Part III: Policies on Asthma, School Health Services, and Healthy Environments
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**School Health Publications**

**Someone at School Has AIDS: A Complete Guide to Education Policies Concerning HIV Infection.** With endorsements from the AMA, American Academy of Pediatrics, and many other medical and education organizations, this guide offers all the information and recommendations schools need for educational, health, sports and confidentiality policies related to HIV. NASBE’s highly praised and widely used guide has been updated with current statistics and entirely new resource lists. (2001, 100 pp., $15.00)

**Fit, Healthy, and Ready to Learn: Part I—Physical Activity, Healthy Eating, and Tobacco Use Prevention** is the first in a series of guides designed to help educators establish effective policies that promote high academic achievement and lifelong healthy habits. It includes guidance on general school health policies and program development, as well as specific information on physical education program design, safety requirements, food service programs, and smoking cessation services. The book is distributed as a set of binder contents for ease of use and future expansion (2000, 236 pages, $22.00). Also available, **Fit, Healthy, and Ready to Learn: Part II—Sun Safety** (2002, 34 pages, $12.00)

**The Obesity Epidemic: What Schools Can Do.** This special issue of NASBE’s journal includes background material from the Centers for Disease Control and Prevention, school nutrition policies, the role of physical education in reducing childhood obesity, district nutrition standards, school wellness policies, and developing school-based initiatives to improve nutrition and physical activity. (December 2004, 52 pages, $10.00)

**How Schools Work and How to Work with Schools** is a primer for health professionals and others who seek to serve children and youth in school settings. This guide includes a summary of the benefits for students when health professionals and educators work together; an overview of the core mission of education; a background chapter on how education works at the school, district, state, and national levels; as well as many practical tips for how to work effectively with educators, school administrators, and policymakers. (2003, 48 pp.)

To order these and other publications, or for information about volume discounts, call 1-800-220-5183 or go to [www.nasbe.org](http://www.nasbe.org).
Fit, Healthy, and Ready to Learn

A School Health Policy Guide

Part III: Policies Related to Asthma, School Health Services, and Healthy Environments

By Teresa K. Wilson, MPH, RN
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2005

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This publication is a supplementary chapter to *Fit, Healthy, and Ready to Learn: A School Health Policy Guide*. The contents of the other chapters appear below.

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Part III: Policies Related to Asthma, School Health Services, and Healthy Environments can be ordered for $16.00 each. Part I, which is distributed as a set of three-ring binder contents, can be ordered for $22.00. The cost of Part II is $12.00. The three parts can be ordered together for the special price of $38.00. Shipping and handling is 10% of the total purchase amount ($4.50 minimum).

To order, call the National Association of State Boards of Education at (800) 220-5183, order online at www.nasbe.org (click on “NASBE Bookstore”), or write to NASBE at 277 South Washington Street, Suite 100, Alexandria, VA 22314, USA. Orders under $50.00 must be prepaid; purchase orders, VISA, and MasterCard are accepted. Volume discounts are available.

An additional chapter currently in development is Policies to Prevent HIV Infection, Other STDs, and Pregnancy among Young People. Purchasers of previous parts are notified when new chapters become available.
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H. Introduction

Asthma is a common chronic childhood illness characterized by recurrent episodes of shortness of breath, wheezing, coughing, and chest tightness. Symptoms can range from mild to life-threatening. In 2002, over nine percent of U.S. children aged 5 to 17 currently had asthma—or nearly five million school-age children. More than six percent had an asthma attack in the previous year.

Asthma is of great concern to educators because it is a leading cause of school absenteeism. Each year, U.S. students miss about 14 million days because of it. Students whose nighttime sleep is disrupted by asthma symptoms can experience lack of concentration, mood swings, poor recall memory, and greater difficulty with school work. Some studies have found that children with uncontrolled asthma also have a higher incidence of grade failure.

The good news is that asthma is a treatable disease. By taking proper medication and avoiding exposure to environmental triggers that can cause asthma episodes, people with asthma can reduce both the frequency and severity of their asthma symptoms. Children whose asthma is properly controlled can lead active lives, experience minimal symptoms, and be present in the classroom ready to learn.

Conversely, children who do not receive the help they need to control asthma suffer unnecessarily, and some even die. The economic impact of asthma on school-age children, families, and society is immense (see box on page 2).

Education leaders can adopt policies and procedures to ensure that students with asthma receive appropriate support. In addition to improving the quality of life for those with asthma, a comprehensive set of school asthma policies can:

- improve school attendance and academic performance among students with asthma;
- reduce the number of asthma-related disruptions in the classroom;
- create a healthier learning environment; and
- give schools some legal protection against claims of negligence.

In a study of a school health program designed to teach low-income elementary school students and their parents how to better manage asthma, the program was found to significantly improve students’ grades and reduce the number of asthma episodes they experienced. In another study of 835 children with asthma in grades two to five who attended either a school with an asthma management program or a control school without a
program, those in a school with an asthma management program were shown to have 34 percent fewer school absences attributable to asthma in the previous three months.\textsuperscript{10}

**A growing national policy priority**

In recent years, several authoritative national bodies have heightened public awareness about the serious health problems posed by asthma, particularly among school-aged children and youth. Their recommendations provide a useful framework for shaping state and local education policies.

- The U.S. Congress, in the Children’s Health Act of 2000, recognized asthma as a national health problem and took a first step toward establishing a national asthma policy.\textsuperscript{11}

- *Improving Childhood Asthma Outcomes in the United States: A Blueprint for Policy Action*, a 2002 report by an interdisciplinary committee of nationally recognized experts and leaders in childhood asthma, recommended the promotion of “asthma-friendly schools” and school-based asthma programs.\textsuperscript{12}

- The National Conference of State Legislatures (NCSL) documented that 220 bills related to asthma were introduced in state legislatures in 2000–2002 and that 79 were enacted.\textsuperscript{13} At least 18 of these laws applied specifically to schools.

- The national health objectives in *Healthy People 2010* include reducing the number of school days that students miss because of asthma (objective 24–5) and increasing the proportion of persons with asthma who receive asthma care consistent with guidelines from the National Asthma Education and Prevention Program (NAEPP) (objective 24–7).\textsuperscript{14} The NAEPP guidelines include teaching people to recognize the early signs and symptoms of asthma episodes and how to respond appropriately, as well as assessing and reducing students’ exposure to environmental risk factors for asthma in school environments.

- The federal Asthmatic Schoolchildren’s Treatment and Health Management Act of 2004 established funding preference for asthma-related federal programs to states having laws that protect students’ rights to carry and self-administer asthma and/or anaphylaxis medication.\textsuperscript{15} The legislation included a statement that Congress commends the Centers for Disease Control and Prevention (CDC) for developing the guide *Strategies for Addressing Asthma Within a Coordinated School Program*\textsuperscript{16} and encourages all schools to review these strategies and adopt policies that will best meet the needs of their student population.
• Various federal agencies, national organizations, and state education and health agencies have developed valuable policy and program guidance materials for school leaders, many of which are referenced in this policy guide.

**About this publication**

This chapter of *Fit, Healthy, and Ready to Learn: A School Health Policy Guide* provides suggestions for education decision makers about policies and programs related to asthma and other chronic health conditions. Like the previous chapters, it provides sample policies that states, school districts, and public and private schools can adapt or revise to fit their local needs and governance frameworks. Concise explanations, excerpts from existing policies, quotes from noted experts, and lists of useful resources accompany each sample policy.

Shaped by a large number of advisors and a CDC expert panel, the chapter is designed to complement and build on numerous other guidance documents developed in recent years by public agencies and private organizations. However, this policymaking guide is not written to be a manual for daily practice or to guide individual treatment decisions by school health personnel. Consult the referenced resources for more detailed procedural guidance.

The development of asthma-related policies is discussed in five sections:

1. **School asthma program.** This section describes how states, school districts, or schools can prepare a comprehensive program that responds to the needs of students with asthma.

2. **Education and staff development about chronic health conditions.** This section describes how lessons about common chronic diseases can be integrated into health education, science, and physical education curricula at appropriate grades; how professional development for school staff members can help ensure that they respond appropriately to health emergencies; and how educational reinforcement can help students with chronic health conditions better comply with their individual disease management plans.

