoretical and applied perspectives*. New York: Kluwer Academic/Plenum Publishers.

Diego, M. A., Field, T. M. & Sanders, C. E. (2003). Academic performance, popularity, and depression predict adolescent substance use. *Adolescence, 38,* 35–42.

DiFranza, J. R., Savageau, J. A., Rigotti, N. A., Fletcher, K., Ockene, J. K. & McNeill, A. D. (2002). Development of symptoms of tobacco dependence in youths: 30-month follow-up data from the DANDY study. *Tobacco Control, 11*(3), 228–235.

DiFranza, J. R., Rigotti, N. A., McNeill, A. D., Ockene, J. K., Savageau, J. A., St. Cyr, D., et al. (2000). Initial symptoms of nicotine dependence in adolescents. *Tobacco Control, 9*(3), 313–319. Retrieved in 2006 from http://www.tobaccocontrol.com.

Dishion, T., Kavanagh, K., Schneiger, A. K. J., Nelson, S. & Kaufman, N. (2002). Preventing early adolescent substance use: A family centered strategy for the public middle school. *Prevention Science, 3*(3), 191–202.

Dishion, T., McCord, J. & Poulin, F. (1999). When interventions harm: Peer groups and problem behavior. *American Psychologist, 54,* 755–764.

Donovan, J. E. (1996). Gender differences in alcohol involvement in children and adolescents: A review of the literature. In J. M. Howard, S. E. Martin, P. D. Mail, M. E. Hilton & E. D. Taylor, *Women and alcohol: Issues for prevention research,* Research Monograph No. 32. Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.

Drug Strategies. (2003). *Treating teens: A guide to adolescent drug programs.* Washington, DC: Drug Strategies.

Elkins, I. K., McGue, M., Malone, S. & Iacono, W.G. (2004). The effect of parental alcohol and drug disorders on adolescent personality. *American Journal of Psychiatry, 161,* 670–676.

Ellickson, P. L., Tucker, J. S. & Klein, D. J. (2001). High-risk behaviors associated with early smoking: Results from a 5-year follow-up. *Journal of Adolescent Health, 28,* 465–473.

Ellickson, P. L., Bui, K., Bell, R. & McGuigan, K. (1996). Does early drug use increase the risk of dropping out of high school? *Journal of Drug Issues 6, 28*(2), 357–380.

Farrelly, M. C., Vilsaint, M. C., Lindsey, D., Thomas, K. Y. & Messeri, P. (2003). *Cigarette smoking among youth: Results from the 2000 national youth tobacco survey. Legacy First Look Report 7*. Washington, DC: American Legacy Foundation. Retrieved in 2006 from http://www.americanlegacy.org.

Fernandez Hermida, J. R., Secades Villa, R., Vallejo Seco, G. & Errasti Perez, J. M. (2003). Evaluation of what parents know about their children's drug use and how they perceive the most common family risk factors. *Journal of Drug Education, 33*(3), 337–353. PMID: 15022865.

Focus Adolescent Services. (2000). *Inhalant abuse: It's deadly.* Fact Sheet. Retrieved in 2005 from http://www.focusas.com/Inhalants.html.

Fogle, E. (2000). School connectedness counts! *Prevention Tactics, 3*(3). Retrieved in 2006 from http://www.emt.org/publications.html#tactics.

Furr-Holden, C. D., Ialongo, N. S., Anthony, J. C., Petras, H. & Kellam, S. G. (2004). Developmentally inspired drug prevention: Middle school outcomes in a school-based randomized prevention trial. *Drug and Alcohol Dependence, 73*(2), 149–158. PMID: 14725954.

Gallogly, M., Campaign for Tobacco-Free Kids. (2004). *How schools can help students stay tobacco free.* Fact Sheet. Retrieved in 2006 from http://tobaccofreekids.org/research/factsheets/pdf/0153.pdf.

Gruber, E. & Grube, J. W. (2001). *Risk activities in the school setting as early markers for substance use.* Berkeley, CA: Center for Adolescent and Child Health Research.

Guilamo-Ramos, V., Turrisi, R., Jaccard, J., Wood, E. & Gonzalez, B. (2004). Progressing from light experimentation to heavy episodic drinking in early and middle adolescence. *Journal of Studies on Alcohol, 65*(4), 494–500. PMID: 15376824.

Hallfors, D., Vevea, J. L., Iritani, B., Cho, H., Khatapoush, S. & Saxe, L. (2002). Truancy, grade point average, and sexual activity: A meta-analysis of risk indicators for youth substance use. *Journal of School Health, 72*(5), 205–211. PMID: 12109176.

Halpern-Felsher, B. L., Biehl, M., Kropp, R. Y. & Rubinstein, M. L. (2004). Perceived risks and benefits of smoking: Differences among adolescents with different smoking experiences and intentions. *Preventive Medicine, 39*(3), 559–567. PMID: 15313096.

Hamilton, G., O'Connell, M. & Cross, D. (2004). Adolescent smoking cessation: Development of a school nurse intervention. *Journal of School Nursing, 20*(3), 169–174. PMID: 15147225.

Hanewinkel, R. & Asshauer, M. (2004). Fifteen-month follow-up results of a school-based life-skills approach to smoking prevention. *Health Education Research, 19*(2), 125–137.

Hardoon, K. K., Gupta, R. & Derevensky, J. L. (2004). Psychosocial variables associated with adolescent gambling. *Psychology of Addictive Behaviors, 18*(2), 170–179. PMID: 15238059.

Haviland, L. (2004). Application of youth empowerment theory to tobacco control. *Health Education & Behavior, 31*(5), 546–547.

Hawkins, J. D., Catalano, R. F., Kosterman, R., Abbott, R. & Hill, K. G. (1999). Preventing adolescent health risk behavior by strengthening protection during childhood. *Archives of Pediatric & Adolescent Medicine, 153*(3), 226–234. PMID: 10086398.

Hinnant, L., Nimsch, C. & Stone-Wiggins, B. (2004). Examination of the relationship between community support and tobacco control activities as a part of youth empowerment programs. *Health Education & Behavior, 31*(5), 629–640. PMID: 15358894.

Holden, D. J., Crankshaw, E., Nimsch, C., Hinnant, L. W. & Hund, L. (2004). Quantifying the impact of participation in local tobacco control groups on the psychological empowerment of involved youth. *Health Education & Behavior, 31*(5): 615–628. PMID: 15358893.

Ialongo, N., Poduska, J., Werthamer, L. & Kellam, S. (2001). The distal impact of two first-grade preventive interventions on conduct problems and disorder in early adolescence. *Journal of Emotional and Behavioral Disorders, 9,* 146–160.

Inciardi, J. A., Surratt, H. L., Martin, S. S. & Gealt, R. (2004). Prevalence of narcotic analgesic abuse among students: Individual or polydrug abuse? *Archives of Pediatric & Adolescent Medicine, 158,* 498-499.

Irwin, C. E. (2004). Tobacco use during adolescence and young adulthood: The battle is not over. *Journal of Adolescent Health, 35*(3), 169–171.

Jackson, K. M., Sher, K. J., Cooper, M. L. & Wood, P. K. (2002). Adolescent alcohol and tobacco use: Onset, persistence and trajectories of use across two samples. *Addiction, 97*(5), 517–531. PMID: 12033653.

Jacobsen, L. K., Krystal, J. H., Mencl, W. E., Westerveld, M., Frost, S. J. & Pugh, K. R. (2005). Effects of smoking and smoking abstinence on cognition in adolescent tobacco smokers. *Biological Psychiatry, 57*(1), 56–66. PMID: 15607301.

Jamner, L. D., Whalen, C. K., Loughlin, S. E., Mermelstein, R., Audrain-McGovern, J., Krishnan-Sarin, S., et al. (2003). Tobacco use across the formative years: A road map to developmental vulnerabilities. *Nicotine & Tobacco Research,* Suppl. 1, S71–87. PMID: 14668088.

Johnson, E. E., Harmer, R., Nora, R. M., Tan, B., Eisenstein, N. & Engelhart, C. (1997). The Lie/Bet Questionnaire for screening pathological gamblers. *Psychological Reports, 80,* 83–88.

Johnson, J. L. & Leff, M. (1999). Children of substance abusers: Overview of research findings. *Pediatrics, 103* (5 Suppl.), 1085–1099.

Johnston, L. D., O'Malley, P. M., Bachman, J. G. & Schulenberg, J. E. (2005). *Monitoring the future, national survey results on drug use, 1975–2004. Volume I: Secondary school students.* Bethesda, MD: National Institute on Drug Abuse. (NIH Pub. No. 05-5727). Retrieved in 2006 from http://monitoringthefuture.org/pubs/monographs/vol1_2004.pdf.

Kelly, K. J., Leonora, M. G., Comello, L. & Hunn, C. P. (2002). Parent-child communication, perceived sanctions against drug use, and youth drug involvement. *Adolescence, (37)*148. Retrieved in 2007 from http://findarticles.com/p/articles/mi_m2248/is_148_37/ai_97723212.

Knight, J. R., Sherritt, L., Harris, S. K., Gates, E. C. & Chang, G. (2003). Validity of brief alcohol screening tests among adolescents: A comparison of the AUDIT, POSIT, CAGE, and CRAFFT. *Alcoholism, Clinical and Experimental Research, 27*(1), 67–73.

Kumpfer, K. L., Alvarado, R., Smith, P. & Bellamy, N. (2002). Cultural sensitivity in universal family-based prevention interventions. *Prevention Science, 3*(3), 241–246.

Kropp, R. A. & Halpern-Felsher, B. L. (2004). Adolescents' beliefs about the risks involved in smoking "light" cigarettes. *Pediatrics, 114,* e445–e451.

Ladouceur, R., Blaszczynski, A. & Pelletier, A. (2004). Why adolescent problem gamblers do not seek treatment. *Journal of Child and Adolescent Substance Abuse, 13*(4), 1–12.

Learning First Alliance. (2001). *Every child learning: Safe and supportive schools.* Author. Retrieved in 2006 from http://www.casel.org/downloads/Safe%20and%20Sound/3C_Every_Child_Learning.pdf.

LeRoy, L., Benet, D. J., Mason, T., Austin, W. D. & Mills, S. (2004). Empowering organizations: Approaches to tobacco control through youth empowerment programs. *Health Education & Behavior, 31*(5), 577–596. PMID: 15358891.

Lloyd, J. (2003). *Inhalants fact sheet*. Washington, DC: Office of National Drug Control Policy, Drug Policy Information Clearinghouse. Retrieved in 2006 from http://whitehousedrugpolicy.org/publications/factsht/inhalants/index.html.

Lloyd-Richardson, E. E., Papandonatos, G. D., Kazura, A., Stanton, C. & Niaura, R. S. (2002). Differentiating stages of smoking intensity among adolescents: Stage-specific psychological, social, and contextual influences. *Journal of Consulting and Clinical Psychology, 70*(4), 998–1009.

Lochman, J. E. & Wells, K. C. (2002). The Coping Power Program at the middle-school transition: Universal and indicated prevention effects. *Psychology of Addictive Behaviors 16*(45),S40–S54.

Maroon, M. E., Gupta, R. & Derevensky, J. (2005). Juvenile delinquency and adolescent gambling: Implications for the juvenile justice system. *Criminal Justice and Behavior, 32*(6), 690–713.

Mason, M. J. (2004). Preadolescent psychiatric and substance use disorders and the ecology of risk and protection. *Journal of Child and Adolescent Substance Abuse, 13*(4).

Massachusetts Council on Compulsive Gambling. (2005, revised). Students: Know the limit. Retrieved in 2006 from http://www.masscompulsivegambling.org/stuff/contentmgr/files/ 8ba17e6210b554976fc0c9407bb8d721/miscdocs/studentbrochurefinal.pdf.

Massachusetts Department of Education. (2004). *2003 Massachusetts youth risk behavior survey*. Malden, MA: Author.

Massachusetts Department of Education. (2002). *General guidelines for inhalant abuse prevention programming.* Author. Retrieved in 2006 from http://www.mass.gov/dph/inhalant/guidelin.htm.

Massachusetts Department of Education. (2002). *Preventing tobacco use among Massachusetts youth*. Malden, MA: Author.

Massachusetts Department of Education. (2000). *The role of comprehensive school health education programs in the link between health and academic performance: A literature review.* Health and Academics:

Making the Link Technical Assistance Kit. Author. Retrieved in 2007 from http://www.doe.mass.edu/cnp/health00/literaturereview.pdf.

Massachusetts Department of Public Health and the Bureau of Substance Abuse Services. (2002). *Maximizing health: A framework*. Boston, MA: Author.

McGue, M., Iacono, W. G., Legrand, L. N., Malone, S. & Elkins, I. (2001). The origins and consequences of age at first drink. *Alcoholism, Clinical & Experimental Research, 25*(8), 1156–1165. PMID: 11505047.

Meadows, M. (2001). Prescription drug use and abuse. *FDA Consumer, 35*(5). Retrieved in 2006 from http://www.fda.gov/fdac/501_toc.html.

Milton, M. H., Maule, C. O., Backinger, C. L. & Gregory, D. M. (2003). Recommendations and guidance for practice in youth tobacco cessation. *American Journal of Health Behavior, 27*(Suppl. 2), S159–S169.

National Center on Addiction and Substance Abuse (CASA) at Columbia University. (2005). *Family matters: Substance abuse and the American family.* White Paper. Author. Retrieved in 2007 from http://www.casacolumbia.org/Absolutenm/articlefiles/380-family_matters_report.pdf.

National Center on Addiction and Substance Abuse (CASA) at Columbia University. (2004). *National survey of American attitudes on substance abuse IX: Teen dating practices and sexual activity.* New York: CASA at Columbia University.

National Center on Addiction and Substance Abuse (CASA) at Columbia University. (2003). *Formative years: Pathways to substance abuse among girls and young women ages 8–22.* New York: CASA at Columbia University.

National Center on Addiction and Substance Abuse (CASA) at Columbia University. (2003). *Teen tipplers: America's underage drinking epidemic* (revised ed.). New York: CASA at Columbia University.

National Institute on Alcohol Abuse and Alcoholism (NIAAA). (2006). Why do adolescents drink, what are the risks, and how can underage drinking be prevented? *Alcohol Alert, No. 67.* Retrieved in 2006 from http://pubs.niaaa.nih.gov/publications/AA67/AA67.htm.

National Institute on Alcohol Abuse and Alcoholism (NIAAA). (2004/2005). Interventions for alcohol use and alcohol use disorders in youth. *Alcohol Research & Health 28*(3), 163–174.

National Institute on Drug Abuse (NIDA). (2005, revised). *NIDA InfoFacts: Steroids (Anabolic-Androgenic).* Retrieved in 2006 from http://www.drugabuse.gov/Infofacts/Steroids.html.

National Institute on Drug Abuse (NIDA). (2005). *Community alert bulletin on inhalants*. Retrieved in 2006 from http://www.nida.nih.gov/InhalantsAlert/index.html and in hard copy from the National Clearinghouse for Alcohol and Drug Information (NCADI) (NIH Publication Number 05-5623).

National Institute on Drug Abuse (NIDA). (2003). *Preventing drug use among children and adolescents: A research-based guide for parents, educators and community leaders* (2nd ed.). Bethesda, MD: U.S. Department of Health and Human Services.

National Institute on Drug Abuse (NIDA). (2003). Underage drinking: A major public health challenge. *Alcohol Alert, No. 59.* Author. Retrieved in 2007 from http://pubs.niaaa.nih.gov/publications/aa59.htm.

National Research Council and Institute of Medicine, Board on Children, Youth and Families. (2003). Reducing underage drinking: A collective responsibility. Author. Retrieved in 2006 from http://www.iom.edu/CMS/12552/13838/15100.aspx.

Newmann, F. M. & Wehlage, G. G. (1995). Successful school restructuring: A report to the public and educators by the center on organization and restructuring of schools. Madison, WI: Board of Regents of the University of Wisconsin System.

NIAAA (see National Institute on Alcohol Abuse and Alcoholism).

NIDA (see National Institute on Drug Abuse).

Niederdeppe, J., Lindsey, D., Girlando, M. E., Ulasevich, A. & Farrelly, M. C. (2003). *Exposure to pro-tobacco messages among teens and young adults. Legacy First Look Report 12*. Washington, DC: American Legacy Foundation. Retrieved in 2006 from http://www.americanlegacy.org.

North American Think Tank on Youth Gambling. (2003). *Futures at stake: Youth, gambling, and society.* Reno, NV: University of Nevada Press.

Nower, L., Derevensky, J. L. & Gupta, R. (2004). The relationship of impulsivity, sensation seeking, coping, and substance use in youth gamblers. *Psychology of Addictive Behaviors, 18*(1), 49–55.

O'Donnell, J., Hawkins, J. D., Catalano, R. F., Abbot, R. D. & Day, L. E. (1995). Preventing school failure, drug use, and delinquency among low-income children: Long-term intervention in elementary schools. *American Journal of Orthopsychiatry, 65*(1), 87–100.

Oesterle, S., Hill, K. G., Hawkins, J. D., Guo, J., Catalano, R. F. & Abbott, R. D. (2004). Adolescent heavy episodic drinking trajectories and health in young adulthood. *Journal of Studies on Alcohol, 65*(2), 204–212.

Office of Alcohol and Other Drug Abuse (a collaboration of the American Medical Association and the Robert Wood Johnson Foundation). (2004, updated). Facts about youth and alcohol. Retrieved in 2006 from http://www.ama-assn.org/ama/pub/category/3566.html.

Office of National Drug Control Policy. (2006). *Girls and drugs, a new analysis: Recent trends, risk factors and consequences.* Washington, DC: Executive Office of the President.

Partnership for a Drug-Free America (PDFA). (2006). Generation Rx: A culture of pharming takes root. Key Findings on Teen Drug Trends (PATS 2005). Retrieved in 2006 from http://www.drugfree.org/Portal/DrugIssue/Features/Generation_Rx_Study_Confirms_Abuse_of_Prescription.

Partnership for a Drug-Free America (PDFA). (2006). The Partnership Attitude Tracking Study (PATS): Teens in grades 7 through 12 – 2005. Retrieved in 2006 from http://www.drugfree.org/Files/Full_Teen_Report.

Patton, G. C., McMorris, B. J., Toumbourou, J. W., Hemphill, S. A., Donath, S. & Catalano, R. F. (2004). Puberty and the onset of substance use and abuse. *Pediatrics, 114*(3), e300–e306. PMID: 15342890.

Pokorny, S. B., Jason, L. A. & Schoeny, M. E. (2004). Current smoking among young adolescents: Assessing school based contextual norms. *Tobacco Control, 13*(3), 301–307. PMID: 15333888.

Prevention Research Center (PRC), Pacific Institute for Research and Evaluation. (2004). *Adolescent employment and alcohol use.* PRC Resource Link: Research in Action. Retrieved in 2006 from http://www.prev.org/resources/recentfindings_sod_aeau.html.

Randolph, K. A. (2004). The dynamic nature of risk factors to substance use among adolescents. *Journal of Child and Adolescent Substance Abuse, 13*(4), 1–12.

Rashad, I. & Kaestner, R. (2004). Teenage sex, drugs and alcohol use: Problems identifying the cause of risky behaviors. *Journal of Health Economics, 23*(3), 493–503.

Riala, K., Hakko, H., Isohanni, M., Jarvelin, M. R. & Rasanen, P. (2004). Teenage smoking and substance use as predictors of severe alcohol problems in late adolescence and in young adulthood. *Journal of Adolescent Health, 35*(3), 245–254. PMID: 15313508.

Ringwalt, C., Ennett, S. T., Vincus, A. A., Rohrbach, L. A. & Simons-Rudolph, A. (2004). Who's calling the shots? Decision-makers and the adoption of effective school-based substance use prevention curricula. *Journal of Drug Education, 34*(1), 19–31. PMID: 15468745.

Robert Wood Johnson Foundation. (2005). Short-term counseling has longer-term benefits for teen substance abusers. Grant Results. Retrieved in 2007 from http://www.rwjf.org/portfolios/resources/grantsreport.jsp?filename=038324.htm&iaid=131&gsa=1#int_grantinfo

Robertson, E. B., David, S. L. & Rao, S. A. (2003). *Preventing drug abuse among children and adolescents: A research-based guide for parents, educators and community leaders* (2nd ed.). Bethesda, MD: National Institutes of Health, National Institute of Drug Abuse (NIH/NIDA) [NIH Publication No. 04-4212(B)]. Retrieved in 2006 from http://www.nida.nih.gov/Prevention/Prevopen.html.