3. **Individual student plans.** This section describes how schools can adopt a system that identifies students with conditions such as asthma that impede learning, assesses the students’ needs on a case-by-case basis, and provides appropriate services and accommodations. It also describes how physical education programs can be adapted to help students with chronic health conditions get the exercise they need.

4. **School health services.** This section describes how school health personnel, in partnership with parents, other caregivers, and health care providers, can help students manage and control many chronic health conditions. It also describes how schools can ensure that students experiencing an acute medical crisis get immediate access to medications and the support of responsible adults with the knowledge and skills to help them.

5. **Healthy school environments.** This section describes how schools can implement measures to decrease students’ exposure to indoor and outdoor allergens and irritants, which are environmental triggers that can precipitate asthma episodes.

This chapter is focused on asthma, but NASBE recognizes that it is only one of several chronic diseases that school policies need to address. The sample policy in the first section specifically addresses a comprehensive school asthma program. In contrast, the sample policies in the remaining sections are written in broad terms so
as to apply to other chronic health conditions such as serious allergies, diabetes, epilepsy, cancer, and other extended illnesses (but not mental illness, which is beyond the scope of this chapter).

All of the policies suggested in this chapter should be implemented within the context of a coordinated school health program. See Chapter C: “General School Health Policies” for guidance on establishing the overall framework for a complete program.

Policy development and adoption

Most state education agencies and school district central offices employ capable staff members who can draft policies and shepherd them through the adoption process. As with the development of any policy, it is also essential to engage people with a broad range of perspectives. For example, school nurses and other health-care practitioners can help identify practical barriers to the implementation of proposed policies and devise workable solutions. Family members, health-care professionals, and others in the community can help build widespread awareness and support for a policy.

Sometimes the energy, commitment, and coalition-building ability of dedicated partners outside of the education system can be enlisted to help get a policy adopted. For example, the nonprofit organization Attack on Asthma Nebraska formed collaborative partnerships among educators, health care providers, parents, and other members of the community to advocate and support statewide policies to increase the capacity of schools to respond to asthma attacks and severe allergic reactions.” Similar collaborative partnerships have led to the development of tobacco-free school policies and indoor air quality policies in many jurisdictions.

The numerous resources noted in this chapter can help guide policy development specialists, education decision makers, and school practitioners. For practical guidance on the policy development process and how to engage education decision makers effectively, readers might want to review Chapter B, “The Art of Policymaking.” Those who plan for and draft policy can use NASBE’s online state school health policy database at www.nasbe.org/healthyschools to locate additional policy models and gather ideas for wording their own policy proposals. The database describes asthma-related policies of all 50 states and includes hyperlinks to the actual policies where available. Summaries of the database’s contents are included throughout this chapter.

About the Sample Policies

The sample policies from all of the chapters of Fit, Healthy, and Ready to Learn: A School Health Policy Guide are available at www.nasbe.org/healthyschools. Users may download the sample policies and either adopt them or adapt them to fit local needs, values, and governance systems. The policies are written to be appropriate for use at the state, school district, or school level by public or private schools.

When using the sample policies, please include the following courtesy attribution: “These policies first appeared in Fit, Healthy, and Ready to Learn: A School Health Policy Guide, a publication of the National Association of State Boards of Education (2005).” NASBE does not require prior permission for use of the sample policies, but copyright laws apply to the rest of the chapter.
1. School Asthma Program

The sample policy below outlines the essential elements of a comprehensive school asthma program. A written policy can help institutionalize the school’s role in providing effective support for students with asthma. A statement of purpose and goals can help guide program implementation and explain the policy to the public.

School leaders should thoroughly discuss each sample policy and customize it to reflect local needs, values, and governance structures. Underlined italics are used to highlight phrases in the sample policy that may vary from one community to another. With appropriate alterations, these policies can be used by public or private education agencies at the state, district, or school level.

Sample Policy for a School Asthma Program:

PURPOSE. To support the academic performance and improve the health status of students with asthma.

RATIONALE. Asthma is a common chronic childhood illness and a major cause of student absences from school. Students with poorly controlled asthma may have greater difficulty with school work and a higher incidence of grade failure. Asthma attacks (acute episodes of symptoms) can be serious and life-threatening for students who experience them, and they also can disrupt classes and cause widespread distress for everyone else. Yet schools can help students control their asthma by helping them follow individualized asthma action plans, by minimizing students’ exposure to allergens and other irritants, and by responding appropriately to students’ asthma episodes.

SCHOOL ASTHMA PLAN. The state education agency/Each school district/Each school shall prepare, adopt, and implement a comprehensive plan for the prevention and management of asthma that is based on current research and best practices. The plan shall be developed in partnership with families, health care providers, and community agencies; implemented within the context of a coordinated school health program; and include the following provisions:

1. Asthma awareness education for students is integrated within health education, science, and physical education curricula at appropriate levels and is taught by well-prepared and well-supported teachers.

2. All school personnel are required to participate in professional development programs that include basic information about asthma, asthma management practices, and emergency response procedures.

3. Procedures are established to identify students with significant asthma morbidity, that is, students whose health, education, or quality of life are negatively impacted by their asthma.
4. The prevention, health care, and emergency needs for each student with asthma are documented in individualized asthma action plans, which are developed in consultation with the students' parents/guardians, the students' primary health care provider(s), and school health personnel.

5. Appropriate school health services are provided to students with asthma action plans by qualified personnel.

6. Students’ prescribed medications are securely stored and correctly administered by adequately prepared and supported school personnel, in accordance with state law and the written approvals of a parent or guardian and the prescribing health care provider(s).

7. **Students deemed competent by a school nurse are allowed to possess and self-administer prescribed medications on school grounds and at all school functions on and off school property, with the written approval of a parent or guardian and the student’s prescribing health care provider(s) [if permitted by state law].**

8. Tobacco smoke is eliminated from all school buildings, grounds, vehicles, and school-sponsored events at all times.

9. Procedures are established to systematically identify and minimize other asthma triggers (respiratory allergens and irritants) in school buildings and on school grounds.

10. Each component of the plan is evaluated in an ongoing manner so as to improve policies, procedures, and services.

**PROGRAM ADMINISTRATION.** State/district/school administrators shall designate a staff person/the school health team to:

- implement the school asthma plan;
- facilitate communication among school health program staff and collaborating agencies;
- periodically provide program improvement information to personnel implementing the school asthma plan;
- conduct evaluation activities; and
- submit annual progress reports and recommendations for program improvement to the state/district board of education and the school health advisory council.

**Discussion**

Asthma is a chronic inflammatory disease of the respiratory system. The sensitive airways of susceptible individuals become swollen and easily provoked by a variety of triggers that vary from one person to another. Although its origins are not well understood, asthma often begins in childhood as children’s airways become sensitized to environmental allergens commonly found in homes.  

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**H–6 National Association of State Boards of Education**
Asthma Is Common—and More Common among Some

- Nearly 4.9 million school-age children and youth aged 5 to 17 currently had asthma in 2002, or 91.9 out of every 1,000. This age group has the highest prevalence of asthma.
- The current asthma prevalence rate for boys aged 0 to 17 years (94.8 per 1,000) was over 30 percent higher than the rate among girls (71.8 per 1,000).
- More than 3.2 million children (six percent of all children aged 5 to 17) had an asthma attack in the 12 months before being surveyed.
- African-American children had a much higher prevalence rate of asthma attacks (80.9 per 1,000) than white children (57.9 per 1,000).

American Lung Association

Common triggers that can cause an asthma episode include the following:

- Allergens such as pollen, animal dander, dust mites, feathers, cockroaches, and molds.
- Respiratory irritants such as tobacco smoke, chalk dust, perfumes and other personal care products, pesticides, cleaning products, diesel exhaust, air pollution, and cold air. (A more complete list of irritants is in the “Definitions of Terms” box beginning on page 8).
- Viral respiratory infections.
- Physical exercise, especially intense outdoor activity in cold, dry air.
- Intense emotions such as laughing or crying hard.

Asthma symptoms can vary in severity. Acute episodes (also called attacks or exacerbations) involve coughing, wheezing, chest tightness, or shortness of breath. An asthma episode can be merely inconvenient or an alarming, life-threatening event.