Rusby, J. C., Forrester, K. K., Biglan, A. & Metzler, C. W. (2005). Relationships between peer harassment and adolescent problem behaviors. *Journal of Early Adolescence, 25*(4), 453–477.

SAMHSA (see U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration).

Scheier, L., Botvin, G., Diaz, T. M. & Griffin, K. (1999). Social skills, competence, and drug refusal efficacy as predictors of adolescent alcohol use. *Journal of Drug Education, 29*(3), 251–278.

Scivoletto S., Tsuji R. K., Abdo, C., de, Q.S., de, A. & Gattaz, W. F. (2002). Use of psychoactive substances and sexual risk behavior in adolescents. *Substance Use and Misuse, 37*(3), 381–98. PMID: 11913909.

Scott, D. M., Surface, J. L., Friedli, D. & Barlow, T. W. (1999). Effectiveness of student assistance programs in Nebraska schools. *Journal of Drug Education, 29*(2), 165–74.

Shaffer, H. J., Hall, M. N., Vander Bilt, J. & George, E. (2003). *Futures at stake: Youth, gambling, and society*. Reno, NV: University of Nevada Press.

Shaffer, H. J., LaBrie, R., Scanlan, K. M. & Cummings, T. N. (1994). Pathological gambling among adolescents: Massachusetts Gambling Screen (MAGS). *Journal of Gambling Studies, 10*(4), 339–362.

Sherk, J., Erkenbeck, J. & Becker, F. (2003). Student athletes and performance enhancing drug use. *Prevention Tactics, 7*(1). Retrieved in 2006 from http://www.emt.org/publications.html#tactics.

Shiltz, T. J. (1992). *10 steps for preventing student relapse.* Greenfield, WI: Community Recovery Press.

Simoni-Wastila, L., Ritter, G. & Strickler, G. (2004). Gender and other factors associated with the nonmedical use of abusable prescription drugs. *Substance Use and Misuse, 39*(1), 1–23. PMID: 15002942.

Sparks, C., Hodak, M. & Hudson, N. (2002). Kids act to control tobacco!: A collaborative program for schools, parents, and the community. Charlotte, NC: American School Health Association conference.

Springer, J. F., Hermann, J. & Sambrano, S. (2002). Characteristics of effective substance abuse prevention programs for high-risk youth. *Prevention Tactics, 6*(3). Retrieved in 2006 from http://www.emt.org/publications.html#tactics.

Spruijt-Metz, D., Gallaher, P. E., Unger, J. B. & Anderson-Johnson, C. (2004). Meanings of smoking and adolescent smoking across ethnicities. *Journal of Adolescent Health, 35*(3), 197–205. PMID: 15313501.

Stockwell, T., Toumbourou, J. W., Letcher, P., Smart, D., Sanson, A. & Bond, L. (2004). Risk and protection factors for different intensities of adolescent substance use: When does the Prevention Paradox apply*? Drug and Alcohol Review, 23*(1), 67–77. PMID: 14965888.

Stuart-Cassel, V. & Chandley, S. (2002). After-school programs as prevention. *Prevention Tactics, 6*(2). Retrieved in 2006 from http://www.emt.org/publications.html#tactics.

Stueve, A. & O'Donnell, L. N. (2005). Early alcohol initiation and subsequent sexual and alcohol risk behaviors among urban youths. *American Journal of Public Health, 95*(5), 887–893.

Substance Abuse and Mental Health Services Administration (see U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration).

Sussman, S., Rohrbach, L. A., Patel, R. & Holiday, K. (2003). A look at an interactive classroom-based drug abuse prevention program: Interactive contents and suggestions for research. *Journal of Drug Education, 33*(4), 355–368. PMID: 15237862.

Sutherland, I. & Shepherd, J. P. (2001). Social dimensions of adolescent substance use. *Addiction, 96,* 445–458.

Tatchell, T., Waite, P., Tatchell, R., Kaderavek, J., Strobel, S. & Jordan, T. (2004). Substance abuse in sixth grade: Results of a prevention program on adolescents' self-reported drug-related attitudes and behavior. *Psychological Reports, 94*(1), 225–226. PMID: 15077769.

Tobler, N. & Stratton, H. (1997). Effectiveness of school-based drug prevention programs: A meta-analysis of the research. *Journal of Primary Prevention, 17*(3).

University of California Irvine, Transdisciplinary Tobacco Use Research Center (TTURC). (2004). *Closing the gap on youth tobacco use.* Irvine, CA: UCI TTURC Office of Communications.

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA). (2006). Age of first use among admissions for drugs: 1993 and 2003. Report based on continued analysis of the Treatment Episode Data Set (TEDS). Author. Retrieved in 2007 from http://www.medicalnewstoday.com/medicalnews.php?newsid=36856.

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Substance Abuse Prevention. ATLAS *(athletes training and learning to avoid steroids.* Program Description. Retrieved in 2006 from http://modelprograms.samhsa.gov/template_cf.cfm?page=model&pkProgramID=6

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA). *Tips for teens: The truth about steroids.* Online publication. Retrieved in 2006 from http://ncadi.samhsa.gov/govpubs/phd726/.

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA). (2006). *Results from the 2005 national survey on drug use and health: National findings* (Office of Applied Studies, NSDUH Series H–30, DHHS Publication No. SMA 06-4194). Rockville, MD. Retrieved in 2006 from http://www.drugabusestatistics.samhsa.gov/NSDUH/2k5NSDUH/2k5results.htm#6.1.

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA). (2005). *Results from the 2004 national survey on drug use and health: National findings* (Office of Applied Studies, NSDUH Series H–28, DHHS Publication No. SMA 05-4062). Rockville, MD. Retrieved in 2006 from http://www.oas.samhsa.gov/NSDUH/2k4NSDUH/2k4results/2k4results.htm.

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA). (2004). *Results from the 2003 national survey on drug use and health: National*

findings (Office of Applied Studies, NSDUH Series H–25, DHHS Publication No. SMA 04–3964). Rockville, MD. Retrieved in 2006 from http://www.oas.samhsa.gov/nhsda/2k3nsduh/2k3Results.htm.

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA). (2003). *Results from the 2002 national survey on drug use and health: National findings* (Office of Applied Studies, NHSDA Series H–22, DHHS Publication No. SMA 03–3836). Rockville, MD. Retrieved in 2006 from http://www.oas.samhsa.gov/nhsda/2k2nsduh/Results/2k2Results.htm.

U.S. Department of Health and Human Services. (2006). *Healthy people 2010: Midcourse review.* Washington, DC: U.S. Government Printing Office. Retrieved in 2006 from http://www.healthypeople.gov/data/midcourse/default.htm

U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention (CDC). (1994). *Morbidity and Mortality Weekly Report,* 43/No. RR-2.

U.S. Department of Justice, National Drug Intelligence Center. (2004). Teens and drugs: Fast facts. Author. Retrieved in 2006 from http://0225.0145.01.040/ndic/pubs11/12430/12430p.pdf.

Van Vranken, M. (ed.). (2005). Prescription drug abuse. TeensHealth: Answers & advice. Nemours Foundation. Retrieved in 2006 from http://www.kidshealth.org/teen/drug_alcohol/drugs/prescription_drug_abuse.html

Vitaro, F., Wanner, B., Ladouceur, R., Brendgen, M. & Tremblay, R. E. (2004). Trajectories of gambling during adolescence. *Journal of Gambling Studies, 20*(1), 47–69.

Vitaro, F., Brendgen, M., Ladouceur, R. & Tremblay, R. E. (2001). Gambling, delinquency, and drug use during adolescence: Mutual influences and common risk factors. *Journal of Gambling Studies, 17*(3), 171–190.

Wagner, E. F., Tubman, J. G. & Gil, A. G. (2004). Implementing school-based substance abuse interventions: Methodological dilemmas and recommended solutions. *Addiction, 99(s2).*

Wagner, E. F., Dinklage, S. C., Cudworth, C. & Vyse, J. (1999). A preliminary evaluation of the effectiveness of a standardized Student Assistance Program. *Substance Use and Misuse, 34*(11), 1571–84.

Wagner, E. F., Brown, S. A., Monti, P., Myers, M. G. & Waldron, H. B. (1999). Innovations in adolescent substance abuse intervention. *Alcoholism: Clinical and Experimental Research, 23,* 236–249. PMID: 10069552.

Webster-Stratton, C., Reid, J. & Hammond, M. (2001). Preventing conduct problems, promoting social competence: A parent and teacher training partnership in Head Start. *Journal of Clinical Child Psychology, 30,* 282–302.

Webster-Stratton, C. (1998). Preventing conduct problems in Head Start children: Strengthening parenting competencies. *Journal of Consulting and Clinical Psychology, 66,* 715–730.

Wenter, D. L., Blackwell, S. & Davis, K. C. (2003). *Using multiple strategies in tobacco use prevention education. Legacy First Look Report 8*. Washington, DC: American Legacy Foundation. Retrieved in 2006 from http://www.americanlegacy.org.

Wilson, N., Battistich, V., Syme, S. L. & Boyce, W. T. (2002). Does elementary school alcohol, tobacco, and marijuana use increase middle school risk? *Journal of Adolescent Health, 30*(6), 442–447. PMID: 12039514.

Winkleby, M. A., Feighery, E., Dunn, M., Kole, S., Ahn, D. & Killen, J. D. (2004). Effects of an advocacy intervention to reduce smoking among teenagers. *Archives of Pediatric & Adolescent Medicine, 158*(3), 269–275.

Winters, K. C., Stinchfield, R. D., Botzet, A. & Slutske, W. S. (2005). Pathways of youth gambling problem severity. *Psychology of Addictive Behaviors, 19*(1), 104–107.

Winters, K.C. & Leitten, W. (2004). *Brief intervention manual for use with drug abusing adolescents.* Minneapolis: University of Minnesota.

Winters, K. C. (1999). *Treatment of adolescents with substance abuse disorders* (Treatment Improvement Protocol Series Monograph No. 32). Rockville, MD: U.S. Department of Health and Human Services, Center for Substance Abuse Treatment.

Winters, K. C. & Anderson, N. (2000). Gambling involvement and drug use among adolescents. *Journal of Gambling Studies, 16*(2/3), 175–198.

Wood, M. D., Read, J. P., Mitchell, R. E. & Brand, N H. (2004). Do parents still matter? Parent and peer influences on alcohol involvement among recent high school graduates. *Psychology of Addictive Behaviors, 18*(1), 19–30.

Wood, R. T. A., Gupta, R., Derevensky, J. L. & Griffiths, M. (2004). Video game playing and gambling in adolescents: Common risk factors. *Journal of Child and Adolescent Substance Abuse, 14*(1), 77–100.

Yurgelun-Todd, D. (2002). Frontline interview “Inside the Teen Brain” on PBS.org. Full interview available on the web at http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/interviews/todd.html.

Note: A PMID number indicates the article has been indexed by PubMed for MEDLINE.

EXHIBITS

Exhibit 14-1 Public and Private Schools and the Massachusetts Smoke-Free Workplace Law

Exhibit 14-2 Medford Public Schools Drug and Alcohol Policy

Exhibit 14-3 Policies to Discourage Tobacco Use

Exhibit 14-4 Sample School Smoking Policy

Exhibit 14-5 Guidelines for Screening a Student for Suspected Drug or Alcohol Use While in School

Exhibit 14-6 Checklist for Screening of a Student for Suspected Drug or Alcohol Use While In School

Exhibit 14-7 Protocol of Screening Assessment of a Student for Suspected Drug or Alcohol Use in School

Exhibit 14-8 Benefits of Quitting Smoking

Exhibit 14-9 Signs and Symptoms Indicating Use of Specific Drug Types

Exhibit 14-1 Public and Private Schools and the Massachusetts Smoke-Free Workplace Law

The Smoke-Free Workplace Law, M.G.L. c.270, s.22, mandates that enclosed workplaces with 1 or more employees must be smoke-free. The state law's intent is to protect workers in enclosed workplaces from secondhand smoke exposure. The full text of the law and additional information is available at http://www.mass.gov/dph/mtcp.

PUBLIC SCHOOLS

Is smoking allowed in public schools and on public school property?
No. The Smoke-Free Workplace Law prohibits smoking in all enclosed workplaces, including public and private schools. In addition, Massachusetts requires that all public schools through high school prohibit smoking on school grounds, on school buses, and at school-sponsored events. The law is commonly referred to as the "Education Reform Act" *(M.G.L. c.270, s.22(b)(2); M.G.L. c.71, ss.2A, 37H; M.G.L. c.90, s.7B(10)).*

Who enforces the Smoke-Free Workplace Law in/on public school property?
Local boards of health are the primary enforcing agents of the Smoke-Free Workplace Law *(M.G.L. c.270, s.22(m))*. The superintendent for the school district is responsible for publishing the district's policies prohibiting tobacco use. The principal of each school building is responsible for enforcing the school district's policies.

Are there any penalties for violating the law?
An owner, manager, or other person in control of a building who violates the Smoke-Free Workplace Law by failing to provide a smoke-free environment is subject to a civil penalty of $100 for the first violation, $200 for a second violation, and $300 for a third or subsequent violation *(M.G.L. c.270, s.22(l)).* Individual smokers may also be assessed a civil fine of $100 for each offense. Penalties are not specified for a violation of the Education Reform Act.

What if my school is a member of the MIAA?
MIAA has additional restrictions pertaining to tobacco use by athletes. For more information, visit the MIAA website at http://www.miaa.net.

PRIVATE SCHOOLS

Is smoking allowed in private schools and on private school property?
The Massachusetts Smoke-Free Workplace Law prohibits smoking in all enclosed workplaces, including private schools *(M.G.L. c.270, s.22(b)(2)).*

Are there any penalties for violating the law?
An owner, manager, or other person in control of a building who violates the Smoke-Free Workplace Law by failing to provide a smoke-free environment is subject to a civil penalty of $100 for the first violation, $200 for a second violation, and $300 for a third or subsequent violation *(M.G.L. c.270, s.22(l)).* Individual smokers may also be assessed a civil fine of $100 for each offense.

What if my school is a member of an Independent School League (ISL)?
ISL has additional restrictions pertaining to tobacco use by athletes. To find out if there are additional rules and violations, the school should contact the league directly.

GENERAL INFO

Are *No Smoking* signs required?
The law further requires every area in which smoking is prohibited by law to have a *No Smoking* sign posted, so it is clearly visible to all employees, customers, or visitors while in the workplace (school). Additional signs may also be posted in locker rooms, hallways, cafeterias, kitchens, or lobby areas. Signs are available for download at http://www.mass.gov/dph/mtcp.

What are the procedures for filing a complaint about smoking in a school?
Complaints can be filed by contacting your local board of health/health department, or by calling DPH at 800-992-1895. Complaint forms are available at http://www.mass.gov/dph/mtcp. Completed forms can be faxed to 617-624-5921 or mailed to the Massachusetts Tobacco Control Program, 250 Washington Street, Boston, MA 02108.

How can I find out more about the smoke-free school law in Massachusetts?
Visit the Massachusetts Department of Education website at http://www.doe.mass.edu.

For additional information, contact DPH at 800-992-1895, TDD/TTY 617-624-5992, http://www.mass.gov/dph/mtcp.

Exhibit 14-2

Medford Public Schools
DRUG AND ALCOHOL POLICY

GOALS

The Medford Public Schools wish to provide the optimum learning environment for our community of learners and therefore the Medford Public Schools promote a substance-free atmosphere. However, the Medford Public School System recognizes that certain individuals use/abuse drugs and alcohol. The use of these substances poses a potential danger to the individual using as well as the entire student body and staff. This policy recognizes the importance of a three-pronged approach to drug and alcohol use: prevention, enforcement, and rehabilitation.

The policy pertains to all vehicles while under school jurisdiction, all school facilities, all school grounds, and all school sponsored functions and events regardless of their location. State law mandates that anyone within 1,000 feet of school building convicted of possessing drugs with intent to distribute or actually distributing receive a mandatory two-year jail sentence.

School lockers, desks, and all other school fixtures are considered school property. The school system reserves the right to conduct periodic inspection of all school property.

DEFINITION OF DRUGS

The term drug includes all illegal drugs. It also includes over the counter medication, prescription medication, inhalants, or any substance that has not received medical clearance from the school health office for use by a specific student.

DEFINITION OF ABUSE

Students are not allowed to posses any drug or medication in school. Students who need inhalers, insulin, or epi-pens must be identified by the health office as having permission to carry their medication.
Any illegal use of drugs and/or the misuse of prescribed over-the-counter medications as defined in the Medford Public Schools Medication Policy constitutes abuse.

Any use of alcohol, including medications containing alcohol, is forbidden and considered abuse.

DEFINITION OF SUSPICION

Suspicion is defined as: Recognition that a student's or individual's behavior or appearance is out of the ordinary, with or without evidence.

POLICY

Students with legitimate medical needs must be identified and cleared in the health office. Any student needing to take medication must follow the Medford Public Schools Medication Policy.

No student can transport medication to school as per policy.

Any illegal use of drugs and/or the misuse of prescribed or over the counter medications as defined in the Medford Public Schools Medication Policy constitutes abuse.

No person shall possess, have under his/her control, sell, dispense, purchase, administer, transport, be in the presence of, possess with intent to sell, or conceal alcohol or any controlled drug or any substance represented to be a drug or alcohol.

No person shall ingest, inject, inhale, or otherwise introduce into the human body nor be under the influence of any drug or alcohol.

No person shall possess, have under his/her control, sell, dispense, purchase, transport, possess with intent to sell, or conceal any drug paraphernalia or objects used for the containment or dispensing of alcohol.

Student athletes/cheerleaders and parent/guardian of each must attend a mandatory chemical awareness session prior to the start of each season as a requirement of eligibility.

On an annual basis, all students will sign an acknowledgment of having read the drug and alcohol policy after they have done so.

School property, including lockers, may be periodically checked for drugs/alcohol at the discretion of the administration when there is reasonable suspicion of a violation of school rules.

Students will not be allowed access to their cars/vehicles during the school day unless accompanied by a school official.

PREVENTION

The comprehensive health curriculum shall address the issues of drugs, alcohol, and tobacco throughout a student's academic experience. A variety of age-appropriate methods will be used, including, but not limited to, the established core curriculum, DARE, specific tobacco programs, and CASPAR (Alcohol/Drug Education).

- Tobacco education and tobacco cessation programs will be offered during the school year.
- The school will provide training and review of its drug/alcohol policies each year to all staff.
- Chemical awareness programs will be offered to all parents annually.

Local law enforcement, with approval of the principal or his/her designee, may periodically provide assistance in maintaining a drug/alcohol free environment. This may include both announced and unannounced visits by the canine drug detection unit, in accordance with procedures promulgated by the Middlesex District Attorney's Office.

POLICY ENFORCEMENT

All students are expected to meet the requirements for behavior as set forth in this handbook.

Any student who poses an immediate threat to the safety of himself/herself or others will be suspended regardless of their regular/special education status.

Additional provisions are made for individual students who have been found to need an Individual Education Plan. The Individual Education Plan of all students must state whether the student is able to meet the discipline code or if some modification is needed. A representative of the special education department will participate/advise in the disciplinary procedures for students with IEPs to interpret all modifications of the IEP and pertinent legal issues. Students without a modified discipline code shall be subject to the discipline outline below.

Any staff member who suspects that a student is in violation of the school drug/alcohol policy is required to report the situation immediately to the appropriate administrator of that building (Submaster, Assistant Principal, Assistant Director, Principal, or Director) for evaluation. The appropriate administrator is then responsible to notify the school resource officer or designee.

Staff members must be assured of confidentiality in reporting.

It is recommended that one individual in each building be identified as the appropriate administrator. The appropriate administrator must report all incidents, regardless of severity or outcome, in writing to the head administrator.

If the administrator determines probable ingestion of drugs or alcohol, the student must be escorted to the health office for medical evaluation. If the nurse determines the student must be medically evaluated, the student will be transported via ambulance to the nearest medical facility.

When there are reasonable grounds to believe or where facts and circumstances give rise to reasonable suspicion that a person has violated or is violating either the law or the rules of the school as outlined in this

policy and that a search will turn up evidence, a search conducted by the school officials will be permissible if its scope is reasonably related to the objectives of the search.

The Medford Public Schools have a Memorandum of Agreement with the Medford Police. Any student found to be in violation of the policy must be reported to the school resource officer or police designee.

In case of medical emergencies, the health office will notify the parent/guardian. The administrator in charge will handle all other communications between the school and parent/guardian.

VIOLATION

Not withstanding the possibility of expulsion, the following disciplinary policy is recommended. The principal reserves the right to increase the penalty, based on the circumstances of each case.

First Offense

The school administrator notifies the school resource officer or designee. A student in violation will be suspended for 3 days. The student will be immediately removed from the school by parent/guardian or transported to the nearest medical facility if necessary. Social probation is imposed for one month.* Reentry must be accompanied by medical evidence that the student is drug/alcohol free.** The Director of Guidance will refer the student to an in-house counselor for continued follow-up and monitoring of the treatment plan. The parent/guardian must meet with school administration to discuss a specific plan for the student, including monitoring of behavior as well as treatment.

Second Offense within One Year of First Violation

The police resource officer is notified. A student in violation will be suspended for 6 days. The student will immediately be removed from the school by parent/guardian or transported to the nearest medical facility if necessary. Social probation is imposed for 2 months.* Reentry must be accompanied by medical evidence that the student is drug/alcohol free.** The parent/guardian must agree to enroll said student in an outpatient drug/alcohol treatment program. The student must agree to adhere to the treatment plan recommended by the program. The Director of Guidance will refer the student to an in-house counselor for continued follow-up and monitoring of the treatment program. Failure to meet the treatment program requirements will result in an exclusionary hearing.

Third Offense within One Year of First Violation

The police resource officer is notified. A student in violation will be suspended indefinitely, minimum 10 days, until an exclusionary hearing takes place. Social probation period is indefinite.

DISTRIBUTING

If a student is found to be selling, distributing, or in possession of a quantity sufficient to be charged with the intent to distribute drugs or alcohol, the Principal or designee will immediately notify the parent and the police for mandatory removal of the student. There will be Out of School Suspension and possible exclusion by the Principal. The police will take appropriate action under the law regarding the sale of drugs in proximity to school buildings. An incident report must be completed and forwarded to the head administrator.

CONFISCATED DRUGS/ALCOHOL/PARAPHERNALIA

All confiscated drugs, alcohol, or paraphernalia must be immediately turned over to the police resource officer or his/her designee. A receipt should be obtained.

REHABILITATION

The Medford Public School System is committed to the academic achievement of all students. A student who is experiencing difficulty with drugs/alcohol will be supported through health services, counseling services, and administration. The school system will make every attempt to provide the parent/guardian with a referral for available community resources. The schools will annually review all policies and health curriculum to discourage students from engaging in risk-taking behaviors and encourage positive, healthy life choices.

All students are encouraged to see their counselor, nurse, or police resource officer if they feel they are in need of assistance with alcohol or drugs. The school's support services will assist students to receive appropriate referrals.

The implementation of this policy will utilize all applicable due process, statutes, regulations, and guidelines.

* Social Probation — Violation of the drug/alcohol policy is a serious infraction of the Code of Discipline in the Medford Public Schools. Students will lose the privilege of attending all school-sponsored events for the duration indicated. Seniors in violation of the drug/alcohol code will jeopardize participation in graduation exercises.

** Medical Evidence — The parent/guardian is ultimately responsible for the medical clearance of the student.

Permission to reprint: Medford Public Schools (Medford, MA).

Exhibit 14-3 Policies to Discourage Tobacco Use

1. PURPOSE AND GOALS

INTENT
All students shall possess the knowledge and skills necessary to avoid all tobacco use, and school leaders shall actively discourage all use of tobacco products by students, staff, and school visitors. To achieve these ends, district/school leaders shall prepare, adopt, and implement a comprehensive plan to prevent tobacco use that includes:

- a sequential educational program to prevent tobacco use that is integrated within the school health education curriculum; that is aimed at influencing students' attitudes, skills, and behaviors; and that is taught by well-prepared and well-supported staff;
- establishment and strict enforcement of completely tobacco-free school environments at all times;
- prohibition of tobacco advertising;
- appropriate counseling services and/or referrals for students and staff to help them overcome tobacco addiction;
- cooperation with community-wide efforts to prevent tobacco use; and
- strategies to involve family members in program development and implementation.

RATIONALE
Cigarette smoking is considered the chief preventable cause of premature disease and death in the United States. Schools have a responsibility to help prevent tobacco use for the sake of students' and staff members' health and the well-being of their families. Research conclusively proves that:

- Regular use of tobacco is ultimately harmful to every user's health, directly causing cancer, respiratory and cardiovascular diseases, adverse pregnancy outcomes, and premature death.
- Second-hand smoke is a threat to the personal health of everyone, especially persons with asthma and other respiratory problems.
- Nicotine is a powerfully addictive substance.
- Tobacco use most often begins during childhood or adolescence.
- The younger a person starts using tobacco, the more likely he or she will be a heavy user as an adult.
- Many young tobacco users will die an early, preventable death because of their decision to use tobacco.

Additional reasons why schools need to strongly discourage tobacco use are that:

- The purchase and possession of tobacco products is illegal for persons under age 18 (depending on local laws).
- Use of tobacco interferes with students' attendance and learning.
- Smoking is a fire safety issue for schools.
- Use of spit tobacco is a health and sanitation issue.

DEFINITION
For the purposes of this policy, "tobacco" is defined to include any lighted or unlighted cigarette, cigar, pipe, bidi, clove cigarette, and any other smoking product, and spit tobacco, also known as smokeless, dip, chew, and snuff, in any form.

2. TOBACCO-FREE ENVIRONMENTS

TOBACCO USE PROHIBITED
No student, staff member, or school visitor is permitted to smoke, inhale, dip, or chew tobacco at any time, including nonschool hours:

- in any building, facility, or vehicle owned, leased, rented, or chartered by the state/district/school;
- on school grounds, athletic grounds, or parking lots; or
- at any school-sponsored event off campus.

In addition, no student is permitted to possess a tobacco product. The provisions of existing policies that address the use and possession of drugs shall apply to all tobacco products.

TOBACCO PROMOTION
Tobacco promotional items, including clothing, bags, lighters, and other personal articles, are not permitted on school grounds, in school vehicles, or at school-sponsored events. Tobacco advertising is prohibited in all school-sponsored publications and at all school-sponsored events.

CLOSED CAMPUS
No student may leave the school campus during breaks in the school day to use a tobacco product. Signs to this effect will be posted at appropriate locations. School authorities shall consult with local law enforcement agencies to enforce laws that prohibit the possession of tobacco by minors within the immediate proximity of school grounds.

NOTICE
The superintendent/principal/other shall notify students, families, education personnel, and school visitors of the tobacco-free policy in handbooks and newsletters, on posted notices or signs at every school entrance and other appropriate locations, and by other efficient means. To the extent possible, schools and districts will make use of local media to publicize the policies and help influence community norms about tobacco use.

ENFORCEMENT
It is the responsibility of all students, employees, and visitors to enforce this policy through verbal admonition. Any tobacco product found in the possession of a minor student shall be confiscated by staff and discarded. Students and employees also may be subject to sanctions as determined by written school policy, including disciplinary action. All school staff shall participate in training on the correct and fair enforcement of tobacco-free policies.

3. TOBACCO-USE PREVENTION EDUCATION

INSTRUCTIONAL PROGRAM DESIGN
Tobacco-use prevention education shall be integrated within the health education program and be taught at every grade level throughout primary and secondary schooling. The educational program shall be based on theories and methods that have been proven effective by published research and consistent with the state's/district's/school's health education standards/guidelines/framework. The program shall be designed to:

- instruct about immediate and long-term undesirable physiological, cosmetic, and social consequences of tobacco use;
- decrease the social acceptability of tobacco use;
- address reasons why young people smoke;
- teach how to recognize and refute advertising and other social influences that promote tobacco use;
- develop students' skills for resisting social influences that promote tobacco use; and
- develop necessary assertiveness, communication, goal-setting, and problem-solving skills that may enable students to avoid tobacco use and other health-risk behaviors.

Instruction shall be most intensive in grades 6–8 and shall be reinforced in all later grades. Instructional activities shall be participatory and developmentally appropriate. The program shall engage families as partners in their children's education.

STAFF PREPARATION
Staff responsible for teaching tobacco-use prevention shall have adequate pre-service training and participate in ongoing professional development activities to effectively deliver the education program as planned. Preparation and professional development activities shall provide basic knowledge about the effects of tobacco use combined with skill practice in effective instructional techniques and strategies and program-specific activities.

EDUCATIONAL REINFORCEMENT
Tobacco-use prevention education shall be closely coordinated with the other components of the school health program. Tobacco-use prevention concepts shall also be integrated into the instruction of other subject areas to the greatest extent possible.

To send consistent messages to students and their families, school instructional staff shall collaborate with agencies and groups that conduct tobacco-use prevention education in the community. Guest speakers invited to address students shall receive appropriate orientation to the relevant policies of the school/district. School staff shall also help interested students become involved with agencies and other organizations in the community that are working to prevent tobacco use.

4. ASSISTANCE TO OVERCOME TOBACCO ADDICTION

PROGRAM AVAILABILITY
The school health program shall include referrals to community resources and programs to help students and staff overcome tobacco addiction. School counselors or community agencies are encouraged to establish voluntary tobacco-use cessation programs at school.

PROGRAM ATTENDANCE
Attendance or completion of a tobacco-use cessation program shall not be mandatory for anyone or used as a penalty. Attendance or completion of a tobacco-use cessation program is accepted as a voluntary substitute to suspension for possession or use of tobacco.

From *Fit, Healthy, and Ready to Learn: A School Health Policy Guide, Part I - Physical Activity, Healthy Eating, and Tobacco Use Prevention,* by National Association of State Boards of Education (2000), http://www.nasbe.org/HealthySchools/fithealthy.mgi.

Exhibit 14-4 Sample School Smoking Policy

The purpose of this Policy is to align (town name) Public Schools with that of State Law (Smoke free workplace) and to provide that the health of all (town name) Public School employees and students is paramount to the (town name) School Committee.

Violations may be issued by the following (town name) Public Schools employees:

- Superintendent
- Assistant Superintendents
- Principals
- Associate Principals
- Assistant Principals
- Deans
- Housemasters
- Designee of Superintendent's choice

This policy applies to anyone smoking tobacco products in any (town name) Public Schools building or on any (town name) Public Schools grounds before, during, or after regular school hours, 7 days a week, 365 days a year. The loss of sports and school activities will not end with the academic year. It will be carried out on a rolling 12-month period and will carry on to the next academic year to fulfill the policies guidelines, if needed.

For the intent of this policy, graduation will not be considered an activity that could be lost as a result of a violation. Examples of school activities would be school dances, clubs, school governance, and attendance at all other school sponsored activities.

First offense:

- $100 fine.
- 2 weeks out of any school sports and/or any school related activity in which the student is involved. This will include any practices that may be required. If an activity or club meets only once a month, the loss of that activity or club would be one meeting or practice.
- Smoking cessation program will be offered.
- Parental notification.

Second offense:

- $100 fine.
- 12 weeks out of any school sports and/or any school related activity in which the student is involved. This will include any practices that may be required.
- Smoking cessation program will be offered.
- Mandatory parental meeting with Principal, Dean, or Housemaster.
- 1 day of Independent Work Station.
- Loss of leadership role for any sports team, activity, club, or school governance position.

Third Offense:

- $100 fine.
- 6 months out of any school sports and/or any school related activity in which the student is involved. This will include any practices that may be required.
- Smoking cessation program will be offered.
- Mandatory parental meeting with Principal, Dean, or Housemaster.
- 2 days of Independent Work Station.

Fourth Offense:

- $100 fine.
- 12 months out of any school sports and/or any school related activity in which the student is involved. This will include any practices that may be required.

- Smoking cessation program will be offered.
- Mandatory parental meeting with Principal, Dean, or Housemaster.
- 3 days of Independent Work Station.
- Police/Court referral.

In rare circumstances, the Principal of a building, through the Superintendent of schools, may present to the School Committee a certain set of circumstances that could deem that a student be relieved of the balance of this policy. It will be understood that only the School Committee has the ability to perform this function. It will also be understood that in doing so, the School Committee will not be setting any precedent and that this will be looked at on a case by case basis.
Legal Reference: M.G.L. c.270, s.22(m)(1), s.22(m)(2).

Source: Adapted from a draft policy of the Weymouth Public Schools.

Exhibit 14-5 Guidelines for Screening a Student for Suspected Drug or Alcohol Use While in School

Upon request by a school administrator, or as a part of a nursing assessment of a student presenting in the Health Room with suspected drug or alcohol use, the School Nurse will conduct an initial screening for change in a student's neurological status, vital signs, and/or cognitive state.

The following are guidelines for assessment:

- The student is informed that he/she is being assessed for suspected drug or alcohol use based on presenting behavior or physical symptoms.
- Vital signs are taken — Blood pressure and pulse.
- Neuro signs are checked:
  - Level of consciousness is noted: alert, confused, somnolent
  - Pupils are assessed in a darkened room with a flashlight for reactivity and pupil size (dilated or pinpoint)
  - Student is asked to follow a finger without moving his/her head, to see if eyes can follow directions of up, down, sideways
  - Student is asked to walk heel to toe the length of room
  - Student is asked to close eyes, put both hands out by side, then stand on one foot, then the other to check for balance
  - Breath check for suspected alcohol ingestion
  - Have students remove any mints or gum from mouth and blow toward assessor's face with mouth open wide
- If an administrator is present, he/she will ask permission of the student to go through the student's backpack, pocketbook, or other belongings.
- If an administrator is not present when the assessment is made, and there are any positive findings, the administrator is to be called immediately and will take over the notification of the parent/guardian as well as any disciplinary follow-up.

Calling 911

If nursing assessment warrants concern for a student's immediate safety and physical state, emergency medical assistance will be summoned by calling 911. Parents will be called simultaneously, and the administrator will facilitate the necessary contact and follow-up. The student's Primary Care Physician may be called by the School Nurse for advice and consent for emergency treatment if the situation allows this without endangering the student because of a delay.

Permission to Reprint: Lexington Public Schools, Lexington, Massachusetts, 1/03.

Exhibit 14-6 Checklist for Screening of a Student for Suspected Drug or Alcohol Use While In School

Date: _____ Time initiated: _____
Time completed: _____

Student name: _____ DOB: _____
Administrator: _____
School: _____

_____ 1. Student has been informed that he/she is being assessed for suspected drug or alcohol use in school based on presenting behavior or physical symptoms.

_____ 2. BP: _____ Pulse: _____ Temp: _____

_____ 3. Neurological Assessment: ____alert ____ confused ____ somnolent

Pupils are:
- Oriented to person: _____
- Oriented to time: _____
- Oriented to place: _____

Student can follow commands:
- Follow finger up, down, sideways: _____
- Can walk heel to toe length of room: _____
- Can close eyes, place both hands by side, then stand on one foot then other: _____

_____ 4. Subjective breath check for suspected alcohol ingestion:
Remove mints and gum from mouth and blow toward assessor's face with open mouth.

_____ 5. If administrator is present, permission is granted by student to search of belongings by administrator. Administrator name: _____

_____ 6. If administrator is not present, and positive findings, administrator called to take over situation. Time called: _____

_____ 7. Assessment is made if student needs immediate medical help.
- 911 called at (time): _____
- Parent called at (time): _____
- Primary Care Provider called at (time): _____

Narrative Assessment and comments:

Outcome:

_____ RN
(Signature)

Permission to adapt and reprint: Lexington Public Schools, Lexington, Massachusetts, 1/03

Exhibit 14-7 Protocol of Screening Assessment of a Student for Suspected Drug or Alcohol Use in School

Date:_____
Time:_____

Student name: _____ DOB: _____

Referring teacher/administrator's comments:_____

_____

Student's comments:_____

_____

Physical Assessment:
B/P _____ Pulse _____ Resp. rate _____
Temp _____ Weight _____
Pupil size (mm) _____left _____right
Pupil assessment _____left _____right
Pupil reaction to light _____left _____right
Nystagmus _____vertical _____horizontal
Upper extremities, DTRs _____left _____right
Lower extremities, DTRs _____left_____right
Nose _____
Mouth _____
Lungs _____
Skin _____
Odors _____

Mental Status:

Is student: Oriented to person? _____
Oriented to time? _____
Oriented to place? _____
Lethargic/Somnolent? _____
Delusional? _____
Coordinated? _____
Paranoid? _____
Anxious? _____
Depressed? _____
Hyperactive? _____
Euphoric? _____
Speech slurred? _____

Is administrator present? _____

Search of belongings conducted by administrator? _____

_____

Search of locker conducted by administrator? _____

_____

Search of car on school property conducted by administrator? _____

_____

Drug paraphernalia found? _____

Drugs found? _____

If drugs found, was police department notified? _____

_____

Is student in need of medical help? _____

- 911 called at (time): _____
- Parent called at (time): _____
- Primary Care Provider called at (time): _____

Parents' response/comments: _____

_____

Has teacher/referring official been notified of findings? _____

Summary of Assessment:

Signed: _____
RN

_____
Administrator

Permission to reprint the above protocol was granted by the author, Marilyn Grifoni Belmonte, Drug Abuse Recognition Programs, "Reducing Drug Abuse Through Recognition and Community Awareness," http://www.DrugAbuseRecognition.com.

Exhibit 14-8 Benefits of Quitting Smoking

Studies have shown that people who quit smoking live longer than those who continue to smoke. Those who quit notice that they perform better in sports, that their hair and clothes smell fresher, and that their sense of taste improves. Some of the specific health advantages of quitting tobacco use include:

- Within 20 minutes: Blood pressure, pulse rate, temperature of hands and feet return to normal.
- Within 8 hours: Carbon monoxide and oxygen levels in the blood are normal. “Smoker’s breath” is gone.
- Within 2 days: Sense of smell and taste improves.
- Within 3 days: Breathing becomes easier. Lung capacity increases.
- Within 2 to 12 weeks: Circulation improves. Walking becomes easier.
- Within 1 to 9 months: Coughing, sinus congestion, and shortness of breath decrease. Overall energy level and stamina increase. Cilia regrow, helping the body to handle mucus and combat infections.
- Within 2 years: Heart attack risk drops to near normal.
- Within 5 years: Lung cancer risk drops 50%.
- Within 7 years: Bladder cancer risk drops to near normal.
- Within 10 years: The risk of most cancers (mouth, larynx, esophagus, lung, kidney, pancreas) is near normal.
- Before the 4th month of pregnancy: The risk of having a stillborn or low-birth-weight baby will be reduced to normal rates.