On average, a typical U.S. classroom of 30 students would include four who have ever been diagnosed with asthma, three who currently have it, and two who have had an asthma attack in the past year.

Asthma and Poverty

Socioeconomic status, particularly poverty, appears to be an important contributing factor to asthma illness, disability, and death.

U.S. Department of Health and Human Services

Poverty, substandard housing that results in increased exposure to certain indoor allergens, lack of education, inadequate access to health care, and the failure to take appropriate medications may all contribute to the risk of having a severe asthma attack or, more tragically, of dying from asthma.

National Institute of Allergy and Infectious Diseases

School-based asthma prevalence among children four and five years old in 1999 was more than twice as high among children residing in low-income areas than among children residing in high-income areas of New York City (13.9% versus 6.4%).

New York City Department of Health and Mental Hygiene
Definitions of Terms

The following terms are used throughout this chapter. To provide clarity and prevent confusion, education policies often include or append such a list of definitions.

- **Adapted physical education**—physical education programs that include guidance on how to appropriately modify physical activities and assessments for students with a disability or chronic health condition in ways that provide them with the same instruction and opportunity to develop skills that other students receive.

- **Air quality index (AQI)**—the standard nationwide system that air pollution control programs use to notify the public about levels of outdoor air pollution including ozone (smog) and particle pollution from ash, vehicle exhaust, soil dust, pollen, and other sources.

- **Allergens**—substances including pollen, mold spores, dust mites, animal dander, and cockroaches and other pests that cause people with allergies or asthma to sneeze, cough, wheeze, or experience other symptoms of respiratory distress.

- **Anaphylaxis**—a sudden, severe allergic reaction that can kill within minutes of eating or touching an allergen either through swelling of the airways or a drastic loss of blood pressure.

- **Asthma action plan**—a written, individual disease management plan prepared by a health care provider or school nurse for easy and convenient use by a patient, family, school personnel, and other caregivers. The plan typically provides clear instructions for routine asthma monitoring, lists prescribed medications including dosages and timing, notes specific triggers that can start an asthma episode, describes the signs and symptoms of an asthma attack, details emergency response steps for asthma episodes, and includes emergency contact information.

- **Asthma awareness**—general knowledge about basic disease facts, common asthma triggers and how to minimize exposure to them, and emergency procedures to follow if a person experiences a serious asthma episode.

- **Asthma episode, attack, or exacerbation**—synonyms that refer to the acute occurrence of asthma symptoms such as coughing, wheezing, chest tightness, or shortness of breath.

- **Chronic health condition**—any illness, disease, or disability of long duration or frequent recurrence, including asthma, diabetes, serious allergies, epilepsy, and cancer.

- **Controlled asthma**—the desirable condition that exists when a person with asthma experiences minimal symptoms, can engage in normal activities of daily living, does not have an increased need for asthma medications, has no absences related to asthma, and (in the case of a student) is present in the classroom ready to learn.

- **Exercise-induced asthma (EIA)**—a preventable occurrence of asthma symptoms, which most people with asthma can experience following intense or extended physical exertion, especially when breathing cold, dry air. Also referred to as *exercise-induced bronchospasm (EIB)*.
- **Health care provider**—a trained medical professional licensed by the state to prescribe medications and direct health care decisions; health care providers include physicians, nurse practitioners, and physician assistants in public and private settings.

- **Healthy learning environment plan**—a plan developed through a systematic process to assess a school’s physical conditions, promote optimal learning, and minimize human exposure to indoor and outdoor allergens, irritants, hazardous chemicals, and pollutants.

- **Individual health care plan (IHCP)**—a school nursing care plan for a student with a relatively complex health condition or a need to have the school environment modified because of a health condition; the plan documents necessary health information, describes the student’s needs, and outlines procedures necessary to maximize the student’s participation and performance in school.

- **Integrated pest management (IPM)**—a planned program to reduce sources of food, water, and shelter for pests in and around school buildings with procedural guidelines for pesticide application and for the notification of parents/guardians and building occupants prior to the application.

- **Respiratory irritants**—substances that can cause airway irritation or inflammation and lead to asthma symptoms. These substances include inhaled and secondhand tobacco smoke; dust; chalk dust; perfumes and other scented and unscented personal care products; pesticides; unvented fumes; diesel exhaust, air pollution; cold, dry air; and volatile organic chemicals (VOCs) such as those found in school laboratories, marking pens, cleaning agents, disinfectants, air fresheners, paints, and solvents.

- **Significant asthma morbidity**—indications that a person’s health, education, or quality of life is being negatively impacted by an asthma condition as evidenced by a record of repeated absences from class or school because of asthma; occurrence of day or nighttime asthma symptoms; or school health office visits, emergency department visits, or hospitalizations because of asthma.

- **Tobacco-free school policy**—a policy that prohibits all cigarette, cigar, and pipe smoking, and all chewing tobacco use by students, faculty, staff, and visitors in school buildings, on school grounds, in school buses or other vehicles used to transport students, and at off-campus, school-sponsored events. This is one element of a comprehensive policy that should also address tobacco-use prevention education, advertising of tobacco products, referral of students to a tobacco-use cessation program, communication and signage requirements, and enforcement procedures.

- **Trigger**—an allergen, irritant, infection, or behavior that can stimulate an asthma episode.

Asthma is a leading cause of school absenteeism nationwide, causing an estimated 14 million missed school days each year, or about 2.5 days for each student with asthma. In addition, the average U.S. child with asthma has been shown to suffer 20 days of restricted physical activity per school year.

Students whose nighttime sleep is disrupted by asthma symptoms can experience lack of concentration, mood swings, poor recall memory, and greater difficulty with school work. Additionally, children with asthma sometimes suffer from depression, low self-esteem, decreased confidence, and feelings of
Asthma and the Olympics

At least one in six athletes representing the United States in the 1996 Olympic Games had a history of asthma, a larger proportion than in the general U.S. population. Nearly 30 percent of those who had asthma or took asthma medications won team or individual medals in their Olympic competition, faring as well as athletes without asthma.

Exercise is beneficial to both physical health and emotional well-being. Even if they are not striving for an Olympic medal, almost all people with EIA should be able to exercise to their full ability with appropriate diagnosis and treatment.

American Academy of Allergy, Asthma and Immunology

inadequacy and helplessness. Some children with uncontrolled asthma have a higher incidence of grade failure.

The good news is that proper medical diagnosis and management can control asthma. A student with asthma may experience minimal or no symptoms by diligently following an individualized asthma action plan prepared by a health care provider or school nurse. When their illness is managed effectively, students with asthma can safely participate in all school activities, including recess and physical education.

Schools that receive the necessary resources and support can do numerous things to help students with asthma. They can:

- identify and keep track of students who currently have asthma;
- establish ongoing partnerships of support and communication with students’ families and health care providers;
- prepare, maintain, and implement an asthma action plan for each student with significant asthma morbidity;
- help students with asthma learn about the disease, the importance of taking their prescribed medications, the skills necessary to self-administer these medications, the importance of staying physically fit and tobacco-free, how to avoid asthma triggers, and what to do in a medical emergency;
- help students comply with their individual asthma action plans, such as by helping them monitor their lung function using a peak flow meter or by administering their prescribed medications;
- minimize students’ exposure to allergens and irritants, the common triggers of asthma; and
- be prepared to respond appropriately if someone experiences an acute asthma episode at school. These tasks do not distract school personnel from their primary mission of education. Instead, they are reasonable and necessary supports that can help reduce some students’ barriers to learning.

The planning process

The sample policy at the beginning of this section outlines the major elements of a plan for a comprehensive school asthma management program. The sections of this chapter that follow address each of the policy elements in more detail. Numerous useful resources can help school personnel plan a sound asthma program; contact information for many of these resources are listed at the end of this section.

A school nurse with the requisite knowledge and skills is usually the best person to take the lead in preparing a school asthma plan, and then to supervise its implementation by the school health program team. Some school districts employ a school physician consultant.
who could assist. Rather than approaching asthma management as a stand-alone program, CDC recommends that it be integrated within a coordinated school health program (CSHP). The coordinated school health program model is described in Chapter C: “General School Health Policies.”

A school health advisory council (also described in Chapter C), which should include community members, can provide valuable guidance in the development of a comprehensive asthma plan. In at least one state where many schools do not have a school nurse, district school health advisory councils have taken the lead in developing school asthma management programs.

Strong partnerships involving school staff, families, health care providers, and community agencies are essential. Across the nation, local and state coalitions have been working with schools to help support students with asthma. School leaders may wish to prepare a plan to address all chronic diseases instead of solely focusing on asthma. Students with Chronic Illnesses: Guidance for Families, Schools and Students is a helpful resource from several partner organizations of the National Asthma Education and Prevention Program (NAEPP) on issues common to students with asthma, allergies, diabetes, and epilepsy.

Evaluation

A sound school asthma management program incorporates evaluation activities that are designed to motivate school staff members to reliably implement the program, and to provide them with information they can use in making continuous program improvements. Useful indicators of a school asthma program include:

- the number of students in the district or school who are diagnosed with asthma;
Michigan State Board of Education
Policy on the Management of Asthma in Schools
(Adopted January 11, 2005)

The State Board of Education is convinced that the benefits of a clear school policy for asthma management can make a difference in school performance. Therefore, the Board recommends that each Michigan school and district establish asthma-friendly schools by implementing the following coordinated school health practices.

I. Establish asthma management and support systems to ensure asthma practices are communicated and coordinated in schools and that asthma program strategies and policies are annually evaluated, including:
   a. Coordination of asthma management activities by the School Health Program Coordinator.
   b. Individual asthma action plan forms in annual enrollment materials.
   c. Facilitation of communication among school staff that interact with children with asthma using a student list developed from enrollment materials and other existing sources.
   d. A system to make staff aware of school policy on acute and routine management of asthma, including information on signs of an asthma attack, asthma medication and administration, and emergency protocols for handling asthma exacerbations in "unusual" situations such as field trips.

II. Provide appropriate school health and mental health services for students with asthma, including:
   a. Procedures to obtain, maintain, and utilize written asthma action plans, signed by the child’s physician, for every student with asthma.
   b. A standard emergency protocol in place for students in respiratory distress if they do not have a written asthma action plan on site.
   c. Policies that ensure students have immediate access to asthma medications at all times and that allow students to self-carry and self-administer asthma medications, inhalers, and Epi-Pens, as prescribed by a medical professional and approved by parents or legal guardian.
   d. Smoking prevention and cessation programs for students and staff.
   e. Case management for students with frequent school absences, school health office visits, emergency department visits, or hospitalizations due to asthma.
   f. Access to a consulting health professional for the district to address asthma questions.

III. Provide asthma education and awareness programs for students and staff, including:
   a. Education programs for students with asthma on asthma basics, self-management, and emergency response.
b. Professional development training for all school staff on asthma basics, asthma management, trigger management, and emergency response including classroom teachers, physical education teachers, coaches, secretaries, administrative assistants, playground aides, principals, facility and maintenance staff, food service staff, and bus drivers.

c. Asthma awareness and lung health education as part of health education curricula and other curricula areas.

IV. Take actions to reduce asthma trigger exposure to promote a safe and healthy school environment by the development/adoptions of the following policies and practices:

a. A tobacco-free school policy that is 24-hours per day, 7 days a week, on all school property, in any form of school transportation, and at school-sponsored events both on and off school property.

b. Prevent indoor and outdoor air quality problems by implementing best practice policies for common issues such as: preventative maintenance on heating/cooling systems; construction and remodeling projects; bus idling and retrofitting; integrated pest management techniques and pesticide application notification; cleaning practices that address fumes, dust mites, and molds; chemicals and solutions storage; and the presence of warm-blooded animals in the classroom.

c. Limit student outdoor activity on high ozone and extremely cold days.

V. Provide students with asthma safe, enjoyable physical education and activity opportunities, including:

a. Full participation in physical activities when students are well.

b. Modified activities as indicated by student’s asthma action plan, 504 plan, or Individualized Education Plan (IEP).

c. Access to preventative medications before activity (as prescribed by their providers) and immediate access to emergency medications during activity.

d. Communication regarding student health status between parents, physicians, coaches, and physical education teachers.

VI. Coordinate school, family, and community efforts to better manage asthma symptoms and reduce school absences among students with asthma, including:

a. Obtaining written parental permission for school health staff and primary care providers to share student health information.

b. Communicating between all caregivers and providers including, but not limited to, a yearly update of the asthma action plan.

c. Educating, supporting, and involving family members in efforts to better manage students’ asthma.

d. Identifying and utilizing available community resources such as local asthma coalitions and community programs, community health care providers, and social service agencies.

Some people do not want schools to address health issues, which they consider extraneous to the core academic mission of education. In response, those who support schools’ involvement in promoting health often stress the following points:

- **Quality school health programs support academic achievement goals.** Because students’ health problems interfere with their ability to learn, a modern school health program includes activities designed to improve students’ academic performance and reduce the frequency of health-related tardiness and absences, both of which are barriers to student learning.34

- **Schools share legal responsibility for students’ health.** Legislation and case law have established that schools must provide certain accommodations and services for students with special health care needs to ensure their equal access to education, and that schools must help contain contagious diseases, immunize students, administer medication, ensure the confidentiality of student health records, and address other health-related issues.

- **Schools have always had a public health role.** As public institutions, schools have a long history of providing health education, health services, and healthful physical environments.

- **Schools are a valuable setting for prevention and early intervention services.** During school hours, students are in direct sustained contact with professionals who, with appropriate preparation and support, can recognize and deal with emerging and chronic health and social problems.

- **Schools do not have to go it alone.** Schools cannot and should not be expected to address serious health and social problems by themselves. Often willing to help are hospitals, community health centers, private health care providers, and local chapters of the American Lung Association and the Asthma and Allergy Foundation of America. Asthma management in particular is most effective when parents, families, and health care providers work in partnership with each other.

- the number of schools days students miss because of asthma attacks or asthma-related visits to health care providers;

- the amount of class time students miss for any reason related to asthma, such as visits to the school’s health room;

- the number and type of individual student plans completed and updated;

- documentation of asthma attacks at school and the school’s responses to them;

- the number of asthma-related emergency calls from school and the number of unplanned asthma-related student visits to a health care provider, hospital emergency room, or acute care clinic;

- school ventilation system maintenance and repair logs, pesticide application logs, and other records of hazardous chemical storage and use; and

- survey results of parent and student satisfaction with the school’s asthma management program.
Resources for planning and policymaking

➢ State or local education agencies or public health departments might have data or other resources to assist schools in program planning.

➢ The Division of Adolescent and School Health (DASH) within the Centers for Disease Control and Prevention (CDC) offers numerous free resources that provide practical guidance on the development of high-quality school asthma programs and coordinated school health programs. In addition to fact sheets, slide presentations, and links to other organizations’ asthma materials, key publications include:

  • *Strategies for Addressing Asthma Within a Coordinated School Health Program*, which can be found at [www.cdc.gov/HealthyYouth/asthma/publications.htm](http://www.cdc.gov/HealthyYouth/asthma/publications.htm).

  • *The School Health Index for Physical Activity, Healthy Eating, and a Tobacco-Free Lifestyle: A Self-Assessment and Planning Tool*. This document, which is currently being updated to address asthma, can be found at [www.cdc.gov/HealthyYouth/SHI/index.htm](http://www.cdc.gov/HealthyYouth/SHI/index.htm).

➢ The National Asthma Education and Prevention Program (NAEPP) offers numerous resources that are useful to program planners. These materials can be obtained by calling (301) 592-8573, or they can be downloaded at [www.nhlbi.nih.gov/health/prof/lung/index.htm](http://www.nhlbi.nih.gov/health/prof/lung/index.htm). Key materials include:


  • *How Asthma-Friendly is Your School?* is a checklist in English and Spanish that parents, teachers, and school staff can use to pinpoint specific areas that may cause problems for children with asthma.

  • The *School Asthma Education Slide Set* is a two-part PowerPoint™ presentation that presents background information about the growing problem of asthma and outlines five goals important for good asthma management in school settings.