Exhibit 14-9 Signs and Symptoms Indicating Use Of Specific Drug Types

Drug Type	Physical/Behavioral Symptoms	Environmental Clues
Marijuana	• Glassy, bloodshot eyes • Loud talking and inappropriate laughter followed by sleepiness • A sweet, burnt scent • Loss of interest, motivation • Weight gain or loss • Smell in hair or on clothing (sweet, pungent odor) • “Munchies” or sudden appetite • Wetting lips or excessive thirst (known as “cotton mouth”) • Avoiding eye contact when challenged about use • Burned or sooty fingers (from “joints” or “roaches” burning down)	• Evidence such as seeds, often in devices used to clean marijuana (Frisbees are a typical tool used for this purpose) • Items used as makeshift smoking devices (e.g., bongs made out of toilet paper rolls and aluminum foil)
Cocaine	• Jumpy, nervous behavior • Restlessness • Excessive talking, rapid speech • Dilated pupils in well-lit room • Runny nose or bloody nose (with no associated cold or other illness) • Periods of high energy followed by long sleep or exhaustion	
Amphetamines	• Unusual elation (“manic”) • Jumpiness, shaky hands, restlessness • Fast or incoherent speech • Poor appetite and/or weight loss • Hyperactivity • Insomnia • Periods of sleeplessness followed by long periods of “catch up” sleep • Poor attention span	
Depressants (includes barbiturates and tranquilizers)	• “Drunk” demeanor without accompanying odor of alcohol • Difficulty concentrating • Clumsiness • Poor judgment • Slurred speech • Sleepiness • Contracted pupils	
Stimulants	• Euphoria • Irritability • Anxiety • Excessive talking followed by depression or excessive sleeping at odd times • Hyperactivity • Going long periods of time without eating or sleeping • Dilated pupils • Weight loss • Dry mouth and nose	

Drug Type	Physical/Behavioral Symptoms	Environmental Clues
Hallucinogens	• Dilated pupils • Bizarre and irrational behavior, including paranoia, aggression, or hallucinations • Mood swings • Detachment from people • Absorption with self or other objects • Slurred speech • Confusion	
Heroin	• Needle marks • Sleeping at unusual times • Sweating • Vomiting • Coughing and sniffling • Twitching • Loss of appetite • Contracted pupils • Pupils unresponsive to light	
Inhalants	• Facial rash • Blister, rashes, or soreness around the nose, mouth, and/or lips • Runny nose, secretions from the nose, and frequent sniffing • Irritated, watery, or glazed eyes and dilated pupils • Frequent unexplained coughing • Headaches • Hand tremors • Poor muscle control • Unusual harsh breath odor • Appearance of intoxication • Drowsiness • Impaired vision, memory, and thought • Extreme mood swings • Uncontrolled laughter • Grandiose and hostile speech • Bizarre risk-taking • Increased irritability and anger • Anxiety • Violent outbursts • Nausea, loss of appetite, and vomiting • Hallucinations and convulsions	• Discarded product containers such as bags, rags, gauze, or soft drink cans used to inhale the fumes • Traces of odors of paint, gasoline, or glue

Chapter 15

ORAL HEALTH

The Scope of the Problem

Legal/Regulatory Issues

Policy Implications for Schools

The School's Role

Specific Oral Health Issues

First Aid for Dental Problems and Emergencies

Screening/Assessment

Summary

Resources: Curricula and Teaching Materials

Resources: Massachusetts Agencies and Organizations

Resources: National Agencies and Organizations

References

Exhibits

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 15

ORAL HEALTH

As an essential component of overall health, oral health should be an integral part of a comprehensive school health program. Poor oral health can negatively affect general physical condition, appearance, speech, and interpersonal relations. A diseased mouth can cause pain, infection, lowered concentration, absence from school, limited ability to chew foods, speech defects, poor appearance, and premature tooth loss, among other conditions, all of which can impact a child's long-term physical and emotional health, contributing to systemic illnesses, damaging self-esteem, and limiting social and academic potential.

THE SCOPE OF THE PROBLEM

In 2000, Surgeon General David Satcher released *Oral Health in America: A Report of the Surgeon General,* the first-ever Surgeon General's report on the subject. The report identified tooth decay as the *single most common* chronic childhood disease — 5 times more common than asthma and 7 times more common than hay fever. The report estimated that 51 million school hours are lost each year to oral disease (U.S. Department of Health and Human Services, 2000).

Through its Healthy People 2010 initiative, the U.S. government has set many national goals to improve the oral health of children and youth, including:

- reducing the proportion of children and adolescents with untreated dental decay in primary and permanent teeth to 21%;
- reducing the proportion of adolescents with untreated dental decay to 15%;
- increasing the proportion of children and adolescents who receive dental sealants on their molar teeth to 50%; and
- reducing the proportion of children and adolescents who have dental caries experience in their primary or permanent teeth to 42%.

Tooth decay, periodontal disease, malocclusion (irregularity in the jaw or crowding of the teeth), and oral injuries affect schoolchildren across Massachusetts. In 2003, a statewide oral health survey of Massachusetts third-graders found that 48% of those screened had experienced dental disease, 26% had untreated disease, and nearly 7% had urgent dental treatment needs (Office of Oral Health: Massachusetts Department of Public Health, 2004).

Poor children tend to suffer disproportionately from both incidence and severity of dental disease. Nationally, 25% of children experience 80% of all childhood tooth decay, and this affected group is largely made up of cultural and ethnic minority children, economically disadvantaged children, and children with special health care needs. Lack of financial means and/or dental insurance, limited

access to dental services, lack of parental education, minority status, and fear of pain all contribute to the problem.

The Massachusetts dental safety net provides dental care to Medicaid recipients through its 57 dental clinics across the state. Located in community health centers, school-based health centers, hospitals, dental and dental hygiene schools, and other community settings, these clinics are MassHealth dental providers, and many have a sliding fee-scale and/or participate in other public safety net programs.

LEGAL/REGULATORY ISSUES

Massachusetts statutes do not refer directly to the subject of dental health or dental treatment in the school program. Although M.G.L. c.111, s.50 grants local boards of health the authority to establish clinics, the majority of communities do not provide dental clinics.

Massachusetts does not specifically mandate that children entering school have a dental examination. However, this objective may be linked locally to other medical requirements for children entering school, such as physical examinations, hearing/vision and height/weight screenings, and immunizations.

M.G.L. c.71, s.1, the legal basis for health education in Massachusetts public schools, states that instruction in health education should include dental health. The implementation of health education requirements is the responsibility of local school districts.

POLICY IMPLICATIONS FOR SCHOOLS

As caregivers of children, all school health administrators should consider the need to incorporate oral health services in school health programs. Every school health program should be asking the following questions:

Is our community's water fluoridated? All water contains trace amounts of fluoride; community water fluoridation is the adjustment of the amount of fluoride to an optimal level that ranges from 0.7 to 1.2 parts per million. Community water fluoridation is the most cost-effective measure for preventing and reducing tooth decay for all members of a community, and it reduces dental disease in children by up to 40%. In a 2004 statement endorsing community water fluoridation, U.S. Surgeon General Dr. Richard H. Carmona noted:

> "A significant advantage of water fluoridation is that all residents of a community can enjoy its protective benefit — at home, work, school, or play — simply by drinking fluoridated water or beverages and foods prepared with it. A person's income level or ability to receive routine dental care is not a barrier to receiving fluoridation's health benefits."

The cost of community water fluoridation is low — approximately 25 to 75 cents per person per year. All the scientific evidence conclusively shows that fluoridation is safe and effective.

As of 2005, 135 of Massachusetts's 351 communities, representing approximately 62% of the state's population, have fluoridated water. Information about the level of water fluoridation in a particular community can be obtained using the oral health data system My Water's Fluoride, maintained by the

National Center for Chronic Disease Prevention and Health Promotion's Division of Oral Health. Data for Massachusetts communities can be accessed at http://apps.nccd.cdc.gov/MWF/index.asp.

Is our school eligible for the Fluoride Mouth Rinse Program? Since 1978, Massachusetts has offered a free school-based Fluoride Mouth Rinse Program in communities where city/town water or well water is not optimally fluoridated. Over 45,000 schoolchildren across the state currently participate in this program, which provides school-age children in grades 1–6 with a simple, effective, and inexpensive means of preventing dental decay.

The mouth rinse kits used in this program contain a 0.2% solution of sodium fluoride, which has been shown to be effective in preventing dental decay, especially in high-risk children. Fluoride rinse programs are an important adjunct to good oral health, along with the use of fluoride toothpaste at home and professionally applied fluorides in the dental office.

School systems using this program find it appropriate and effective for the following reasons: (1) the procedure is brief, taking approximately 5 minutes of classroom time per week, (2) few materials are needed, (3) it is easy for schoolchildren to participate, (4) non-dental professionals can supervise the process with minimal training, and (5) it is free of charge to the school, as all supplies are provided by DPH's Office of Oral Health (OOH).

Is oral health education part of our Comprehensive School Health Education Program? Oral health education should be part of a comprehensive health education program. A comprehensive oral health education curriculum has multiple components and should begin in grade 1 and continue through grade 12.

Does our school comply with Massachusetts Interscholastic Athletic Association (MIAA) regulations regarding use of mouth guards? Mouth guards are mouth protectors used to prevent injury during sports. Wearing mouth guards helps prevent injury to the teeth, lips, cheeks, and tongue. MIAA regulates the use of mouth guards during specific sporting activities. In Massachusetts, mouth guards are currently required in seven scholastic sports — football, field hockey, ice hockey, lacrosse, soccer, wrestling, and basketball.

In addition to these sports, the Massachusetts Dental Society (MDS) recommends that participants wear mouth guards in all sports in which injury to the mouth may occur, including baseball, volleyball, and other contact sports. MDS recommends that even athletes who use helmets or face masks wear mouth guards, since they also protect against head and neck injuries by cushioning blows that could otherwise cause concussions or jaw fractures.

Increasing the proportion of schools that require use of appropriate head, face, eye, and mouth protection for students participating in school-sponsored physical activities is also a developmental goal of Healthy People 2010 (no exact target has yet been established). (See Traumatic Oral Injuries under the section "Specific Oral Health Issues" for additional information on mouth guards.)

Are oral screenings included in the annual screenings performed in our school? Like screenings for vision and hearing, oral screenings assist children by identifying oral disease and providing appropriate referrals. Many schools have community dental professionals who volunteer to perform annual oral health screenings. **Note:** Data collected from school-based dental screenings should be considered confidential and handled in accordance with HIPAA regulations.

Are dental sealants part of our comprehensive school health program? Dental sealants are plastic coatings applied to the chewing surfaces of back teeth to seal out food and bacteria and

prevent decay. The ideal time for dental sealant placement is immediately after eruption of 6-year and 12-year molars. The Task Force on Community Preventive Services, an independent strategy evaluation group convened by the U. S. Department of Health and Human Services to address a variety of public health and health promotion topics, has found strong evidence that school-based and school-linked dental sealant delivery programs are effective in reducing tooth decay in children and adolescents.

Based on these findings, the Task Force recommends including these programs as part of a comprehensive population-based strategy to prevent or control dental caries in communities. Massachusetts has surpassed the Healthy People 2010 goal of 50% of third-graders with dental sealants; according to the *2003 Give Kids a Smile* oral health survey of third-grade schoolchildren, 54% of Massachusetts third-graders have at least one dental sealant.

THE SCHOOL'S ROLE

School health programs can play an important role in promoting and maintaining students' oral health. The main goals of a school oral health program are to: (1) promote oral health as an important component to physical health, (2) maintain oral health for those who have achieved it, (3) prevent oral disease, and (4) link children and their families to a consistent dental provider. A school-based or school-linked health program can be especially helpful for children who may not have access to routine dental care. The program should emphasize disease prevention and equip all students with the knowledge and skills necessary to maintain healthy teeth and mouths. It should also work to motivate professionals in the community to make affordable dental treatment available and promote preventive measures such as community water fluoridation and the use of fluorides and sealants for school-age children.

Dental Screening

In addition to providing population-based information to state health agencies, school-based dental screenings provide an opportunity to identify and refer children needing oral health care services. (See Chapter 5 for detailed information on dental screening methodology.) Dental screenings should always include a referral system and follow-up to ensure that referrals are completed. Regular dental exams (twice a year) are important for maintenance of children's oral health.

For families who cannot afford dental care, the school nurse may be able to help by contacting the local dental society, the Massachusetts Dental Society, or the local board of health to obtain the names of dentists who offer low-cost services or accept Medicaid. In addition, three programs are available that may offer coverage to many children in working families:

- ***MassHealth*** has comprehensive dental coverage for children under the age of 19. Eligibility is based on family income. It is important for families to check first to determine if their children are eligible for MassHealth.
- ***Children's Medical Security* Plan (CMSP)** is available for children who are not eligible for MassHealth because of income or immigration status. CMSP provides dental coverage up to a specified amount per child per year. The amount the family pays for CMSP is dependent on family size and income.
- ***Massachusetts Uncompensated Care Pool*** is available to provide dental coverage for children who are ineligible for other insurance and who receive care in a hospital or health center dental clinic.

For more information on eligibility for any of these programs, call the Mass Health Service Center at 877-KIDS-NOW.

Special efforts should also be made to reach children in groups known to be at increased risk for developing dental disease, such as developmentally disabled children and those with special health care needs. (See Exhibit 15-1 for information about oral conditions that can occur in children with special needs.)

Oral Health Education

Oral diseases can be largely eliminated through oral health education and promotion activities, along with primary and secondary prevention initiatives. Oral hygiene instruction, information about fluoride in drinking water and school fluoride mouth-rinse programs, the use of fluoride toothpastes, dental sealants, and dietary and nutrition recommendations should all be included in dental disease education programs. The dangers of tobacco use, risks involved in practices such as oral piercing, and ways to prevent injury (e.g., use of mouth guards during sports) should also be stressed. Bulimia nervosa, an eating disorder experienced by some young people today, can also have a destructive influence on the oral health of those who suffer from it.

The Massachusetts Comprehensive Health Curriculum Framework, created in 1999 by the Massachusetts Department of Education (DOE), suggests the following Health Maintenance learning standards related to oral health within the study of Disease Prevention and Control:

- **PreK–5:** Identify tooth functions, causes of tooth health and decay, and proper dental health skills (such as choosing healthy snacks, brushing, and flossing).
- **Grades 6–8:** List the factors contributing to tooth decay and diseases of the mouth, and then list preventive measures.

The American Dental Association (ADA) recommends several practices for good oral hygiene:

- **Brush** teeth twice a day with an ADA-accepted fluoride toothpaste.
- **Clean** between teeth daily with floss or an interdental cleaner. Decay-causing bacteria linger between teeth where toothbrush bristles cannot reach. Flossing removes plaque and food particles from between teeth and under the gum line.
- **Eat** a balanced diet, and limit between-meal snacks.
- **Visit** a dentist regularly for professional cleanings and oral exams.

Replace toothbrushes every three or four months, or sooner if the bristles become frayed. A worn toothbrush will not do a good job. Children's toothbrushes often need replacing more frequently than adults' because they can wear out sooner.

The following are recommended methods for brushing and flossing, used with permission from Aetna InteliHealth and Simple Steps to Better Dental Health, a comprehensive dental-information website developed and owned by Aetna (http://www.simplestepsdental.com).

Brushing

- Place the toothbrush alongside teeth with bristles at a 45-degree angle to the gum line.
- Gently move the brush in a small circular motion cleaning one tooth at time. To ensure no teeth are missed, use a system — for example, starting with the bottom back tooth, moving toward the front, and repeating on the opposite side of the mouth before switching to the top teeth.

- Brush across chewing surfaces, making sure bristles penetrate grooves and crevices. Clean the side of the teeth that face the tongue using the same circular motion, starting in the back and progressing forward. Remember to brush the inside of the top teeth, too.
- Brush the tongue lightly to remove bacteria and keep breath smelling good.

Flossing

- Take about 18 inches of dental floss and wrap ends around middle fingers.
- Using thumbs and index fingers as guides, gently slide the floss between two teeth, using a saw-like motion.
- Once at the gum line, pull both ends of the floss in the same direction to form a C shape against one tooth. Pull the floss tightly and move it up and down against one tooth.
- Pull the floss against the other tooth and repeat the motion.
- Repeat this for all teeth. Be sure to floss both sides of the teeth farthest back in the mouth.

Within the section of the Comprehensive Health Curriculum Framework related to oral health studies, DOE suggests the following activity for teaching PreK–5 students about flossing: “Using a large cardboard model of the mouth with the teeth labeled, students close their eyes and floss with yarn covered with colored chalk. Students open their eyes and see which teeth were and were not missed. Practice until flossing is complete.”

The World Health Organization (WHO), in its report *Oral Health Promotion: An Essential Element of a Health Promoting School* (Kwan & Petersen, 2003), recommends using a variety of learning and teaching strategies for oral health education, including lectures, storytelling, seminars, practical experiments, discussions, games, debates, group work, role plays, research and investigation, computer-aided instruction, and problem-solving exercises. Methods used should be age-appropriate and culturally sensitive and should aim to promote active involvement and reinforcement.

While some methods are more suitable for conveying knowledge, others are designed to promote skills and attitudes. For example, lectures are more efficient in providing knowledge to large numbers of students, but they are less effective in teaching skills or influencing beliefs or attitudes. Discussions, debates, and problem-solving exercises may be more useful in challenging perceptions and myths. Practical sessions, such as laboratory experiments and toothbrushing exercises, are more effective in building skills (Kwan & Petersen, 2003).

A comprehensive oral health education program should also teach students to make healthier food choices by restricting intake of foods and drinks high in sugar, as well as sticky foods that become lodged in the biting surfaces of back teeth. Frequent between-meal snacks should also be avoided, because frequent sugar intake promotes disease progression. The school environment should also reinforce these messages. Sweet snacks, juices, and sports drinks should be limited and not readily available in vending machines or as part of school lunches and breakfast programs. (See Chapter 9 for more information on nutrition.)

A variety of curricula available for use by schools are listed in the Resources section at the end of this chapter. In addition, education about oral and dental health can be integrated into other academic subjects. For example, oral health can be integrated into math lessons by having students:

- count the number of teeth;
- collect oral health statistics for family, community, or country and present the graphed results; and
- chart growth and development, including tooth eruption.

Physical education classes can also present opportunities for oral health education in discussions about sports safety, use of mouth guards, and first aid for mouth injuries (Kwan & Petersen, 2003).

According to the Surgeon General's 2000 oral health report (U.S. Department of Health and Human Services, 2000), daily individual oral hygiene routines, along with healthy lifestyle behaviors, promote oral health and benefit general health and well-being. When these behaviors are learned and adopted early in life and promoted at home and in healthy school environments, children learn the value of such practices and are more likely to retain them throughout life.

Promotion of Oral Health Through Engagement of Families and Communities

Schools can also do much to safeguard students' oral health by educating parents/guardians and communities about its importance; about the types of dental and oral health problems that can occur (see "Specific Oral/Dental Health Issues" section below); and about preventive measures such as community water fluoridation, supplemental fluoride treatments, brushing twice a day with a fluoride toothpaste, routine dental care, proper nutrition, mouth guards, and dental sealants. Topical fluorides (e.g., toothpaste, gels, rinses, varnish) may be used in combination with systemic fluorides (e.g., bottled fluoridated water, dietary fluoride supplements) for an additive benefit, providing more protection for persons at risk of dental decay (e.g., those with orthodontic braces) and those living in areas where optimally fluoridated drinking water is not available.

The current recommendations for prescribing dietary fluoride supplements depend on the age of the child and the concentration of fluoride already in the drinking water. The American Dental Association recommends prescribing fluoride vitamin supplements for children between the age of 6 months and 16 years living in nonfluoridated communities.

Parents as well as students should be educated about the importance of regular dental visits, toothbrushing and flossing, and restricting intake of sugar and refined carbohydrates, and about the dangers to oral health posed by tobacco use, sports participation without mouth guards, and oral piercing.

SPECIFIC ORAL HEALTH ISSUES

The most common dental problems children experience are dental caries (cavities), malocclusion, and tooth injury. Oral cancer is rare in children. Most of these oral problems are highly preventable. Early diagnosis and prompt treatment can eliminate pain, infection, and progressive oral diseases. (See Exhibit 15-1 for additional information on oral health conditions associated with special-needs children.)

Dental Caries (Cavities)

Dental caries, or tooth decay, is a chronic bacterial infection that destroys tooth structure. A soft, sticky, colorless film, or *plaque,* of harmful germs collects on teeth and combines with sugars in the mouth to form acids, which dissolve tooth enamel (outer layer of a tooth) and initiate the process of tooth decay. Decay in children usually begins in the pits and grooves of the teeth, where most plaque accumulates. If not treated, it dissolves the enamel and works into the dentin (the main, calcareous part of a tooth that surrounds the pulp chamber). When both enamel and dentin are destroyed, the pulp (the innermost portion of the tooth, which consists of connective tissue, nerves, and blood vessels) may become involved, and an abscess can occur.

Risk Assessment: Early risk assessment by a dental professional or other trained health care provider is recommended by the American Dental Association (ADA), American Academy of Pediatrics (AAP), and American Academy of Pediatric Dentistry (AAPD). Other school health services may play a key role in identifying children at risk and making early referrals.

Prevention: The two evidence-based strategies for cavity prevention include use of fluorides and application of dental sealants. Children at risk should have access to these important preventive measures.

Periodontal Disease

Periodontal disease is an inflammation of the soft tissues and bone that surround and support the teeth. The major cause is an accumulation of bacterial plaque at the gum line. Although periodontal disease is most common among adults, it can occur at any age. Gingivitis — red, swollen, and irritated gum tissues — is common among school-age children and occurs often among teens because of poor oral hygiene practices. Nationally, 60% of adolescents at age 15 have gum infections. Other contributors to the development of periodontal disease include tobacco use, poorly aligned teeth, clenching or grinding the teeth, some systemic diseases, and improperly fitting fillings or crowns.

Prevention: Thorough daily plaque removal through brushing and flossing helps prevent periodontal disease. Most cases of gingivitis (the beginning stage of periodontal disease) are reversible with adequate plaque control. Oral hygiene education is an important component in the prevention of periodontal disease.

Malocclusion

Malocclusion, also called crooked teeth or improper bite, is an irregularity in the teeth or jaw position that prevents the upper and lower teeth from biting together properly. It may be caused by hereditary factors or environmental factors. Hereditary factors include large tooth size, small jaw, and incorrect jaw alignment. Malocclusion occurs frequently in people with developmental disabilities. Environmental factors, which are generally preventable, include premature loss of primary teeth, early loss of six-year molars, thumb and finger sucking, incorrect swallowing, and fingernail biting.

Crooked teeth and improper bites affect not only dental health but also general health, food choice, speech, and personal appearance. Crooked teeth are harder to brush and are more susceptible to tooth decay, gum disease, and temporomandibular joint disorders (TMJ), which may also have a negative psychological impact on the child.

Prevention: Parents, children, and teachers should be educated about the harmful effects of nail biting, prolonged sucking of thumbs or fingers, and other habits such as pencil chewing. Although common for the first several years of life, thumbsucking can cause problems if continued beyond age 5, because it can affect the position of incoming permanent teeth and the shape of the jaw, pushing the teeth out and narrowing the dental arches.

Oral Cancer

The most frequent symptom of oral cancer is a sore or irritation (white or red patch) in the mouth that persists over a period of time and does not respond to therapeutic treatment. It may be present on the lips, cheeks, gums, tongue, throat, or palates.

Tobacco (smoking and smokeless) and alcohol use are the major risk factors for oral and pharyngeal cancers. Of increasing concern to health professionals is the use of smokeless tobacco among youth. It is estimated that tobacco use plays a major role in 75% of mouth and pharyngeal cancer. Increased consumption increases risk. Overall, fewer than half of patients with oral cancer are cured. Treatment can cause pain and suffering; loss of speech, hearing, and chewing functions; disfigurement of the head and neck; and death.

> ***Prevention:*** Promote avoidance of tobacco products (smoking and smokeless). Routine screening aids in early detection, which is important for therapeutic intervention.

Negative Health Impacts of Oral Piercings

Because the mouth contains millions of bacteria, infection is a common complication of oral piercing. Common symptoms after oral piercing include pain, swelling, infection, increased flow of saliva, and injuries to gum tissue. In some cases, chipped or cracked teeth, blood poisoning, or blood clots can occur. Swelling of the tongue is a common side effect that in extreme cases can actually close off the airway and prevent breathing. Oral piercing has also been identified by the National Institutes of Health as a possible factor in transmission of hepatitis B, C, D, and G.

> ***Prevention:*** Educate teens about the dangers of oral piercing. Teens who are informed about the hazards of oral piercing are more likely to avoid it. (See Exhibit 15-2, “Oral Piercing and Health,” for an information sheet from the ADA’s Division of Communications. This sheet may be copied and distributed to students.)

Traumatic Oral Injuries

The most common oral injuries are fractured and chipped teeth, broken jaw, severed lips, and lacerated gums. These traumas occur most often at athletic competitions and recreational events and are most common among adolescents. Auto accidents are another major cause of oral injuries. Children also may receive trauma to the head, face, or mouth if they are abused or if they accidentally fall, trip, or are pushed against a hard object such as a water fountain.

> ***Prevention:*** Promote use of mouth guards, helmets, and facemasks during sports and recreation. According to the Massachusetts Dental Society (MDS), athletes are 60 times more likely to suffer damage to the mouth when not wearing a protective mouth guard**.**
>
> There are three types of mouth guards: the stock mouth guard, the boil-and-bite mouth guard, and the custom-made mouth guard. Storebought stock mouth guards and storebought boil-and-bite mouth guards offer some protection at a low cost. However, for maximum protection, MDS recommends custom-made mouth guards, constructed by a dentist from an impression of the athlete’s teeth.
>
> To encourage and promote mouth guard use, MDS has developed a new mouth guard program called Grin and Wear It, in which member dentists provide school-age children with custom-made mouth guards at a discounted price. Information about participating dentists is available by calling MDS at 800-342-8747 or using the search function provided on the MDS website (http://www.massdental.org) in the section devoted to the Grin and Wear It program.
>
> Use of seatbelts in autos as well as proper adult supervision on playgrounds, on stairs, and at drinking fountains also helps prevent traumatic mouth injuries. Early orthodontic evaluation is recommended, since children with protruding anterior teeth may be more prone to trauma.

FIRST AID FOR DENTAL PROBLEMS AND EMERGENCIES

The following information is designed to assist school nurses and other personnel in treating minor dental emergencies. Although the first aid procedures should provide temporary relief, they cannot always solve the dental problem. Should a dental emergency occur, those providing care should:

- notify the parent/guardian immediately of the existing emergency;
- consult with a dentist as soon as possible; and
- obtain a thorough history of the injury, including how it occurred, why it occurred, and what the symptoms are.

First Aid Kit

A dental first aid kit kept in the school health office should contain the following (note that administering medications requires a licensed provider's order):

Basic Supplies:

- cotton and cotton swabs
- sterile gauze pads (square 2 x 2)
- tea bags
- dental floss
- toothbrushes
- sterile tweezers
- ice pack or wet frozen washcloth
- paraffin, candle wax
- Hank's Balanced Salt Solution (Save-a-Tooth)

Medications:

- salt
- hydrogen peroxide
- acetaminophen
- oil of cloves
- Orabase with benzocaine

First Aid Procedures

Toothache

Ask the parent/guardian to call a dentist at once, because a toothache may be a forewarning of an abscessed tooth. Rinse the mouth with warm water to clean out any debris. If swelling is present, apply a cold compress to the outside of the cheek. If fever is present, an aspirin substitute may be given to relieve pain, provided medical order and parental consent are obtained.

Broken tooth

Tell the parent/guardian the child should see a dentist immediately. If a broken tooth is not cared for, the tooth can be permanently damaged and may have to be removed. If the broken tooth has a sharp edge, cover it with paraffin (wax) to prevent tissue laceration.

Bleeding gums

This may be a result of gum disease, poor oral hygiene, trauma to the mouth, or vitamin deficiency. Rinse red, sore, or swollen gums with either warm saltwater (½ teaspoon salt in 8 ounces of warm water) or a

diluted 3% hydrogen peroxide solution (equal amounts water and peroxide). If bleeding is due to trauma, apply direct pressure using a 2 x 2 gauze square. Apply cold compresses to the outside of the cheek to reduce swelling. If the problem is systemic or does not improve with good oral hygiene, tell the parent/guardian to consult a dentist.

Knocked-out tooth

Contact the parent/guardian and consult a dentist. *Save the tooth.* Rush the child and tooth to a dentist immediately (within 30 minutes, if possible). Knocked-out (avulsed) teeth can often be replanted under favorable conditions. If the tooth can be replanted within 30 minutes after the accident, there is a greater than 90% chance the tooth will be retained for life. Rinse the tooth gently but *do not wipe or scrub it,* because important cells that allow the root to be reattached will be lost. Try to insert it back into the tooth socket. If this procedure is too painful, place the tooth in a transport liquid.

According to the American Association of Endodontics, Hank's Balanced Salt Solution (also sold under the trade name Save-a-Tooth) is the ideal environment for an avulsed tooth and should be part of the first aid kit at schools and part of the sports medicine medical kit of athletic trainers and coaches available at all sporting events. If this solution is not available, however, use a glass of milk or water. According to the National Youth Sports Safety Foundation, victims of tooth avulsions who do not have teeth properly preserved or replanted will face lifetime dental costs estimated from $10,000 to $15,000 per tooth, the inconvenience of hours spent in the dental chair, and possibly other dental problems. If the child's gums are bleeding also, see the previous item for treatment.

Fever blister, cold sore, and canker sore

Some cold sores are viral infections and may be contagious. Proper infection control should be maintained when caring for a child with a fever blister or cold sore. Apply Orabase with benzocaine (in moderate amounts) for temporary relief of canker sores. Acetaminophen may be given systemically for pain or fever. (See Chapter 6 for regulations governing the administration of medications in schools.) Never place the acetaminophen tablet on the sore, as this will cause chemical burn. Have the student avoid "kissing" contact with others, sun or wind exposure, and spicy or acidic foods. Recommend that the parent/guardian consult with a dentist if pain or fever persists.

Trauma to face and head

Stop any bleeding, control for shock if necessary, contact the parent/guardian, and arrange for the child to be taken immediately to an oral surgeon or hospital emergency room. Obtain a detailed history of the accident, including determining whether the child lost consciousness and whether the child is experiencing any pain (if so, its location). A child with nausea or dizziness should be seen by a neurologist. At the hospital, the child should be seen by an oral-maxillofacial, orthopedic, or plastic surgeon, if available.

Lacerated lip/tongue Apply direct pressure to the bleeding area with a sterile gauze square for 15 to 30 minutes. If swelling is present in a lip injury, apply a cold compress. Check for broken, fractured, or lost teeth. If the bleeding does not stop readily or the injury is severe, contact the parent/guardian to take the child to a physician, oral surgeon, or hospital emergency room. Vigorous bleeding may be expected initially.

SCREENING/ASSESSMENT

Although Massachusetts does not require dental examination, school-based dental screening, conducted at set intervals, is recommended for monitoring schoolchildren's oral health and identifying and referring children with problems. (See Chapter 5 for more detailed information.) Dental screening also provides an excellent opportunity to educate schoolchildren about the importance of oral health.

The Basic Screening Survey (BSS) is the methodology recommended by DPH's Office of Oral Health (OOH) to screen schoolchildren for dental disease and access to preventive dental sealants. Developed by the Association of State and Territorial Dental Directors (ASTDD) in collaboration with the Ohio Department of Health and the Centers for Disease Control and Prevention, the BSS tool utilizes a direct-observation dental screening methodology to assess oral health and access to preventive dental sealants. The examiner records presence of untreated cavities and urgency of need for treatment for all age groups. In addition, for preschool and school-age children, caries experience (treated and untreated decay) is also recorded. School-age children are also examined for presence of sealants on permanent molars.

A parental questionnaire is recommended to assess access to dental treatment services. All children participating in a dental screening *should have parental consent prior to being screened.*

When dental providers are not available, school nurses and other health personnel may be trained to conduct a Basic Screening Survey. Both the survey and planning/training materials are available at nominal cost and may be ordered from the ASTDD website: http://www.astdd.org/index.php?template=surveybss.html.

For more information on the Basic Screening Survey, see Chapter 5. School health personnel may also log on to the ASTDD website at http://www.astdd.org. Technical assistance is available to all school health programs by contacting DPH's Office of Oral Health at 617-624-6074.

SUMMARY

Oral health is critical to general physical health and academic achievement. Schools can play a significant role in maintaining and improving students' oral health through education; screening and referral; injury prevention; first aid preparedness; and a healthy school environment that is tobacco-free and does not offer unhealthy food, snacks, or beverages. For maximum effectiveness, the school must also collaborate with parents, local oral health providers, and communitywide initiatives.

RESOURCES: CURRICULA AND TEACHING MATERIALS

Bright Smiles, Bright Futures
Colgate-Palmolive
Website: http://www.colgatebsbf.com
Web-based oral health instructional materials and activities for grades K–3. Winner of a 2002 Distinguished Achievement Award from the Association of Educational Publishers.

Cleaning Your Teeth and Gums: Frequently Asked Questions
American Dental Association
Website: http://www.ada.org/public/topics/cleaning_faq.asp#2
The ADA supports education and prevention campaigns for the reduction and prevention of oral diseases. This link provides information on the proper technique for adult toothbrushing and a frequently asked questions section.

Dental Health Lesson Plans
Braun Oral-B
Website: http://www.oralb.com/learningcenter/teaching
These lesson plans are designed to help primary school teachers teach the importance of good dental health care by integrating the information into standards-based science, health, math, and language arts curricula.

Healthy Teeth
Canadian Dental Association, Nova Scotia Dental Association, and Halifax County Dental Society
Website: http://www.healthyteeth.org
Healthy Teeth is an oral education database built upon the science of oral health and designed for elementary grades 3–6. It features animated graphics, easy-to-understand text, simple classroom experiments, and much more. The Healthy Teeth site will be updated with new features and sections over time.

Just for Kids
Massachusetts Dental Society
Website: http://www.massdental.org/kids/
The Massachusetts Dental Society, through its website, supports education and prevention campaigns for the reduction and prevention of oral diseases. This link, established for children, provides information on a variety of oral health topics in a simple, easily navigated format.

KidsHealth
The Nemours Foundation
Website: http://www.kidshealth.org
The KidsHealth website offers helpful articles for kids, teens, and parents on dental hygiene and other oral health topics.

Oral Health Educational Tools & Resources
Healthy Schools! Healthy Kids Oral Health Initiative
Website: http://www.healthri.org/disease/primarycare/oralhealth/tools_resources.pdf
This resource guide from the Healthy Schools! Healthy Kids Oral Health Initiative (a joint project of the Rhode Island Departments of Health and Education) contains information about a variety of oral health education materials.

Open Wide and Trek Inside
National Institutes of Health (NIH) and
National Institute of Dental and Craniofacial Research (NIDCR)
Website: http://science.education.nih.gov/supplements/nih2/oral-health/default.htm
A curriculum supplement for grades 1 and 2, *Open Wide and Trek Inside* focuses on the science of the oral environment and major scientific concepts relating to oral health. The program features stories and games that teach about the structures and functions of the mouth, hands-on experiments to investigate the process of tooth

decay, playacting and stories about bacteria's role in decay, and interactive games and stories to identify healthy behaviors. All content is available in a Web version. A print version with multimedia activities may also be downloaded or ordered (one copy only) from the site.

Oral Health and Nutrition
International Food Information Council Foundation
Website: http://www.fluoridefacts.org/resources/pdfs/nutrition%20and%20Oral%20Health1.pdf
This link provides a brief summary of the relationship between good nutrition and maintaining sound, healthy teeth. Tips for good food choices to reduce the risk of dental disease are included.

Proper Brushing
American Dental Hygienists' Association
Website: http://www.adha.org/oralhealth/brushing.htm
The American Dental Hygienists' Association supports education and prevention campaigns for the reduction and prevention of oral diseases. This link provides information on proper toothbrushing technique.

Proper Flossing
American Dental Hygienists' Association
Website: http://www.adha.org/oralhealth/flossing.htm
The American Dental Hygienists' Association supports education and prevention campaigns for the reduction and prevention of oral diseases. This link provides information on the proper technique for dental flossing.

Tattletooth II: A New Generation
Texas Department of Health, Oral Health Services
PHR1
1109 Kemper Street
Lubbock, TX 79403
Phone: 806-767-0423
Fax: 806-767-0442
Consisting of five core lessons and two enrichment lessons for PreK to grade 6, *Tattletooth II: A New Generation* is a multicultural program designed by teachers, dental professionals, and the Texas Department of Health to help school-age children understand what causes oral disease and develop effective methods for its prevention. Lessons correlate with Texas health and science curricula.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS

Massachusetts Coalition for Oral Health (MCOH)
465 Medford Street
Boston, MA 02129
Website: http://www.fluoridefacts.org
MCOH is dedicated to improving the oral health of Massachusetts residents through effective, community-based oral health education and preventive measures. Through a collaborative effort with other health agencies and oral health prevention programs in the state, MCOH is educating parents, teachers, school nurses, and others on the availability of low-cost and free dental insurance for many Massachusetts children. For more information or help with determining children's eligibility for programs, call 877-KIDS-NOW. M.G.L. c.111, s.8C, the 1968 legislation enacted to support local boards of health in their promotion of community water fluoridation for the prevention of dental disease, may be viewed at
http://www.fluoridefacts.org/resources/pdfs/MGL_Chapter_111.pdf.

Massachusetts Department of Public Health
Office of Oral Health (OOH)
250 Washington Street, 5th Floor
Boston, MA 02108-4619

Phone: 617-624-6074
Website: http://www.mass.gov/dph/fch/ooh.htm
OOH operates a fluoride mouth rinse program in 190 schools and a clearinghouse of dental health education materials, training materials, and parental information material on dental sealants, as well as training and professional education for community groups, dental and non-dental health professionals, teachers, health educators, school administrators, and boards of health.

Massachusetts Dental Society
2 Willow Street, Suite 200
Southborough, MA 01745
Phone: 800-342-8747 (in-state) or 508-480-9797
Fax: 508-480-0002
Website: http://www.massdental.org

Massachusetts Interscholastic Athletic Association (MIAA)
33 Forge Parkway
Franklin, MA 02038
Phone: 508-541-7997
Fax: 508-541-9888
E-mail: miaa@miaa.net
Website: http://www.miaa.net
The Massachusetts Interscholastic Athletic Association is an organization of 360 high schools that sponsor athletic activities in 33 sports. Rules governing participation in sports, including tooth protector and mouth guard regulations, may be found in MIAA's Blue Book, which is directly accessible at http://www.miaa.net/bluebook.htm. Rules updates are published regularly on the website.

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS

American Academy of Pediatric Dentistry
211 East Chicago Avenue, #700
Chicago, IL 60611-2663
Phone: 312-337-2169
Fax: 312-337-6329
Website: http://www.aapd.org

American Academy of Periodontology
737 North Michigan Avenue, Suite 800
Chicago, IL 60611-2690
Phone: 312-787-5518
Fax: 312-787-3670
Website: http://www.perio.org/consumer/children.htm
The American Academy of Periodontology is a national membership association of dental professionals specializing in the prevention, diagnosis, and treatment of diseases affecting the gums and supporting structures of the teeth. The site address shown above links directly to a special section on children's oral health.

American Association of Orthodontists
401 North Lindbergh Boulevard
St. Louis, MO 63141-7816
Phone: 800-STRAIGHT or 314-993-1700
Fax: 314-997-1745
E-mail: info@aaortho.org
Website: http://www.braces.org

This site offers answers to frequently asked questions about orthodontics for growing children, a glossary of terms, a short educational guide, *Problems to Watch for in Growing Children* (available in pdf format), and more. **Particularly useful:** "Handling Orthodontic Emergencies at School," a detailed fact sheet for school nurses.

American Association of Public Health Dentistry
National Office
P.O. Box 7536
Springfield, IL 62791-7536
Phone: 217-391-0218
Fax: 217-793-0041
E-mail: natoff@aaphd.org
Website: http://www.aaphd.org

American Dental Association (ADA)
211 East Chicago Avenue
Chicago, IL 60611-2678
Phone: 312-440-2500
Website: http://www.ada.org
The "Your Oral Health" section of the ADA website offers oral health news and information and interactive learning tools for students, teachers, and consumers. The ADA also provides position statements for consumers and professionals regarding topics of special interest, such as amalgam, antibiotic prophylaxis, fluorides and sealants, infection control (including HIV), piercing and tongue splitting, tobacco and nicotine, and tooth whitening. Position statements may be found at http://www.ada.org/prof/resources/positions/statements/index.asp.

American Dental Hygienists' Association (ADHA)
444 North Michigan Avenue, Suite 3400
Chicago, IL 60611
Phone: 312-440-8900
Website: http://www.adha.org
ADHA seeks to improve the public's total health by advancing the art and science of dental hygiene, ensuring access to quality oral health care, and increasing awareness of the cost-effective benefits of prevention.

Association of State and Territorial Dental Directors (ASTDD)
322 Cannondale Road
Jefferson City, MO 65109
Phone: 573-636-0453
Fax: 573-636-0454
E-mail: astdd@earthlink.net
Website: http://www.astdd.org
ASTDD is involved in public health programs and awareness concerning oral health. It assists in formulating and implementing dental health policy and publishes position statements for professionals. ASTDD developed the Basic Screening Survey (BSS) dental screening methodology discussed in this chapter and collaborates with the CDC's Division of Oral Health on the National Oral Health Surveillance System (NOHSS). (NOHSS is described below, under CDC.) The ASTDD website contains information about best practices and state activities as well as links to publications and newsletters.