➢ The U.S. Environmental Protection Agency (EPA) hosts the Healthy School Environments Web Portal at [www.epa.gov/schools](http://www.epa.gov/schools). This comprehensive resource is designed to help schools address environmental health issues, including asthma, and provides links to information resources developed by federal agencies, state and local governments, and non-governmental organizations.

➢ The American Lung Association’s Asthma-Friendly Schools Initiative, a partnership with the American Academy of Pediatrics (AAP), the National Association of School Nurses (NASN), and the National Education Association Health Information Network (NEA-HIN), helps communities plan and implement comprehensive school asthma management programs. The extensively pilot-tested *Asthma-Friendly Schools Toolkit* includes forms, checklists, sample letters, presentations, position descriptions, and sample policies. Call 1-800-LUNG-USA to order the free toolkit on CD-ROM, or go to [www.lungusa2.org/asi/index.html](http://www.lungusa2.org/asi/index.html) to download the entire kit.
The National School Boards Association (NSBA) operates the School Health Resource Database, which contains a large number of sample school district policies and support documents. An “Asthma in Schools 101” packet, which contains facts about asthma, articles about best practices and policies, and references to additional sources of information, is available at no charge by calling (703) 838-6722, sending an e-mail to schoolhealth@nsba.org, or visiting www.nsba.org/schoolhealth.


The American School Health Association (ASHA) published an issue of Health in Action, their journal for school health practitioners of all disciplines, on asthma in the school community. Order a copy at www.ashaweb.org.

The National Education Association Health Information Network (NEA-HIN) operates an Asthma and Schools website (www.asthmaandschools.org) that consolidates information about asthma-related resources for school personnel working with children in grades K to 12. The searchable database links to educational materials, medical information, other websites, and other resources useful for anyone who works in an elementary or secondary school.

The Center for Health and Health Care in Schools (CHHCS) offers information, key journal articles, and other resources at www.healthinschools.org/sh/asthma.asp.


CDC’s National Center for Environmental Health (NCEH) offers numerous resources, including a list of effective school asthma health interventions, at www.cdc.gov/asthma/default.htm.

The Allergy and Asthma Network/Mothers of Asthmatics (AANMA), a national nonprofit network of families, offers information on policy issues at www.aanma.org/schoolhouse.

Asthma Moms, a New York state nonprofit organization, offers an extensive list of resources and links to asthma-related website information at www.asthmamoms.com.

The Allies Against Asthma operates an online, interactive database at http://asthma.umich.edu; the extensive database includes asthma educational materials, resources to help implement intervention programs, evaluation and survey instruments, and materials to assist community coalitions.

Asthma UK offers an online “school pack” of information about coping with asthma in schools at www.asthma.org.uk/about/resource07.php.

Selected state resources

The Missouri School Boards Association (MSBA), in collaboration with the state health department and other health professionals, has developed a complete school asthma manual. Flowcharts that reflect the day-to-day asthma situations faced by school
nurses lead to more than 100 practical documents and forms. The binder’s contents are also available on a CD-ROM that includes a tutorial. For more information call MSBA at (800) 243-3376, or access it online at www.health.state.mo.us/asthma/Publications.html.

➤ Several California agencies collaborated on developing *Guidelines for the Management of Asthma in California Schools: A Comprehensive Resource for School Health and Other Personnel to Address Asthma in the School Setting*, which includes health care procedures and sample forms. It is online at www.caasthma.org/pdf/dhsASTHMAguidelinesFINAL.pdf.

➤ The Minnesota Department of Health and the Minnesota Department of Children, Families and Learning jointly developed the *Minnesota School Health Guide* to help school personnel and community leaders implement effective school health programs. The comprehensive resource book contains basic information, guidelines, and recommendations. To obtain a copy, phone (651) 215-8960 or visit www.health.state.mn.us/divs/fh/mch/schoolhealth/guide.html.

The Minnesota Department of Health’s Asthma Program has several other school-focused resources online at www.health.state.mn.us/divs/hpcd/cdee/asthma/School.html, including the *Managing Asthma in Minnesota Schools Manual* with an extensive list of sample forms, several slide presentations, and a six- to eight-hour training program.


➤ The Asthma Initiative of Michigan outlines actions each school staff member can take to help students with asthma at www.getastmahelp.org/intro_schools.asp.

➤ The American Lung Association of Washington developed *Asthma Management in Educational Settings* (AMES) for school nurses, which is available at www.cshcn.org/resources/AMES.cfm.
2. Education and Staff Development About Chronic Health Conditions

This section addresses three major points: 1) all students should receive basic health education about common chronic diseases and conditions; 2) schools can help provide educational reinforcement for students with chronic illness on how to keep themselves healthy; and 3) all students and school personnel must be able to recognize symptoms of a serious medical emergency and know how to respond effectively.

Sample Policy for a School Asthma Program:

EDUCATION ABOUT CHRONIC HEALTH CONDITIONS. Comprehensive health education for all students in grades kindergarten through 12 shall incorporate instruction about common chronic health conditions including asthma, serious allergies, diabetes, and epilepsy; how students can support classmates with such conditions; and critical steps anyone should take in a medical emergency. Such lessons shall be taught at appropriate grade levels, be consistent with state and national health education standards, and be coordinated with other components of the school health program as well as with health education programs in the community.

Education on human body systems and the chronic health conditions that affect the normal functioning of those systems shall also be integrated into other appropriate subject areas such as science and physical education.

The school board encourages teachers to help interested students become involved with community activities and events that promote public awareness of chronic health conditions.

EDUCATIONAL REINFORCEMENT FOR STUDENTS WITH CHRONIC HEALTH CONDITIONS. The school nurse/appropriate school staff members shall supplement health care providers’ efforts to give students with chronic health conditions the knowledge and skills necessary to adhere to self-care disease management plans.

SCHOOL STAFF AWARENESS ABOUT COMMON CHRONIC HEALTH CONDITIONS. All school personnel shall participate in a professional development program regarding serious chronic health conditions common among school-aged children and youth, including asthma, serious allergies, diabetes, and epilepsy. Staff will be able to provide appropriate support for students with chronic health conditions and to respond appropriately to asthma episodes and other health emergencies.
Staff professional development programs shall address:

- basic information about chronic health conditions;
- procedures typically used to manage or control students’ asthma, diabetes, and other chronic health conditions while at school;
- strategies to minimize students’ exposure to allergens and irritants;
- applicable laws and policies regarding administration of medications to students and protection of the confidentiality rights of students and families;
- orientation to early warning signs and symptoms of potentially serious medical emergencies, including asthma episodes, severe allergic reactions (anaphylaxis), diabetic coma (ketoacidosis), and epileptic seizures; and
- emergency response policies and procedures.

Discussion

Basic awareness about asthma and other chronic health conditions can fit easily within the health education program all students receive. (The essential elements of comprehensive health education are described in Chapter C, “General School Health Policies.”) If lessons on common chronic illnesses are not already part of the curriculum, supplementary materials can be used to teach such lessons. For example, the National Heart, Lung, and Blood Institute (NHLBI) offers a free kindergarten to sixth grade curriculum kit, titled *Asthma Awareness: Curriculum for the Elementary Classroom*, which includes activity sheets and test items; and the American College of Chest Physicians offers the *Educational Guide on Lung Health for Elementary School Students*, which includes handouts and activity sheets.

Researchers note that some school curricula cover basic anatomy but do not address symptoms of diseases, chronic illnesses, or behaviors that can interfere with or alter normal function. For example, students might learn about the respiratory system but not that asthma is an episodic disease of inflamed and contracted airways or the ways in which secondhand smoke and air pollution harm human lungs. Students need to learn about important health issues commonly encountered in daily life and to practice the skills required to care for themselves, each other, and their future families.

Asthma topics can also fit into additional subject areas. For example, in physical education class students could learn that many people with asthma experience exercise-induced bronchospasms and how to help prevent this kind of asthma episode. The NHLBI kit includes suggestions for asthma-related activities in math, art, and language arts classes. The National Institute for Environmental Health Sciences (NIEHS) offers a large selection of educational materials, many of which are standards-based, that are designed to expose students of every grade level to complex environmental health concepts.

Because cigarette smoking is known to precipitate serious asthma episodes, and may actually cause asthma to develop, schools must do all they can to prevent tobacco use among young people, especially students with asthma. Chapter F, “Policies to Discourage Tobacco Use,” discusses effective tobacco-use prevention education, tobacco-free schools policies, and cessation programs for students who want to quit smoking.
State Health Education Policies

As of February 2005, NASBE’s online state school health policy database at www.nasbe.org/ healthyschools included policies from 11 states that specifically call for either asthma awareness or chronic health conditions to be addressed in school curricula. Each state takes a different approach:

- Alabama’s course of study outlines instruction on chronic illness at the elementary and high school levels.
- Arizona includes asthma education in its health education standards for grades 1 to 3.
- Illinois’ state goals call for students to receive instruction on chronic illnesses at the high school level.
- The Michigan State Board of Education recommends that each school and district provide asthma awareness and lung education as part of health curricula and other curriculum areas.
- Mississippi’s curriculum framework calls for instruction on chronic diseases at the elementary, middle, and high school levels.
- Missouri’s curriculum framework states that students in grades 5 to 8 should receive instruction on environmental impacts on health that cause specific conditions such as asthma.
- New Hampshire’s health education curriculum guidelines call for asthma education in elementary, middle, and high school grades.
- New Jersey’s health education standards encourage that chronic disease be discussed at every grade-level cluster (K to 2, 3 to 4, 5 to 6, 7 to 8, 9 to 12) and that specific information on asthma be provided to students in grade 6.
- North Carolina’s course of study specifies that districts provide instruction about asthma at the sixth grade level.
- South Carolina’s health and safety standards detail that students should receive instruction on asthma awareness at the middle and high school levels.
- Washington’s academic learning requirements specify that students receive instruction on non-communicable diseases such as asthma, though no grade is specified.

No state yet requires all school personnel to participate in professional development programs on asthma awareness, asthma management, or asthma emergency response policies and procedures. However, a New Jersey statute specifies that opportunities to receive asthma education be offered annually to all members of the teaching staff.

Educational reinforcement for students with chronic health conditions

When a young person’s chronic condition is first diagnosed, that person’s health care provider should begin to provide education and ongoing support about managing the condition. Schools, in partnership with health care providers and families, can help reinforce the knowledge and skills students need to manage their condition and motivate them to better comply with the daily requirements of their asthma action plan or other individual disease management plan.
State of North Carolina: Healthy Living Education, Grade 6

COMPETENCY GOAL 1: The learner will direct personal health behaviors in accordance with own health status and susceptibility to major health risks.

Objectives:

1.01 Explain health risks for age group.
1.02 Accurately describe the incidence of high-risk behaviors for age group.
1.03 Appraise own health behaviors.
1.04 Relate the signs of asthma.
1.05 Explain methods by which asthma can be controlled.

Students with asthma have been found to benefit from this kind of specialized educational support. Studies show decreased rates of asthma attacks and hospitalization among children who take part in school-based asthma education programs. Essential concepts that students in such classes should learn include:

- basic facts about asthma;
- the importance of staying physically fit and tobacco-free;
- the importance of complying with instructions for taking prescribed medications;
- how to monitor their condition and to self-administer their medication;
- how to prevent asthma episodes and reduce their exposure to environmental triggers; and
- what to do when an asthma episode occurs.

An important goal is to help students with a chronic illness learn to actively manage their condition and not let it unnecessarily interfere with their ability to participate in school activities. In particular, students with asthma need to appreciate that they can safely participate in sports activities when their asthma is under control.

Several organizations have developed high-quality programs designed to help children and adolescents with a serious illness control their condition. For example, the STARBRIGHT Foundation has produced an interactive educational game, Quest for the Code, to help young people aged 7 to 15 learn to manage asthma; and the American Lung Association produced Open Airways for Schools, an award-winning elementary-school education program for children with asthma: participants have been shown to have fewer and less severe asthma attacks, improved academic performance, more confidence in their ability to manage their asthma, and greater influence on their parents’ asthma management decisions.

School nurses, guidance counselors, or parent volunteers can use these kinds of targeted lessons with small groups of students, although they may need to adapt them to the cultural beliefs and practices of specific populations. Additional resources—some available in Spanish—are listed at the end of this section.
School staff professional development

Classroom teachers need to understand basic information about asthma and other common chronic health conditions so that they can help identify undiagnosed cases and provide effective instruction and appropriate support to students with special needs. For example, teachers should know that severe wheezing needs to be attended to promptly; that a student taking asthma medications might sometimes feel drowsy or tired; and that other possible side effects of asthma medications include nervousness, nausea, and hyperactivity.40

All teachers and classroom aides should learn to follow routine practices designed to minimize their pupils’ exposure to allergens and irritants. Such practices include reducing dust-catching clutter, cleaning chalkboards when students are not present; avoiding or minimizing the use of perfumes, hair sprays, marking pens, cleaning agents, and other items with strong chemical odors; properly storing cleaning agents and school laboratory chemicals; not keeping furred or feathered animals in classrooms; and keeping students indoors on days with elevated air quality alerts.

All school personnel must know how to respond if someone experiences a medical emergency such as an asthma attack or diabetes-related crisis. Along with classroom teachers, personnel who have frequent contact with students include administrators and office staff; physical education instructors, athletic trainers, and coaches; guidance counselors, school nurses, and health assistants; school bus drivers; media specialists; foodservice personnel; and housekeeping, janitorial, and maintenance staffs. Volunteers such as playground and cafeteria monitors and field trip chaperones also need to be familiar with critical emergency procedures. Clearly written guidelines should supplement orientation sessions on responding to medical crises.

Students with chronic illnesses sometimes feel different from other students and could become embarrassed or withdrawn about the disruption to school activities caused by a health crisis. Some experience depression, low self-esteem, lack of confidence, and feelings of inadequacy and helplessness.

When school nurses with large workloads cannot provide professional development classes for school staff members, community resources can often assist at little or no cost. Such resources might include the local health department, hospitals, community health centers, individual health care providers, asthma coalitions, and local chapters of the American Lung Association, the Asthma and Allergy Foundation of America, or similar national organizations.

Resources to supplement general health education


- The American College of Chest Physicians produced the Educational Guide on Lung Health for Elementary School Students in English and Spanish. Each version includes lessons, handouts, activities and resources that can be incorporated into health, science, or social science classes or used in after-school activities. They are available at www.chestnet.org/education/patient/guides.

- The Minnesota Department of Health produced Asthma Education: An Integrated Approach, a manual to help teachers incorporate asthma education into everyday classroom curricula in math, science, and language arts. The manual contains background
information about childhood asthma, lesson plans, camera-ready worksheets, and a comprehensive resources section. Download it at www.health.state.mn.us/divs/hpcd/cdee/asthma/School.html.

- On its “Asthma and Schools” website, the National Education Association Health Information Network (NEA-HIN) consolidates information about asthma-related resources for school personnel working with grades K–12. The searchable database, which links to educational materials, medical information, other websites, and other resources, can be found at www.asthmaandschools.org.

- The National Jewish Medical and Research Center offers the online Asthma Wizard, which has kid-friendly information and games in English and Spanish at www.njc.org/wizard/intro.html.

- A PBS Kids document titled Hooray for Health! is an early childhood-level health curriculum guide for teachers, after-school care providers, and school nurses that includes a unit on asthma. Family activity sheets are available in English, Spanish, Chinese, Tagalog, and Vietnamese. Go to http://pbskids.org/arthur/parentsteachers/lesson/health.

- The National Institute of Environmental Health Sciences (NIEHS) has sponsored the development of a wide variety of educational materials for students and teachers at every grade level. Many of the materials on topics such as environmental health hazards and risk management are aligned with state and national science and health education standards. For a complete list, visit www.niehs.nih.gov/science-education/home.htm.

- PBS Teacher Source developed a lesson plan on environmental health that allows high school students to act as “medical scene investigators.” The plan can be found at www.pbs.org/pov/pov2002/thesmithfamily/classroom.html.