Bright Futures Project
Georgetown University
P.O. Box 571272
Washington, DC 20057-1272
Phone: 202-784-9556
Fax: 202-784-9777
E-mail: Brightfutures@ncemch.org
Website: http://www.brightfutures.org

The Bright Futures Project was initiated and is guided by the Health Resources and Services Administration's Maternal and Child Health Bureau, which maintains the website in conjunction with Georgetown University. In 1994, the Bright Futures Project developed comprehensive health supervision guidelines with the collaboration of interdisciplinary panels of experts in infant, child, and adolescent health. These guidelines, updated and revised in 2000, are consistent with those of the American Academy of Pediatrics (AAP) and the American Academy of Pediatric Dentistry (AAPD) and have the support of more than 70 key national organizations.

Publication: *Bright Futures in Practice: Oral Health (1996)* — Designed for health professionals and educators, this guide addresses the oral health needs of children and adolescents from birth to age 21 by presenting specific guidelines on oral health promotion and disease prevention and other preventive strategies and tools. Hard copies may be ordered at the website. A pdf version is also available for download at http://www.brightfutures.org/oralhealth/index.html.

Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion
Division of Oral Health
4770 Buford Highway NE, MS F-10
Atlanta, GA 30341-3717
Phone: 888-CDC-2306 or 770-488-6054
Website: http://www.cdc.gov/OralHealth

- **Children and Oral Health**
  Website: http://www.cdc.gov/OralHealth/topics/child.htm
  This link contains resources on oral health topics, a resource library, guidelines and recommendations for clinicians and public health professionals, access to databases, and state-by-state reports.
- **National Oral Health Surveillance System (NOHSS)**
  Website: http://www.cdc.gov/nohss/
  A collaborative effort between CDC's Division of Oral Health and the Association of State and Territorial Dental Directors (ASTDD), NOHSS is designed to help public health programs monitor the burden of oral disease, usage of the oral health care delivery system, and the status of community water fluoridation on both state and national levels. NOHSS includes indicators of oral health, information on state dental programs, and links to other important sources of oral health information.

The Center for Health and Health Care in Schools
2121 K Street NW, Suite 250
Washington, DC 20037
Phone: 202-466-3396
Fax: 202-466-3467
Website: http://www.healthinschools.org/dentalhealth.asp
This site offers a bibliography on dental health services in schools, as well as resources and links.

Children's Dental Health Project
1990 M Street NW, Suite 200
Washington, DC 20036
Phone: 202-833-8288
Fax: 202-318-0667
Website: http://www.cdhp.org
Children's Dental Health Project is dedicated to helping policy makers, health care providers, advocates, and parents improve children's oral health and increase their access to dental care. CDHP directs a multiyear project for the American Academy of Pediatric Dentistry on the interface between medical and dental care for disadvantaged preschool children. It manages a dental coalition of over 20 professional groups committed to improving teens' health and welfare. It also operates a biweekly "clipping service" that collects and widely disseminates press reports on children's oral health and dental care.

Community Preventive Services
Website: http://www.thecommunityguide.org/oral/
This link provides consumers with information on community health services, including oral health.

Healthy People 2010
Website: http://www.healthypeople.gov/
Healthy People 2010 is a set of national health objectives established by experts and health professionals nationwide to help Americans achieve better overall health and well-being by the year 2010. This website provides a list of the Healthy People 2010 National Health Objectives.

Hispanic Dental Association (HDA)
1224 Centre West, Suite 400B
Springfield, IL 62704
Phone: 800-852-7921 or 217-793-0035
Fax: 217-793-0041
E-mail: HispanicDental@hdassoc.org
Website: http://www.hdassoc.org
Contact this office for information regarding Massachusetts HDA chapters.

National Institute of Dental and Craniofacial Research (NIDCR)
National Institutes of Health
Building 45, Room 4AS-19
45 Center Drive MSC 6400
Bethesda, MD 20892-6400
Phone: 301-496-4261
E-mail: nidcrinfo@mail.nih.gov
Website: http://www.nidcr.nih.gov
Part of the National Institutes of Health, NIDCR conducts research in oral diseases and craniofacial development and epidemiology. This site contains information on all of NIDCR's research activities and current relevant news and publications. The online *Practical Health Care Series* explains the oral health care problems of individuals with developmental disabilities and chronic illnesses and discusses strategies for care.

National Maternal and Child Oral Health Resource Center
Georgetown University
P.O. Box 571272
Washington, DC 20057-1272
Phone: 202-784-9771
Fax: 202-784-9777
E-mail: info@mchoralhealth.org
Website: http://www.mchoralhealth.org/
The National Maternal and Child Oral Health Resource Center (OHRC), funded by the Maternal and Child Health Bureau (MCHB), supports health professionals, program administrators, educators, policy makers, and others with the goal of improving oral health services for infants, children, adolescents, and their families. It collaborates with federal, state, and local agencies; national and state organizations and associations; and foundations, to gather, develop, and share information and materials. OHRC also collects and makes available information about oral health programs and initiatives, standards, guidelines, curricula, and professional and consumer education materials. Available materials include:

- *Early Childhood Caries Resource Guide* — A guide containing journal articles and materials such as reference books, reports, surveys, manuals, guidelines, standards, and curricula, as well as descriptions of agencies and organizations that may serve as resources.
- *A Health Professional's Guide to Pediatric Oral Health Management* — Seven self-contained online modules designed to assist health professionals in managing the oral health of infants and young children. The modules provide information about prevention of oral diseases in at-risk groups, as well as information about screening, referral, and anticipatory guidance for parents.
- *Open Wide: Oral Health Training for Health Professionals* — Four self-study modules designed to help health and early-childhood professionals working in community settings to promote oral health.

The modules offer information about tooth decay, risk factors, and prevention, and they highlight anticipatory guidance to share with parents.

- *Open Wide: Oral Health Training for Non-Dental Health and Human Services Providers* — A curriculum developed by the Connecticut Department of Public Health, Oral Health Unit, for the oral health training of physicians, nurses, nutritionists, child care workers, and others.
- *Preventing Tooth Decay and Saving Teeth with Dental Sealants* — A fact sheet on the use of dental sealants in preventing tooth decay and in arresting the progression of decay. The document discusses strategies for improving awareness of dental sealants, costs and benefits related to the application of dental sealants, access to care issues, and school- and community-based dental sealant programs.

National Oral Health Information Clearinghouse (NOHIC)
1 NOHIC Way
Bethesda, MD 20892-3500
Phone: 301-402-7364
Fax: 301-907-8830
E-mail: nohic@nidcr.nih.gov
Website: http://www.nohic.nidcr.nih.gov
NOHIC is a service of the National Institute of Dental and Craniofacial Research, one of the National Institutes of Health. It directs patients and professionals to sources of information and materials on topics relating to special care in oral health. NOHIC maintains a database of descriptions and ordering information for publications and educational materials, as well as producing and distributing patient and professional education materials.

National Youth Sports Safety Foundation (NYSSF)
1 Beacon Street, Suite 3333
Boston, MA 02108
Phone: 617-367-6677
Fax: 617-722-9999
E-mail: NYSSF@aol.com
Website: http://www.nyssf.org
NYSSF is a national nonprofit educational organization dedicated to reducing the number and severity of injuries youth sustain in sports and fitness activities.

Oral Health America
410 North Michigan Avenue, Suite 352
Chicago, IL 60611
Phone: 312-836-9900
Fax: 312-836-9986
Website: http://www.oralhealthamerica.org
Oral Health America is the only national, independent nonprofit organization dedicated to improving oral health for all Americans. Its educational efforts include:

- **National Fluoridation Center**
  Website: http://www.fluoridationcenter.org/
  National Fluoridation Center is an online resource providing data and information on the positive impact of community water fluoridation.
- **National Spit Tobacco Education Program**
  Website: http://www.nstep.org
  The National Spit Tobacco Education Program's mission is to prevent people, especially young people, from starting to use spit tobacco, and to help all users quit. NSTEP is funded in part by the Robert Wood Johnson Foundation.
- **Smiles Across America (SAA)**
  Smiles Across America is a campaign to link local governments, businesses, and funders with care providers and schools to help fight untreated oral disease.

Special Care Dentistry (SCD)
401 North Michigan Avenue
Chicago, IL 60611
Phone: 312-527-6764
Fax: 312-673-6663
E-mail: SCD@SCDonline.org
Website: http://www.scdonline.org
SCD, a national organization dedicated to improving oral health for people with special needs, publishes the bimonthly journal *Special Care in Dentistry* and the bimonthly newsletter *Interface.*

Special Olympics Special Smiles
1133 19th Street NW
Washington, DC 20036
Phone: 202-628-3630
Fax: 202-824-0200
Website: http://www.specialolympics.org
Special Olympics Special Smiles is an oral health initiative designed to improve access to dental care for people with special needs and to raise the public's and the dental community's awareness of the oral health problems faced by many of those with special needs. This initiative works with Special Olympics, an international program of year-round sports training and athletic competition for children and adults with mental retardation.
Publication: *A Guide to Good Oral Health for Persons With Special Needs.*

Sports Dentistry Online
Website: http://www.sportsdentistry.com
Research, recommendations, resources, and links related to prevention and treatment of sports injuries.

Surgeon General's Conference on Children and Oral Health
Website: http://www.nidcr.nih.gov/sgr/children/abstracts.htm
Downloadable abstracts on a variety of topics related to children and oral health, including school health, children with special health care needs, and hard-to-reach populations.

REFERENCES

American Academy of Pediatric Dentistry, American Board of Pediatric Dentistry, College of Diplomats of the American Board of Pediatric Dentistry. (2002). Policy on oral habits. *Pediatric Dentistry, 24*(7), 28.

American Academy of Pediatrics, Section of Pediatric Dentistry. (2003). Oral health risk assessment timing and establishment of the dental home. *Pediatrics, 3*(5), 1113–1116.

Beltrán-Aguilar, E. D., Goldstein, J. W. & Lockwood, S. A. (2000). Fluoride varnishes: A review of their clinical mechanism, efficacy, and safety. *Journal of the American Dental Association, 131,* 589–596.

Casamassimo, P. & Holt, K. (Eds.). (2004). *Bright futures in practice: Oral health — pocket guide.* Washington, DC: National Maternal and Child Oral Health Resource Center, Georgetown University.

Centers for Disease Control and Prevention. (2001). Impact of targeted, school-based dental sealant programs in reducing racial and economic disparities in sealant prevalence among schoolchildren: Ohio, 1998–1999. *Morbidity and Mortality Weekly Report, 45*(34), 736–738.

Centers for Disease Control and Prevention. (2001). Recommendations for using fluoride to prevent and control dental caries in the United States. *MMWR Recommendations Report, 50*(RR-14), 1–42. Retrieved in 2005 from http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5014a1.htm.

Centers for Disease Control and Prevention. (2004). *Surgeon General's Statement on Community Water Fluoridation, 2004*. Retrieved in 2006 from http://www.cdc.gov/fluoridation/fact_sheets/sg04.htm.

Douglass, A. B. & Douglass, J. M. (2003). Common dental emergencies. *American Family Physician, 67*(3), 511–516.

Ferebee, A. (2002, April). *Expanding dental and mental health services through school-based health centers.* Presentation to the National Oral Health Conference, Third Joint Annual Meeting of ASTDD & AAPHD, Danvers, MA.

Ferebee, A. (2002, July). *School-based health programs: What is the role for local boards of health?* Presentation to the National Association of Local Boards of Health Annual Conference, New Orleans, LA.

Grantmakers in Health. (2001). *Filling the gap: Strategies for improving oral health.* Washington, DC: Author.

Griffin, S. O., Griffin, P. M., Beltrán-Aguilar, E. D., Malvitz, D. M. & Heiden, K. D. (2004). Estimating prevalence and severity of caries in the mixed dentition: A comparison of two screening protocols. *Journal of Public Health Dentistry, 64*(1), 14–19.

Holt, K., Bertness J. & Siegal, M. (2003). *Preventing tooth decay and saving teeth with dental sealants: Fact sheet (2nd ed.)*. Washington, DC: National Maternal and Child Oral Health Resource Center.

Kwan, S. & Petersen, P. E. (2003). *Oral health promotion: An essential element of a health promoting school.* WHO Information Series on School Health. Geneva: World Health Organization. Retrieved in 2006 in from http://www.who.int/oral_health/media/en/orh_school_doc11.pdf.

Massachusetts Special Legislative Commission on Oral Health. (2000). *The oral health crisis in Massachusetts.* Report of the Special Legislative Commission on Oral Health. Retrieved in 2006 from http://www.fluoridealert.org/mass-2000.pdf.

Mofidi, M., Rozier, R. G. & King, R. S. (2002). Problems with access to dental care for Medicaid-insured children: What caregivers think. *American Journal of Public Health, 92*(1), 53–58.

Mouradian, W. E., Wehr, E. & Crall, J. (2000). Disparities in children's oral health and access to dental care. *Journal of the American Medical Association, 284*(20), 2625–2631.

National Center for Education in Maternal and Child Health. (1999). *Trends in children's oral health.* Arlington, VA: National Center for Education in Maternal and Child Health.

Nowak, A. J. & Casamassimo, P. S. (2002). The dental home: A primary care oral health concept. *Journal of the American Dental Association, 133*(1), 93–98.

Office of Oral Health. Massachusetts Department of Public Health. (2000). *The oral health crisis in Massachusetts.* Report of the Special Legislative Commission on Oral Health. Boston: Department of Public Health.

Office of Oral Health, Massachusetts Department of Public Health. (2004). *2003 Give kids a smile: Oral health survey of third grade children in Massachusetts.* Boston: Department of Public Health.

Romito, L. M. (2003). Introduction to nutrition and oral health. *Dental Clinics of North America, 47*(2), 187–207.

Task Force on Community Preventive Services. (2001, November). Promoting oral health: Interventions for preventing dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries. *Morbidity and Mortality Weekly Report, 50*(RR21), 1–13.

Tetuan, T. (2004). The role of the nurse in oral health. *The Kansas Nurse, 79*(10), 1–2. PMID: 15675660.

Truman, B. I., Gooch, B. F. & Evans, C. A., Jr. (Eds.). (2002). The guide to community preventive services: Interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries. *American Journal of Preventive Medicine, 23* (1 Supp), 18–26.

U.S. Department of Health and Human Services. (2000). *Healthy people 2010, 2nd ed*. (2 vols.). Washington, DC: U.S. Government Printing Office. Retrieved in 2005 from http://www.healthypeople.gov.

U.S. Department of Health and Human Services. (2000). *Oral health in America: A report of the Surgeon General.* Rockville, MD: National Institute of Health, National Institute of Dental and Craniofacial Research, Office of the Surgeon General. Retrieved in 2005 from http://www.surgeongeneral.gov/library/oralhealth/default.htm.

U.S. Department of Health and Human Services. (2001, June). *The face of a child.* Proceedings of Surgeon General's Workshop and Conference on Children and Oral Health. National Institutes of Health, National Institute of Dental and Craniofacial Research, Office of the Surgeon General. Retrieved in 2005 from http://www.nidcr.nih.gov/AboutNIDCR/SurgeonGeneral/Children.htm.

U.S. Department of Health and Human Services. (2003). *National call to action to promote oral health.* Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute of Dental and Craniofacial Research. (NIH Publication No. 03-5303). Retrieved in 2005 from http://www.surgeongeneral.gov/topics/oralhealth/nationalcalltoaction.pdf.

Waldman, H. B. (1995). Immigrant children and pediatric dental practice. *Journal of Dentistry for Children, 62*(4), 288–294. Review. PMID: 7593890.

Waldman, H. B. & Perlman, S. P. (2003). Why dentists shun Medicaid: Impact on children, especially children with special needs. *Journal of Dentistry for Children, 70*(1), 5–9. PMID: 12762600.

Weintraub, J. A. (2003). Fluoride varnish for caries prevention: Comparisons with other preventive agents and recommendations for a community-based protocol. *Special Care in Dentistry, 23*(5), 180–186. Review. PMID: 14965184.

York, J. A. & Holtzman, J. M. (2004). Designing and implementing a school-based dental program for students with developmental disabilities. *Special Care in Dentistry, 24*(6), 308–312. PMID: 15686281.

Yu, S. M., Bellamy, H. A., Schwalberg, R. H. & Drum, M. A. (2001). Factors associated with use of preventive dental and health services among U.S. adolescents. *Journal of Adolescent Health, 29*(6), 395–405. PMID: 11728889.

Zabos, G., Glied, S. A., Tobin, J. N., Amato, E., Turgeon, L., Mootabar, R. N., et al. (2002). Cost-effectiveness analysis of a school-based dental sealant program for low-socioeconomic-status children: A practice-based report. *Journal of Health Care for the Poor and Underserved, 13*(1), 38–48.

Note: Articles with PMID number have been indexed by PubMed for MEDLINE.

EXHIBITS

Exhibit 15-1 Oral Conditions in Children with Special Needs

Exhibit 15-2 Oral Piercing and Health

Exhibit 15-1 Oral Conditions in Children With Special Needs
A Guide for Health Care Providers

ORAL DEVELOPMENT

Tooth eruption may be delayed, accelerated, or inconsistent in children with growth disturbances. Gums may appear red or bluish-purple before erupting teeth break through into the mouth. Eruption depends on genetics, growth of the jaw, muscular action, and other factors. Children with Down syndrome may show delays of up to 2 years.
Offer information about the variability in tooth eruption patterns and refer to an oral health care provider for additional questions.

Malocclusion, a poor fit between the upper and lower teeth, and crowding of teeth occur frequently in people with developmental disabilities. Nearly 25 percent of the more than 80 craniofacial anomalies that can affect oral development are associated with mental retardation. Muscle dysfunction contributes to malocclusion, particularly in people with cerebral palsy. Teeth that are crowded or out of alignment are more difficult to keep clean, contributing to periodontal disease and dental caries.
Refer to an orthodontist or pediatric dentist for evaluation and specialized instruction in daily oral hygiene.

Tooth anomalies are variations in the number, size, and shape of teeth. People with Down syndrome, oral clefts, ectodermal dysplasia, or other conditions may experience congenitally missing, extra, or malformed teeth.
Consult an oral health care provider for dental treatment planning during a child's growing years.

Developmental defects appear as pits, lines, or discoloration in the teeth. Very high fever or certain medications can disturb tooth formation, and defects may result. Many teeth with defects are prone to dental caries, are difficult to keep clean, and may compromise appearance.
Refer to an oral health care provider for evaluation of treatment options and advice on keeping teeth clean.

ORAL TRAUMA

Trauma to face and mouth occurs more frequently in people who have mental retardation, seizures, abnormal protective reflexes, or muscle incoordination. People receiving restorative dental care should be observed closely to prevent chewing on anesthetized areas.
If a tooth is avulsed or broken, take the patient and the tooth to a dentist immediately. Counsel the parent/caregiver on ways to prevent trauma and what to do when it occurs.

Bruxism, the habitual grinding of teeth, is a common occurrence in people with cerebral palsy or severe mental retardation. In extreme cases, bruxism leads to tooth abrasion and flat biting surfaces.
Refer to a dentist for evaluation; behavioral techniques or a bite guard may be recommended.

ORAL INFECTIONS

Viral infections are usually due to the herpes simplex virus. Children rarely get herpetic gingivostomatitis or herpes labialis before 6 months of age. Herpetic gingivostomatitis is most common in young children, but may occur in adolescents and young adults. Viral infections can be painful and are usually accompanied by a fever.
Counsel the parent/caregiver about the infectious nature of the lesions, the need for frequent fluids to prevent dehydration, and methods of symptomatic treatment.

Dental caries, or tooth decay, may be linked to frequent vomiting or gastroesophageal reflux, less than normal amounts of saliva, medications containing sugar, or special diets that require prolonged bottle feeding or snacking. When oral hygiene is poor, the teeth are at increased risk for caries.
Counsel the parent/caregiver on daily oral hygiene to include frequent rinsing with plain water and use of a fluoride-containing toothpaste or mouth rinse. Explain the need for supervising children to avoid swallowing fluoride. Refer to an oral health care provider and/or gastroenterologist for prevention and treatment. Prescribe sugarless medications when available.