### Resources for educating young people with asthma

- The STARBRIGHT Foundation School Asthma Program provides schools with the free STARBRIGHT Asthma CD-ROM Game: Quest for the Code®, which was developed with the input of an advisory team of national pediatric asthma experts. The theory-based game, available in English or Spanish at www.starbright.org/projects/asthma, is accompanied by a parent guide and school guide.

- The American Lung Association (ALA) has several programs and strategies to educate people of various ages about coping with lung disease, including Open Airways for Schools, an elementary-school education program for children with asthma that has been proven effective. ALA material can be obtained by calling 1-800-LUNG-USA or visiting www.lungusa.org/asthma/index.html.

  ALA also operates Asthma Busters at www.asthmabusters.org, which is a free online club for children aged 7 to 14 who have asthma.

- The Asthma and Allergy Foundation of America (AAFA) offers free information on asthma and allergies, including numerous education programs for parents, caregivers, young children, and teens in English and Spanish. This information can be obtained by calling 1-800-7-ASTHMA, sending an e-mail to info@aafa.org, or visiting www.aafa.org.

- Allergy and Asthma Network/Mothers of Asthmatics (AANMA) is a national non-profit network of families that offers numerous educational resources for families, children, and youth in English and Spanish at www.aanma.org.

- The University of Virginia Children’s Medical Center offers the interactive Asthma Tutorial for Kids and Teens at
The Child Dynamics Research and Charitable Foundation operates the Asthma Explorers’ Club, an educational website designed to be innovative, fun, and memorable. Go to www.asthmaeclub.com.

The Consortium on Children’s Asthma Camps coordinates the activities of asthma camps nationwide. Information on the camps can be found at www.asthmacamps.org.

Resources for staff professional development

The Asthma and Allergy Foundation of America (AAFA) offers Meeting-in-a-Box: Asthma Management at School (in English or Spanish), a presentation used to educate school staff on asthma triggers, symptoms, treatments, and prevention methods. For more information call 1-800-7-ASTHMA, send an e-mail to info@aafa.org, or visit www.aafa.org.

The American Lung Association (ALA) offers a variety of health education programs, from smoking prevention and cessation programs to asthma education to indoor air quality programs in schools. To contact a local chapter, call 1-800-LUNG-USA or visit www.lungusa.org.

The American School Health Association (ASHA) devoted a 2004 issue of its quarterly publication Health in Action to how school staff can assist students with asthma. To order a copy, call (800) 445-2742, e-mail asha@ashaweb.org, or visit www.ashaweb.org.

Resources on other chronic diseases


The Food Allergy and Anaphylaxis Network (FAAN) has developed School Guidelines for Managing Students with Food Allergies and also offers the School Food Allergy Program, which is a comprehensive, multimedia kit that includes a video, an EpiPen® trainer, a poster, and a binder filled with information and standardized forms. Go to www.foodallergy.org/school.html.

The Head Start Information and Publication Center (HSIPC) offers an online training guide for Head Start staff members called Caring for Children with Chronic Conditions at www.headstartinfo.org/publications/children_cc/ccccont.htm.
Policymakers need to ensure that school staff members recognize, assess, and appropriately accommodate the unique needs of students with asthma and other chronic illnesses. Such students might need, for example, extra help to make up time lost from school because of illness, assistance in following medical instructions, or modifications to physical education activities. Schools can use several types of planning processes to determine what services and accommodations are appropriate for students with chronic health conditions.

**Sample Policy for a School Asthma Program:**

**INDIVIDUAL PLANS FOR STUDENTS WITH CHRONIC HEALTH CONDITIONS.** Each school district/school, after consulting with the school nurse, the school health council, and the school physician consultant/a licensed health care provider, shall develop and implement planning procedures for addressing the needs of students with chronic health conditions. The procedures shall be consistent with established standards of care for chronic health conditions, state and federal laws regarding students with disabilities, and state and federal laws regarding health record confidentiality and appropriate information sharing. The procedures shall be designed to:

- systematically identify and monitor students who have chronic health conditions that can affect their academic performance or who have a record of experiencing health problems at school;

- determine on a case-by-case basis and document in a periodically updated written plan, prepared in consultation with the students’ parents/guardians and health care provider(s), the educational placement, health services, and special accommodations that students with chronic health conditions need to participate in school and school activities and maintain optimal health;

- share information about individual students’ educational support needs and the emergency response procedures that their conditions may require with appropriate school staff on a “need to know” basis, with due concern for medical confidentiality and respect for parents' and students’ privacy rights; and

- ensure that school personnel receive the professional development training, support, and supervision necessary to implement the procedures with fidelity.
Discussion

There can be no one-size-fits-all plan to address the needs of every student with a chronic health condition because each case is unique. For example, a student with asthma might primarily need some modifications to physical education class activities; a student with diabetes might need daily help to comply with medical instructions; and a student with cancer might miss school frequently and require extra tutoring to catch up with class assignments.

Identification of students with chronic illnesses

The first step to ensure that students with chronic illnesses are provided the assistance they need to stay in school and be attentive in class is to know who they are. It is particularly important to identify and monitor students who have a significant record of health problems so that staff members are prepared to respond in case of a medical emergency.

Parents or guardians are often the first to bring a child’s chronic health condition to the school’s attention. The health assessment forms that schools commonly ask parents or guardians to complete when a child is enrolled should include questions about diagnosed illnesses and specific symptoms of asthma, diabetes, and other chronic diseases that might never have been formally diagnosed by a health care provider. Most schools provide opportunities for the parents/guardians to update student health records and medication authorization forms at least annually.

School health personnel can often detect students with chronic health conditions by reviewing health room visit logs or school attendance records. Teachers’ observations are also crucial, as are those of others who regularly interact with students, such as office staff, bus drivers, maintenance workers, and cafeteria and playground monitors, and are thus in a position to alert school health staff to students who experience persistent health problems.

State Policies for Identifying Students with Asthma

As of February 2005, NASBE’s online state school health database at www.nasbe.org/healthyschools contains summaries and links to the following state policies regarding identification of students with chronic health conditions or asthma:

- Connecticut requires that a licensed school health professional conduct a chronic disease health assessment, including an asthma assessment, for each pupil enrolled in the public schools, once in the sixth or seventh grade, and again in the tenth or eleventh grade.

- Kansas, Maryland, and North Carolina require students to receive a physical examination or health appraisal before they enroll in school, though screening for asthma is not specifically required.

- Arkansas, New Jersey, Pennsylvania, and Rhode Island require students to receive a physical examination or health appraisal before they enroll and at later intervals, though screening for asthma is not specifically required.

- Tennessee has written guidelines recommending that students with acute or chronic health conditions receive a health assessment from a registered nurse.
Should all students be screened for asthma?

Some researchers are investigating the benefits and challenges of implementing extensive case detection efforts in schools to identify students with cases of undiagnosed asthma, similar to the way many schools screen students for vision or hearing problems. However, programs to systematically screen entire school populations for asthma are not yet considered adequately feasible, reliable, or cost-effective by the CDC, the American Academy of Pediatrics, or the American Lung Association.41

CDC advises school health staff to:42

- focus on case identification using existing records and forms, particularly for those students whose asthma is not well controlled;
- improve systems for collecting health information, if needed;
- provide individual case detection and refer students to primary care providers or asthma specialists when those with asthma have out-of-control symptoms or when other students exhibit symptoms that suggest asthma;
- help ensure that students with asthma are receiving good-quality medical care; and
- collaborate with community partners to ensure adequate care and case management, as needed, to reduce morbidity.

Accessing health care

If school health professionals suspect that a student has an undiagnosed chronic illness, they should notify the student’s parents or guardians and suggest the student visit a health care provider. If necessary, school nurses can work with the health care provider to develop an appropriate disease management plan.

Although parents/guardians have the ultimate responsibility to care for their children, some have difficulty accessing medical care, paying for it, or obtaining other needed support. Their ability to navigate the health care system can directly affect how well a child’s illness is controlled during school hours. School social workers, health personnel, and guidance counselors can help families overcome barriers to health care by alerting them to opportunities for assistance, such as the State Children’s Health Insurance Program (SCHIP—see box above). Staff members can also refer family caregivers to community health centers and other local agencies and support groups.43

Sometimes the school itself will need to provide appropriate basic health services. Various ways to organize and manage school health services are addressed in the next section.