Early, severe periodontal (gum) disease can occur in children with impaired immune systems or connective tissue disorders and inadequate oral hygiene. Simple gingivitis results from an accumulation of bacterial plaque and presents as red, swollen gums that bleed easily. Periodontitis is more severe and leads to tooth loss if not treated. Professional cleaning by an oral health care provider, systemic antibiotics, and instructions on home care may be needed to stop the infection.
Explain that the parent/caregiver may need to help with daily toothbrushing and flossing and that frequent appointments with an oral health care provider may be necessary.

GINGIVAL OVERGROWTH

Gingival overgrowth may be a side effect from medications such as calcium channel blockers, phenytoin sodium, and cyclosporine. Poor oral hygiene aggravates the condition and can lead to superimposed infections. Severe overgrowth can impair tooth eruption, chewing, and appearance.
Refer to an oral health care provider for prevention and treatment. A preventive regimen of antimicrobial rinses and frequent appointments may be needed. Consider alternative medications if possible.

Credits: Beverly Isman, RDH, MPH and Renee Nolte Newton, RDH, MPA, California Connections Project (MCJ#06R005), Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services. Reprinted by the National Oral Health Information Clearinghouse, National Institute of Dental and Craniofacial Research.

For additional copies contact:
National Oral Health Information Clearinghouse
1 NOHIC Way
Bethesda, MD 20892-3500
Phone: 301-402-7364
E-mail: nohic@nidcr.nih.gov
Website: http://www.nohic.nidcr.nih.gov

Exhibit 15-2 ORAL PIERCING AND HEALTH
Prepared by the ADA Division of Communications

Not too long ago, teens wanted to avoid the moniker “metal mouth,” but the oral piercing trend seems to have overshadowed that social fear. Now piercing the tongue, lip, or cheeks is a fairly popular form of self-expression. People interested in this trend, however, should be aware that it carries specific health risks.

PROCEDURE-RELATED RISKS

Infection. Infection is a possibility with any opening in skin or oral tissues. Given that the mouth is teeming with bacteria, oral piercing carries a high potential for infection at the site of the piercing. Handling the jewelry once it has been placed also increases the chances of developing an infection.

Prolonged bleeding. Damage to the tongue’s blood vessels can cause serious blood loss.

Swelling and possible nerve damage. Swelling is a common symptom experienced after oral piercing. Unlike an earlobe that is pierced, the tongue is in constant motion, which can slow and complicate the healing process. There have been some reports of swelling subsequent to tongue piercing that has been serious enough to block the airway.

Bloodborne disease transmission. Oral piercing also has been identified by the National Institutes of Health as a possible factor in transmission of hepatitis B, C, D and G. Although no cases of tetanus or tuberculosis transmission have been reported with regard to oral piercing, both have been documented in association with ear piercing.

Endocarditis. In addition, oral piercing carries a potential risk of endocarditis, a serious inflammation of the heart valves or tissues. The wound created during oral piercing provides an opportunity for oral bacteria to enter the bloodstream, where they can travel to the heart. This presents a risk for people who have cardiac abnormalities, on which the bacteria can colonize.

JEWELRY-RELATED COMPLICATIONS

Injury to the gums. Not only can the metal jewelry injure the gums, but also, if it is placed so that it makes constant contact with the gums, it can cause the soft tissues to recede.

Damage to the teeth. Contact with the jewelry can chip or crack teeth. Likewise, teeth that have restorations can be damaged if jewelry strikes them.

Interference with normal oral function. Oral jewelry can stimulate excessive saliva production, can impede the ability to pronounce words clearly, and may cause problems with chewing and swallowing food. Furthermore, metal alloys used in the manufacturing of oral jewelry can potentially sensitize susceptible people, resulting in allergic contact dermatitis.

Interference with oral health evaluation. Jewelry in the mouth can block the transmission of X-rays. Clear radiographs, what you know as “X-rays,” are essential to a complete oral health evaluation. Jewelry can prevent a radiograph from revealing abnormalities like cysts, abscesses, or tumors.

Aspiration. There is always a possibility that the jewelry can come loose. As with any loose object in the mouth, unfastened jewelry becomes a choking hazard. The jewelry also could be ingested, which could result in injury to the digestive tract.

Prepared by the ADA Division of Communications. (January, 2001) Unlike other portions of JADA, this page may be clipped and copied as a handout for patients, without first obtaining reprint permission from ADA Publishing, a division of ADA Business Enterprises Inc.

Chapter 16

REFUGEE AND IMMIGRANT HEALTH CARE

Introduction and Definitions

Common Health Conditions Among Refugee and Immigrant Children

A Multicultural Approach to Health Care

Factors That May Affect Access to Health Services

Family Roles, Acculturation, and Behavioral Issues

Summary

Resources: Massachusetts Agencies and Organizations

Resources: Massachusetts Community Groups and Local Service Agencies

Resources: National Agencies and Organizations

References

About The Information in This Manual

From time to time, the Massachusetts Department of Public Health may update some of the materials. Please check the School Health Manual online to see if there are any recent updates.

Please be certain to check for new laws and regulations that may be in effect after publication of this Manual. You may find the Massachusetts General Laws online at http://www.mass.gov/legis/laws/mgl/ and the Code of Massachusetts Regulations at http://www.lawlib.state.ma.us/cmr.html. These sites are periodically updated, but are not the official version of the Massachusetts General Laws (MGL) or Code of Massachusetts Regulations (CMR). You should always refer to an official edition of the MGL and CMR. Official editions may be found at the Statehouse Bookstore and many public and law libraries.

Chapter 16

REFUGEE AND IMMIGRANT HEALTH CARE

INTRODUCTION AND DEFINITIONS

According to the 2000 U.S. Census, about 1 in 9 Massachusetts residents is foreign born, and about 1 in 5 speaks a language other than English at home. These nonnative populations may experience language problems, be unfamiliar with Western health care, or lack knowledge of specialized services. Refugees and immigrants have separate, distinct legal statuses in the U.S., which may entitle them to different levels of access to public benefits and services such as health insurance. This chapter addresses health problems that may be experienced by refugee and immigrant children and adolescents, as well as issues that may affect access to health care information and services for refugee and immigrant children and adolescents.

The United Nations defines a *refugee* as a person forced to flee his or her country of origin due to persecution or fear of persecution because of race, religion, nationality, membership in a particular social group, or political opinion. Refugees may flee to or be resettled in the United States. Some refugees enter the U.S. with refugee documents, having been awarded refugee status by the U.S. Citizenship and Immigration Services (USCIS), formerly the Immigration and Naturalization Service (INS). Recipients of *asylum* are referred to as "asylees" and are the same as refugees except that they receive this status after entering the U.S.

An *immigrant* is a legal permanent resident who has gained legal status under U.S. immigration law. Although there are many immigration categories, immigration policy priorities are based on family reunification and importation of skills not available among U.S. workers. Immigrants have the opportunity to eventually obtain citizenship.

A *nonimmigrant* is a person who is in the U.S. for a limited period of time. Included in this category are tourists, business travelers, students, researchers, and some workers. The length of time in the U.S. varies greatly and may be extended.

An *undocumented person* is someone who is present in the U.S. illegally, either by entering the U.S. without USCIS inspection or by entering legally as a nonimmigrant, for example on a visitor or student visa, and staying past the visa's expiration date.

Though the term "immigrant" has a specific legal definition under U.S. immigration law, in this chapter the term is used to refer to anyone who lives in the U.S., was not born in the U.S., is not yet a citizen, and is not a refugee.

Demographic information on refugee and immigrant communities is available from various sources. U.S. Census Bureau data for Massachusetts, at the state and county level (available at http://www.census.gov), includes information on race, Latino ethnicity, and U.S. or foreign birth. The Migration Policy Institute has data resources for the U.S. at the national and state level

(http://www.migrationinformation.org). Massachusetts Department of Public Health's (DPH) Refugee and Immigrant Health Program has data on refugees resettled in Massachusetts by country of origin and year of entry (http://www.mass.gov/dph/cdc/rhip/wwwrihp.htm). DPH's Office of Multicultural Health has summarized 2 types of school enrollment data from the Massachusetts Department of Education: FLNE (First Language is Not English) survey data, on children enrolled in Massachusetts public schools from households where English is not the primary language; and LEP (Limited English Proficiency) data, providing information on the subset of these FLNE children who are enrolled in bilingual education and are attempting to master English. This summary report can be found at http://www.mass.gov/dph/omh/2001flne_rport.pdf.

Recent arrivals to the U.S., whether refugees or immigrants, face a period of enormous change and adjustment that can affect their physical and emotional well-being. Most refugees and many immigrants left their countries due to violence, political strife, or poverty. For some immigrant and refugee students, the emotional stress and trauma in their backgrounds, in addition to the unsettling or stressful experience of being in a new country, may manifest as physical symptoms such as headaches, abdominal pain, indigestion, fatigue, or insomnia that have no clearly identifiable physical cause. Traumatized refugees and immigrants may experience psychological disorders; depression, adjustment disorders, and post-traumatic stress disorder are relatively common.

In addition to these psychosocial issues, refugees and immigrants may manifest a wide array of common, and usually treatable, physical health conditions. It is important to note that applicants for legal permanent residence and for refugee status undergo a health screening as part of overseas immigration processing. Applicants with serious health conditions of public health significance, or with physical or mental disorders that may pose a threat to the applicant or others, may be denied admission. Refugees are eligible for health screening upon arrival in the U.S., and asylees are eligible for the same screening upon receiving their grant of asylee status. In Massachusetts, over 90% of new refugee arrivals receive screening through a program administered by DPH's Refugee and Immigrant Health Program.

Health practices and beliefs are affected by variables such as ethnic values, cultural orientation, religious beliefs, and linguistic considerations. Schools and health care providers may have limited knowledge about the cultural backgrounds, social expectations, and work experiences of refugee and immigrant populations, including their beliefs, attitudes, and cultural lifestyles. Awareness of factors that may prevent newcomers from seeking care can help a school intervene on behalf of a refugee or immigrant student. In addition, although school health personnel serving a multiethnic population may not be able to master the intricacies of each ethnic population's specific cultural practices, they should attempt to familiarize themselves with common traditional health practices of their school's ethnic communities and adopt principles of cross-cultural communication around health beliefs and practices.

COMMON HEALTH CONDITIONS AMONG REFUGEE AND IMMIGRANT CHILDREN

Refugee and immigrant youth have many of the same health issues or conditions seen in U.S.-born children and adolescents, albeit with differing prevalence rates. The most common conditions are those related to oral health, growth and nutrition, and infectious diseases.

Among refugee children in Massachusetts, nearly two-thirds have documented oral health abnormalities at the time of their health screening in the U.S. Individuals working with refugee and

immigrant children may see striking rates of dental caries and other infections, excessive plaque and gingivitis due to lack of preventive care, and orthodontic issues related to cultural practices such as ritual tooth extraction or missing teeth pulled as a result of severe caries. As a consequence of such oral health problems, children may have poor growth and poor school performance. Poor school performance may result from inattention (from pain), embarrassment (from caries-related halitosis), or speech and language problems (from poor articulation related to missing teeth).

Anemia and micronutrient deficiencies (particularly of iron, zinc, and vitamin A) are also common health problems among refugee and immigrant communities. Iron deficiency anemia has been found in up to one-half of newly arrived refugee children in high-risk age groups (toddlers/preschoolers and early adolescents) from developing countries. Although such deficiencies may be associated with undernutrition, anemia is also seen in refugee and immigrant children from the former Soviet Union in association with overweight, as is also found among low-income children in the U.S.

Anemia and iron deficiency may be compounded by lead poisoning. Studies of refugees and internationally adopted children shortly after their arrival in the U.S. have documented high rates of elevated blood lead levels. The levels found were in excess of those commonly found in the general U.S.-born population, but comparable to those of high-risk urban populations in Massachusetts. In addition, a DPH study of refugees resettled in Massachusetts during 1995 to1999 revealed high rates of elevated blood lead levels, newly acquired 6 months or more after resettlement in the U.S., suggesting risk for environmental exposures in the U.S. The elevated rates seen across varying refugee and international adoptee populations in the U.S., together with numerous scientific reports of elevated levels among immigrant children (including nearly all recent lead-related child fatalities in the U.S.), suggest that overseas exposure risks, while varied, are ubiquitous in most developing countries and the former Soviet Union.

Growth abnormalities may depend on the socioeconomic circumstances of the immigrant or refugee child's migrations. With infrequent exceptions, by the time these children arrive in the U.S., acute malnutrition is fairly uncommon, concentrated in populations arriving from areas of recent strife or from refugee camps. Among refugee children arriving in Massachusetts from 1995 to 1998, low weight-for-height, an indicator of acute malnutrition, was seen among 8% of African (mostly Somalian) and East Asian (mostly Vietnamese) children. Low height-for-age, an indicator of chronic malnutrition, was far more common among children from Africa (13%), the Near East (19%), and East Asia (30%). Typically, though, malnourished immigrant and refugee children undergo a period of rapid catch-up growth once in the U.S. During this time, it is essential that children receive adequate nutritional support and education.

Infectious diseases commonly found among refugee and immigrant children and adolescents are often easily treated and rarely pose a public health threat to the school community. Although refugees are screened for some infections, most immigrant children are not screened either overseas or in the U.S. One common infection is tuberculosis (TB). TB in refugee and immigrant youth is mostly latent, or asymptomatic. Children and adolescents with latent TB infections (i.e., not infectious) may attend school, pending evaluation and treatment. School health personnel should be mindful that targeted tuberculosis skin testing is recommended for students coming from endemic countries (such as most of those in the developing world). School nurses may be able to assist students taking TB medication by checking for adherence with the treatment schedule or by providing directly observed therapy.

In addition, high rates of intestinal parasites, such as *Giardia*, are found in some refugee and immigrant populations. While frequently asymptomatic, children and adolescents with symptoms

suggestive of a parasitic infection or those in situations that pose a high risk of infection or transmission (such as institutional-care or child care settings) may warrant screening and treatment or even empiric treatment with antiparasitic medication. Because of the high rates of parasitic infections among refugee populations, refugees arriving in Massachusetts are screened and treated for intestinal parasites. Another less common infection includes hepatitis B among children from endemic countries. Finally, skin infections such as fungal infections ("ringworm"), scabies, and lice are seen in newly arrived refugees and immigrants.

A MULTICULTURAL APPROACH TO HEALTH CARE

The following strategies for cultural assessment serve as guidelines for school personnel in cross-cultural interactions around health or other issues:

- Remember that your cultural beliefs may be as foreign to the student as the student's beliefs may be to you.
- Practice "cultural competence" — a continuous process of learning characterized by respect for differences and appreciation of how your culture interacts with that of students and their families.
- Consider students and their families as *individuals* before considering them as members of a specific cultural group.
- Never presume that an individual's ethnic identity is any indication of his or her cultural values or patterns of behavior.
- Treat all presumptions about cultural values and traits as hypotheses to be tested anew with each individual. Turn "facts" into questions. Learn what expectations the student and/or family have of you and your role, as well as how they view themselves and their role in the interaction.
- Keep in mind that newcomers are bicultural and that they face the task of integrating at least two different cultures that may conflict.
- Some aspects of an individual's cultural history, values, and lifestyle may prove relevant to a school health situation, but others may not. Do not prejudge which aspects are relevant to an individual's understanding of any health issue.

FACTORS THAT MAY AFFECT ACCESS TO HEALTH SERVICES

Whatever their country of origin or circumstance of arrival, refugees and immigrants may have frustrating experiences dealing with U.S. health services. Varying cultural beliefs and habits may lead to difficulties in accessing or understanding the Western health care delivery system. In addition, factors such as language, transportation, financial barriers, lack of health insurance, and lack of information may seriously affect access to services.

Language

It is common for refugee and immigrant children to learn English sooner than their parents. Positioned between their family and the school or health community, students may be expected, by both the family and the school, to serve as interpreters. Placing students in this role serves to make them de facto primary decision makers. School-age youth may end up translating information based primarily on what they believe their parents want to hear, or, alternatively, they may circumvent parents entirely, believing it is not important for parents to be informed or to intervene. The Massachusetts Emergency Room Interpreters Law (Chapter 66 of the Acts of 2000) prohibits the use of children as interpreters in emergency rooms for these reasons. Although it may be difficult to find adult interpreters, it is best not to use the child or other family members as

interpreters. When obtaining information, it is important to assure both the child and the parent that health matters being discussed are strictly confidential.

Because of limited English skills, some parents may be unable to communicate with school personnel and may feel isolated from the school community. Both state and federal guidelines require that parents with limited English proficiency be notified about their child's school performance in a language they use. In addition, the guidelines encourage schools to develop opportunities that increase the participation of parents with limited English proficiency. Special efforts by teachers, administrators, and school nurses may be necessary to help refugee and immigrant parents form a stronger connection with the school community. For example, in some schools, parents are encouraged to participate on the school health advisory committee. (School nurse leaders usually meet with the parents prior to the advisory committee meeting to review agenda items and ensure they understand them.) Also, it may be beneficial for school health personnel to meet with representatives of local ethnic communities to learn more about community issues and concerns related to health and health care.

Institutional Barriers

Specialized services for treating newcomers with health and mental health problems may be scarce, and interpreting services may not be available or reimbursable. However, clinics with traditions of serving newcomer communities (e.g., community health centers) may help facilitate access to care for refugee and immigrant families and provide specialized care such as treatment for torture or trauma.

Refugee and immigrant children may be eligible for publicly supported mental and general health care. In particular, the federal government has specific funding streams to ensure that newly arrived refugees and asylees may receive up to 8 months of cash and medical assistance after arrival in the U.S. or receipt of asylee status. In addition, refugees and asylees were exempted from most of the 1996 Personal Responsibility and Work Opportunity Reconciliation Act's immigrant restrictions on receipt of public benefits. By contrast, legal permanent residents currently have more limited eligibility for Medicaid, and undocumented persons are *not* eligible for Medicaid, other than for emergency medical services. It is important to remember that some immigrants with U.S.-born children may be unwilling to utilize public benefits such as Medicaid for those eligible children because of a mistaken fear of deportation or denial of immigration applications.

Of special concern to school health administrators are student health and immunization records. It is common for newcomers to leave their country with incomplete health records, with no records at all, or with immunizations that are not administered according to U.S. standards. Massachusetts law requires all children to be immunized prior to enrollment in school, and school administrators must have proper documentation in hand before a child can attend. When no documentation is available, the immunization series is initiated, even if the family reports that the child has been immunized in their country of origin. Regarding working parents who are pressed for time, it can be difficult for them to complete records or adhere to followup procedures. To facilitate completion of immunizations, newcomers should be encouraged to complete a health assessment for themselves and for their children soon after arrival.

Lack of transportation may also present a barrier to refugee and immigrant parents seeking medical care for their children. Local agencies that advocate for and/or provide services for newcomers may be able to assist in overcoming this barrier to care.

Cultural Beliefs About Health Care

Prevention is not a common approach to health care in many parts of the world, nor are Western-style health services universally available. As a result, newcomers may wait until they are in crisis,

either physically or emotionally, before seeking care. It is helpful to talk with a family or with a community agency to assess family members' knowledge of and experience with Western health care systems. Similarly, refugee and immigrant families may not be familiar with U.S. practices for caring for sick children and keeping sick children at home to limit exposures to infectious diseases in the school.

FAMILY ROLES, ACCULTURATION, AND BEHAVIORAL ISSUES

Family size, traditional family roles, and approaches to raising children are other factors for school personnel to take into consideration when dealing with the health needs of students. When the family structure is large and inclusive, a child may be under the direct care and supervision of family members other than parents. Child-rearing practices in some immigrant or refugee communities may seem severe compared to commonly accepted practices in the U.S.

As in the general population, teaching of sensitive topics (e.g., sexuality education, prevention of substance abuse, HIV/AIDS prevention) is met with varying degrees of acceptance in different newcomer communities. In some cases, parents will not allow their children to participate in classroom sex education and may even go so far as to remove their children from the school. Birth control may be prohibited and not even discussed. For others, sex education in the schools, although not a major concern, may be considered confusing and inappropriate. In some cultures, the expectation is that sex education will be taught indirectly through science or physical education, as was the case in the country of origin. In discussing such sensitive topics, it is important for school officials to be mindful of the cultural inhibitions of students and their families.

Similarly, gender roles in parenting can also be misinterpreted. In some cultures, the mother may not be empowered to make decisions without the father's approval. Therefore, maternal hesitancy in some decision making — particularly around sensitive issues such as those listed above — should not be interpreted as a lack of interest or concern. It is important for school officials to consider whether involvement of the father may be necessary for approving a child's participation.

SUMMARY

School personnel must be informed about and respectful of the customs, health beliefs, health practices, and family roles of newcomers. Workshops for newcomer communities on these topics, provided by local schools and community organizations, can help foster and encourage understanding of the potential health issues of children and their families from different cultures.

RESOURCES: MASSACHUSETTS AGENCIES AND ORGANIZATIONS

Massachusetts Office for Refugees and Immigrants (ORI)
18 Tremont Street, Suite 600
Boston, MA 02108
Phone: 617-727-7888
Fax: 617-727-1822
TTY: 617-727-8149
E-mail: ori.webmaster@state.ma.us
Website: http://www.mass.gov/ori/
ORI's Refugee Youth Adjustment Services and Refugee School Impact programs provide linguistically and culturally appropriate after-school and summer youth services tailored to the specific needs and challenges of refugee youth. Services include academic support, social skills development, recreational and employment opportunities, and leadership development. Program activities are designed to encourage full participation from refugee youth and to provide supportive services for their families. All ORI youth programs provide linkages to other programs and services in the area and address multiple barriers of participants through a network of in-house and referral support services. Currently, ORI Refugee Youth Adjustment Services and Refugee School Impact grants support programs in Lowell, Lynn, Springfield, West Springfield, Westfield, and Boston. ORI also maintains contact information for a network of refugee and immigrant community and social service organizations. ORI can be contacted for referral information for ethnic community groups.

Massachusetts Department of Public Health
Office of Multicultural Health (OMH)
250 Washington Street, 2nd Floor
Boston, MA 02108
Phone: 617-624-5270
Fax: 617-624-5046
Website: http://www.mass.gov/dph/omh/omh.htm
OMH maintains a comprehensive list of statewide interpreters and translators available for foreign language services.

Massachusetts Department of Public Health
Refugee and Immigrant Health Program
305 South Street
Jamaica Plain, MA 02130
Phone: 617-983-6590
Fax: 617-983-6597
Website: http://www.mass.gov/dph/cdc/rhip/wwwrihp.htm
Publication: The manual *Refugee Health Assessment (2000): A Guide for Health Care Clinicians* is available at http://www.mass.gov/dph/cdc/rhip/rha/index.htm.

The Access Project
Lincoln Plaza
89 South Street, Suite 404
Boston, MA 02111
Phone: 617-654-9911
Fax: 617-654-9922
Website: http://www.accessproject.org
The Access Project has served as a resource center for local communities working to improve health and health care access since 1998 and is a research affiliate of the Schneider Institute for Health Policy at Brandeis University. The following page on the website http://www.accessproject.org/issues.htm includes links to relevant resources and reports on immigration and health issues related to linguistic barriers to health care.

Center for Medical and Refugee Trauma
Boston Medical Center
Department of Child and Adolescent Psychiatry
One Boston Medical Center Place
Boston, MA 02118
Phone: 617-414-7531
Website: http://www.bmc.org/childpsychiatry/refugee_trauma.html
The Center for Medical and Refugee Trauma at Boston Medical Center has an emphasis on work with children and families who have experienced war, displacement, and resettlement stress. Activities of the Center include the development of culturally informed, socially and ecologically valid interventions for children who have experienced trauma, as well as examination of the impact of trauma on physical and mental health outcomes.

Health Care For All
30 Winter Street, 10th floor
Boston, MA 02108
Phone: 617-350-7279
Fax: 617-451-5838
TTY: 617-350-0974
Helpline: 800-272-4232 (information about free and low-cost health programs in Massachusetts)
Website: http://www.hcfama.org
Health Care For All is dedicated to making quality, affordable health care accessible to everyone, regardless of income or socioeconomic status. It is especially concerned about the most vulnerable members of society — the uninsured, low-income elders, children, people with disabilities, and immigrants.

Massachusetts Association of Teachers of Speakers of Other Languages (MATSOL)
The Schrafft Center, Commonwealth Corporation Incubator
Suite 1M10-Mezzanine Level
529 Main Street
Boston, MA 02129
Phone: 617-242-1756
Website: http://www.matsol.org
With core values of reflective leadership, collaboration, diversity, and professionalism, MATSOL seeks to advocate for the educational opportunities and achievement of English-language learners as well as provide professional development and support to educators working with English-language learners.

Massachusetts Immigrant and Refugee Advocacy Coalition (MIRA)
105 Chauncy Street, Suite 901
Boston, MA 02111
Phone: 617-350-5480 x210
Fax: 617-350-5499
Website: http://www.miracoalition.org
MIRA is a multiethnic, multiracial coalition that involves hundreds of grassroots immigrant organizations, human services agencies, legal service providers, religious groups, and human rights groups in cooperative efforts to improve the lives of immigrants and refugees.

Massachusetts Medical Interpreters Association (MMIA)
750 Washington Street
NEMC Box 271
Boston, MA 02111-1845
Website: http://www.mmia.org
MMIA is a nonprofit organization dedicated to equal access to quality health care for all people and to the development of professional medical interpreting. Founded in 1986, the program is made up of members who provide interpreting services in over 70 languages. Membership is open to all those employed in, concerned with, or interested in medical interpreting.

Mayor's Office of New Bostonians
City of Boston
Room 803
1 City Hall Plaza
Boston, MA 02201
Phone: 617-635-2980
Fax: 617-635-4540
E-mail: NewBostonians@cityofboston.gov
Website: http://www.cityofboston.gov/newbostonians
Mayor's Office of New Bostonians publishes *New Bostonians Community Resource Directory,* which includes detailed information on 128 community-based organizations that work with immigrants and newcomers in Boston, and an extensive section on ethnic media.

National Coalition of Advocates for Students (NCAS)/Boston
P.O. Box 218
Boston, MA 02134
Phone: 617-746-9995
Fax: 617-746-9997
Website: http://www.ncasboston.org
The NCAS website offers free school information for Asian American families (14 articles covering basic information about public schools) as well as a variety of books relating to immigrant students.

RESOURCES: MASSACHUSETTS COMMUNITY GROUPS AND LOCAL SERVICE AGENCIES

Asian American Civic Association (AACA)
200 Tremont Street
Boston, MA 02116
Phone: 617-426-9492
Website: http://www.aaca-boston.org
Since 1967, the AACA has been devoted to the mission of providing economically disadvantaged immigrants and refugees with the means to achieve sustainable economic self-sufficiency in the United States.

Asian Task Force Against Domestic Violence
P.O. Box 120108
Boston, MA 02112
Phone: 617-338-2355
Fax: 617-338-2354
Website: http://www.atask.org
Since 1994, the Task Force has operated New England's only multilingual shelter and services for Asian victims of domestic violence and their children.

Brazilian Resource and Services Network (BRSN)
Juniper Hill School
Room 20
29 Upper Jocelyn Avenue
Framingham, MA 01701
Website: http://www.fcplink.org/brsn/Brsn.htm
BRSN is a joint effort on behalf of several Framingham organizations to meet the needs of Brazilian immigrants in the areas of child care, employment, health care, housing, immigration, ESL/citizenship concerns, and drivers' licensing.

Centro Latino de Chelsea
267 Broadway
Chelsea, MA 02150
Phone: 617-884-3238 x211
Fax: 617-884-4646
E-mail: info@centrolatino.org
Website: http://www.centrolatino.org
Centro's mission is to improve the quality of life and self-determination of Latinos in Chelsea and surrounding communities through economic development, education, health, and social well-being strategies.

Centro Presente
54 Essex Street
Cambridge, MA 02139
Phone: 617-497-9080
Fax: 617-497-7247
Website: http://www.cpresente.org/index.htm
Founded in 1981, Centro Presente is a statewide, member-driven Latin American immigrant organization committed to the self-determination, self-sufficiency, and social and economic equality of the Latin American immigrant community of Massachusetts.

Child and Family Services of Pioneer Valley
425 Union Street, Level D
West Springfield, MA 01089
Phone: 413-737-4718
Fax: 413-827-7817
Child and Family Services of Pioneer Valley serves the Albanian, Cambodian, Bosnian, Russian, and Vietnamese communities.

Haitian-American Public Health Initiative (HAPHI)
10 Fairway Street
Mattapan, MA 02126
Phone: 617-298-8076
Fax: 617-296-1570
Website: http://haphi.org
HAPHI provides translation services, referral services, health education, and screenings to the Haitian community of Mattapan and parts of Dorchester. It promotes health and fosters well-being within Greater Boston's Haitian community through education, prevention, advocacy, outreach, and services.

Haitian Coalition
One Davis Square
Somerville, MA 02144
Phone: 617-629-0798
Website: http://www.haitian-coalition.org
The Haitian Coalition's mission is to organize Haitian people in Somerville and Cambridge to improve the economic, political, physical, and social elements of the Haitian community. The coalition also provides services to Haitians living in surrounding communities, primarily Medford, Malden, and Everett.

Latin American Health Institute (LHI)
95 Berkeley Street
Suite 600
Boston, MA 02116
Phone: 617-350-6900
Fax: 617-350-6901
Website: http://www.lhi.org/lhi/
LHI is New England's premier community-based public health organization, serving annually over 25,000 Latin American families and individuals through more than 24 direct care programs. In addition, LHI reaches

health care professionals, para-professionals, and institutions through education, technical assistance, fiscal sponsorship, program oversight, and consulting services.

RESOURCES: NATIONAL AGENCIES AND ORGANIZATIONS

Health Resources and Services Administration (HRSA)
5600 Fishers Lane
Rockville, MD 20857
Phone: 301-443-0210
Fax: 301-443-2803
Website: http://www.hrsa.gov/culturalcompetence/
HRSA, an agency of the U.S. Department of Health and Human Services, is the primary Federal agency for improving access to health care services for people who are uninsured, isolated or medically vulnerable. The HRSA website includes a comprehensive section on Cultural Competency, including links to resources for Cultural Competence assessment tools, training curricula, health professions education, etc.

REFERENCES

Al-Mateen, C. S. (2004). The Muslim child, adolescent, and family. *Child and Adolescent Psychiatric Clinics of North America*, *13*, 183–200.

Andrews, M. M., Boyle, J., Carr, T. J. & Boyle, J. S. (2002). *Transcultural concepts in nursing care* (4th ed.). Philadelphia: Lippincott Williams & Wilkins.

Aronson J. E., Smith A. M., Kothari V., et al. (2000). Elevated blood lead levels among internationally adopted children — United States, 1998. *Morbidity and Mortality Weekly Report*, *49*, 97–100.

Bornstein, M. H. & Cote, L. R. (2004). **'**Who is sitting across from me?': Immigrant mothers' knowledge of parenting and children's development. *Pediatrics, 114,* e557-e564.

Bruns, D. A. & Corso, R. M. (2001). *Working with culturally & linguistically diverse families* (Report number ED455972). Champaign, IL*:* ERIC Clearinghouse on Elementary and Early Childhood Education.

Castillo, R., Waitzkin, H. & Escobar, J. U. (1994). Somatic symptoms and mental health disorders in immigrant and refugee populations. In J. Miranda, A. A. Hohmann, C. C. Attkinson & D. B. Larson (Eds.), *Mental Disorders in Primary Care,* 163–185. San Francisco: Jossey-Bass.

Chang, S., Wheeler, L. S. & Farrell, K. P. (2002). Public health impact of targeted tuberculosis screening in public schools. *American Journal of Public Health*, *92*(12), 1942–1945. PMID: 12453813.

Crow, K., Matheson, L. & Steed, A. Informed consent and truth-telling: Cultural directions for health care providers. *Journal of Nursing Administration, 30*(3), 148–152. PMID: 10725944.

D'Avanzo, C. E. & Geissler, E. M. (2002). *Pocket guide to cultural assessment* (3rd ed.). St. Louis: C.V. Mosby.

Davidhizar, R., Havens, R. & Bechtel, G. A. (1999). Assessing culturally diverse pediatric clients. *Pediatric Nursing, 25*(4), 371–376. Review. PMID: 12024356.

Doswell, W. M. & Erlen, J. A. (1998). Multicultural issues and ethical concerns in the delivery of nursing care interventions. *Nursing Clinics of North America, 33*(2), 353–361. Review. PMID: 9624209.

Fadiman, A. (1998). *The spirit catches you and you fall down*. New York: Farrar, Straus and Giroux.

Fazel, M. & Stein, A. (2002). The mental health of refugee children. *Archives of Disease in Childhood, 87*(5), 366–370. PMID: 12390902.

Fletcher, S. (2002). Cultural implications in the management of grief and loss. *Journal of Cultural Diversity, 9*(3), 86–90.

Fong, R. (2003). *Culturally competent practice with immigrant and refugee children and families.* New York: Guilford Press.

Fox, P. G., Burns, K. R., Popovich, J. M., Belknap, R. A. & Frank-Stromborg, M. (2004). Southeast Asian refugee children: Self-esteem as a predictor of depression and scholastic achievement in the U.S. *International Journal of Psychiatric Nursing Research*, *9*(2), 1063–1072. PMID: 14964046.

Fox, P. G., Cowell, J. M. & Montgomery, A. C. (1999). Southeast Asian refugee children: Violence experience and depression. *International Journal of Psychiatric Nursing Research, 5*(2), 589–600. PMID: 10734851.

Gambol, P. & Gambol, M. (2002). Vulnerability in the Asian or Pacific Islander immigrant child. *Journal of*

School Nursing, 18(6), 314–321. Review. PMID: 12463768.

Garrison, E. G., Roy, I. S. & Azar, V. (1999). Responding to the mental health needs of Latino children and families through school-based services. *Clinical Psychology Review*, *19*(2), 199–219. Review. PMID: 10078420.

Gavagan, T. & Brodyaga, L. (1998). Medical care for immigrants and refugees. *American Family Physician*, *57*, 1061–1068.

Geltman, P. L., Brown, M. J. & Cochran, J. (2001). Lead poisoning among refugee children resettled in Massachusetts, 1995–1999. *Pediatrics*, *108*, 158–162.

Geltman, P. L., Radin, M., Zhang, Z., et al. (2001). Growth status and related medical conditions among refugee children in Massachusetts, 1995–1998. *American Journal of Public Health, 91*, 1800–1805.

Giger, J. N. & Davidhizar, R. E. (2003). *Transcultural nursing: Assessment and intervention* (4th ed.). St. Louis: C.V. Mosby.

Gropper, Rena C. (1996). *Culture and the clinical encounter: An intercultural sensitizer for the health professions.* Yarmouth, ME: Intercultural Press.

Guarnaccia, P. J. & Lopez, S. (1998). The mental health and adjustment of immigrant and refugee children. *Child and Adolescent Psychiatric Clinics of North America, 7*(3), 537–553, viii-ix. PMID: 9894054.

Hayes, E. B., Talbot, S. B., Matheson, E. S., Pressler, H. M., Hanna, A. B. & McCarthy, C. A. (1998). Health status of pediatric refugees in Portland, ME. *Archives of Pediatrics & Adolescent Medicine, 152,* 564–568.

Henry, R. R. (1999). Measles, Hmong, and metaphor: Culture change and illness management under conditions of immigration. *Medical Anthropology Quarterly, 13*, 32–50.

Imes, S. & Landry, D. (2002). Don't underestimate the power of culture. *SCI Nursing***,** *19*(4), 172–176. PMID: 12616779.

Kaiser Commission on Medicaid and the Uninsured*.* (2001). *Immigrants' health care coverage and access fact sheet*. Washington, DC.

Jenista, J. A. (2001). The immigrant, refugee, or internationally adopted child. *Pediatrics in Review, 22*, 419–429.

Labun, E. (2003). Working with a Vietnamese adolescent. *Journal of School Nursing, 19*(6), 319–25. PMID: 14622042.

Lee, T., Brugge, D., Francis, C., & Fisher, O. (2003). Asthma prevalence among inner-city Asian American schoolchildren. *Public Health Reports, 118*(3), 215–220. PMID: 12766216.

Leininger, M. (2001). *Culture care diversity and universality: A theory of nursing* (1st ed.). Sudbury, MA: Jones & Bartlett Publishers.

Leininger, M. & McFarland, M. (2002). *Transcultural nursing: Concepts, theories, research and practice* (3rd ed.)*.* New York: McGraw-Hill/Appleton & Lange.

Loue, S. (Ed.). (1998). *Handbook of immigrant health*. New York: Plenum Press.

Lucas, T. (1997). *Into, through, and beyond secondary schools: Critical transitions for immigrant youths.* McHenry, IL: Delta Systems, and Washington, DC: Center for Applied Linguistics.

Luckmann, J. (1999). *Transcultural communication in health care.* Lexington, KY: Delmar Learning.

Minarik, P. A. (1996). *Culture and nursing care: A pocket guide*. San Francisco: University of California.

Oin-Hilliard, D. B. (2003). Gendered expectations and gendered experiences: Immigrant students' adaptations in schools. *New Directions in Youth Development, 100,* 91–109.

Orellana, M. F. (2003). Responsibilities of children in Latino immigrant homes. *New Directions in Youth Development, 100*, 25–39.

Palinkas, L. A., Pickwell, S. M., Brandstein, K., Clark, T. J., Hill, L. J., Moser, R. J. & Osman, A. (2003). The journey to wellness: Steps of refugee health promotion and disease prevention. *Journal of Immigrant Health*, *5*, 19–28.

Pipher, M. (2003). *The middle of everywhere: Helping refugees enter the American community*. New York: Harcourt/Harvest Books.

Randall-David, E. (1989). *Strategies for working with culturally diverse communities and clients*. Washington, DC: Association for the Care of Children's Health.

Reardon-Anderson, J., Capps, R. & Fix, M. (2002). The health and well-being of children in immigrant families. *New Federalism: National Survey of America's Families*, Series B, B 52.

Rundle, A., Carvalho, M. & Robinson, M. (Eds.). (2002). *Cultural competence in health care: A practical guide.* Hoboken, NJ: Wiley/Jossey-Bass.

Sam, D. L. (2000). Psychological adaptation of adolescents with immigrant backgrounds. *Journal of Social Psychology, 140*(1), 5–25.

Schantz, S., Charron, S. A. & Folden, S. L. (2003). Health seeking behaviors of Haitian families for their school aged children. *Journal of Cultural Diversity, 10*(2), 62–68. PMID: 14508927.

Schulte, J. M., Maloney, S., Aronson, J., et al. (2002). Evaluating acceptability and completeness of overseas immunization records of internationally adopted children. *Pediatrics, 109*, E22.

Spector, R. E. (2003). *Cultural diversity in health and illness* (6th ed.). Upper Saddle River, NJ: Prentice Hall.

Suarez-Orozco, C. & Todorova, I. L. (2003). The social worlds of immigrant youth. *New Directions in Youth Development*, 100, 15–24.

Tellep, T. L., Chim, M., Murphy, S. & Cureton, V. Y. (2001). Great suffering, great compassion: A transcultural opportunity for school nurses caring for Cambodian refugee children. *Journal of Transcultural Nursing, 12*(4), 261–274. PMID: 11989217.

Walker, P. & Jaranson, J. (1999). Refugee and immigrant health care. *Medical Clinics of North America, 4*, 1103–1120.

Watters, C. (2001). Emerging paradigms in the mental health care of refugees. *Social Science & Medicine, 52*, 1709–1718.

Yeh, C. J. (2003). Age, acculturation, cultural adjustment, and mental health symptoms of Chinese, Korean,

and Japanese immigrant youths. *Cultural Diversity & Ethnic Minority Psychology, 9*(1), 34–48. PMID: 12647324.

Yu, S. M., Huang, Z. J., Schwalberg, R. H., Overpeck, M. & Kogan, M. D. (2003). Acculturation and the health and well-being of U.S. immigrant adolescents. *Journal of Adolescent Health*, *33*(6), 479–488. PMID: 14642710.

Yu, S. M., Huang, Z. J. & Singh, G. K. (2004). Health status and health services utilization among U.S. Chinese, Asian Indian, Filipino and other Asian/Pacific Islander children. *Pediatrics, 113*, 101–107.

Zuber, P. L. F., McKenna, M. T., Binkin, N. J., et al. (1997). Long-term risk of tuberculosis among foreign-born persons in the United States. *Journal of the American Medical Association, 278*, 304–307.

Note: Articles with PMID number have been indexed by PubMed for MEDLINE.