An array of individual student plans

Most schools are familiar with a variety of flexible planning mechanisms that can help them manage the individual needs of students with chronic health conditions. Several commonly used types of plans are summarized in the box on the next page and described in more detail below.
### Common Types of Individual Student Plans

Following are general descriptions of major types of individual plans commonly used to respond to the needs of students with chronic health conditions. District and school procedures—and the specific condition of each student—will determine which kind of plan or combination of plans is necessary. Each type of plan needs to be developed in close partnership with family caregivers, primary health care providers, and the students themselves.

<table>
<thead>
<tr>
<th>Plan</th>
<th>Description</th>
<th>Developed by…</th>
<th>For use by…</th>
<th>Type of record</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asthma Action Plan</strong></td>
<td>Provides guidance on preventive measures, symptoms of distress, instructions for medication and other health-care procedures, emergency response steps, and emergency contact information</td>
<td>Health care provider or school nurse</td>
<td>Person with the disease; family members; selected school personnel as appropriate; other caregivers</td>
<td>Personal record and confidential school health record</td>
</tr>
<tr>
<td><strong>Diabetes Medical Management Plan</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other disease management plans</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Quick-reference emergency action plan</strong></td>
<td>Provides clear instructions about steps to take in a health emergency</td>
<td>School nurse or health team</td>
<td>All school personnel</td>
<td>School health record or generic document</td>
</tr>
<tr>
<td>(can be individualized or generic)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Individual health care plan (IHCP)</strong></td>
<td>Describes health care interventions to guide school nursing services</td>
<td>School nurse</td>
<td>School health personnel; other school staff on a “need to know” basis</td>
<td>Confidential school health record</td>
</tr>
<tr>
<td><strong>Individual education plan (IEP)</strong></td>
<td>Describes necessary special education and related services for students with learning disabilities</td>
<td>Special education staff or IEP team</td>
<td>Special education staff, school health personnel, and other school staff as appropriate</td>
<td>Confidential school health record</td>
</tr>
<tr>
<td><strong>Accommodations plan</strong></td>
<td>Describes necessary accommodations for students with disabling conditions that affect major life activities</td>
<td>School nurse or other school official</td>
<td>Selected school personnel on a “need to know” basis</td>
<td>Confidential school health record</td>
</tr>
<tr>
<td><strong>Section 504 plan</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A student’s specific health and learning issues and the school district’s standard operating policies and procedures will determine which type of plan or combination of plans, and which services are necessary. The role of policymakers is to ensure that assessment and planning processes are institutionalized and conscientiously implemented by well-prepared and well-supported staff.

**Individual disease management plans**

Chronic health conditions often can be kept under control with proper management. Medical best practice guidelines for asthma, diabetes, and other chronic illnesses recommend that health care providers prepare individual disease management plans to help patients and family caregivers minimize symptoms and prevent the disease from getting worse. Though usually not developed specifically for use in schools, these disease management plans can be incorporated into schools’ plans for accommodating students’ health care needs.

An asthma action plan is a tailored, “user-friendly” disease management plan that is designed to help a person with asthma keep the condition under control. A plan typically includes guidelines concerning daily disease management activities that are tailored to an individual’s particular diagnosis, including airflow monitoring procedures, a list of prescribed medications with instructions about dosages and timing, specific triggers to avoid, signs and symptoms of an oncoming asthma episode, and steps to take if an asthma episode occurs. An asthma action plan is usually prepared by the student’s health care provider, but sometimes the school nurse will have to take the lead on assembling it (several organizations listed as resources at the end of this section offer free templates).

Similarly, an individualized diabetes medical management plan provides practical guidance on maintaining a person’s blood glucose level within an individually determined target range. Consult the publication *Helping the Student with Diabetes Succeed: A Guide for School Personnel* from the National Diabetes Education Program for guidance on preparing such a plan.

A school nurse, paraprofessional, or other designated school staff member might be called on to help the student perform some of the tasks outlined in a disease management plan. However, an important goal for young people with a chronic illness that can be only managed, not cured, is to learn to exert active control over the disease. A mature, attentive student who has learned the necessary skills should be encouraged to follow disease management instructions without help. Specific tasks can be turned over to the student as soon as he or she is ready—and willing—to exercise the responsibility. Such a determination ought to be made jointly by the school nurse and the student’s parents/guardians and health care provider. School personnel should be ready to provide guidance and support as necessary, but in any case they must remain prepared to assist in an emergency.

**Quick-reference emergency action plans**

Every responsible adult in a school needs to know what to do if a student with a serious chronic illness experiences a medical crisis. In many schools, nurses prepare quick-reference emergency action plans (also called individual emergency care plans) for students with chronic illnesses, which summarize the crisis-response procedures contained in individual disease management plans. Emergency plans should provide instructions that are clear, specific, and easily understood; such as: “If the student is unconscious, call 911.” Such plans should also include the student’s emergency contact information.

Another type of emergency action plan provides general guidance not specific to an individual student. In its *Asthma-Friendly Schools Toolkit*, the American Lung Association provides a model asthma emergency protocol for children with asthma who do not have their own emergency plan. The emergency protocol can be posted on bulletin boards throughout a school.
Individual health care plans

A key responsibility of the school nurse is to develop an individual health care plan (IHCP, also known as an individual health plan, nursing care plan, student services plan, or student medications plan) for each student with a significant health problem. An IHCP provides specific instructions to school health personnel about managing a student’s health condition.

The medical elements of an IHCP might already have been determined by a primary health care provider and written in a student’s individual disease management plan. However, in addition to addressing the student’s physical care needs, an IHCP should also address other important nursing care issues such as the student’s self-esteem, the student’s adherence to health care instructions, or an observed lack of understanding about the disease by the student or the student’s family.

Schools can request that parents/guardians provide a copy of a student’s asthma action plan or other disease management plan so its information can be incorporated into an IHCP. Other sources of information for an IHCP include records of school health office visits, medical authorization forms, physical examination results, and interviews with the family and the student. The student’s home caregivers and primary health care provider should be consulted when the plan is initially developed and when it is periodically updated. However, for students without a regular primary health care provider, the school nurse might have to develop an IHCP from scratch.

Ongoing communications among school personnel, families, and health care providers can help work out practical difficulties. For example, some asthma and allergy medications can interfere with a student’s ability to concentrate. A school nurse could talk with a student’s family and doctor about changing a medication regimen to help solve problems with sleep disruption, daytime sleepiness, or cognitive function.\(^{47}\)

Individual education plans

Students with chronic health conditions and who also have a learning disability, speech impairment, or other disabling condition might qualify for federally funded services under the Individuals with Disabilities Education Act (IDEA). Theoretically, a student with uncontrolled asthma that results in the need for specialized educational services, such as a need for extra tutoring or home-based education because of illness-related absenteeism, could qualify under the “other health impaired” category of IDEA if asthma causes “limited strength, vitality, or alertness and affects the child’s educational performance.”\(^{48}\)

School personnel must prepare an individual education plan (IEP) for each student who is deemed eligible under IDEA and is in need of special education or related services. The IEP must explain in detail how the school will satisfy the student’s unique academic needs. Schools must also provide health services for students whose IEP calls for such services.

Section 504 plans

Section 504 of the Rehabilitation Act of 1973 requires that public schools receiving federal funding provide “a free, appropriate public education in the least restrictive environment” to students with physical impairments that qualify under the law. (The Americans with Disabilities Act of 1990 extends these requirements to students in nonreligious private schools.) For students who qualify, accommodations must be made to eliminate barriers to their participation in school and school-related activities for which they would be eligible if they did not have a disability.\(^{49}\)

To be eligible for special accommodations under Section 504, students must have a disability that
State Requirements for Individual Student Plans

As of February 2005, NASBE’s online state school health policy database contains policies from 28 states that clarify the federal requirements regarding students with disabilities in need of special education services, or that call for other forms of documentation for students with chronic illnesses or health impairments:

- Sixteen states (AL, AR, DE, GA, HI, IN, KS, MI, MN, MT, NE, NV, NM, OR, WA, and WI) require school districts to develop an IEP for a child who suffers from a chronic health problem such as asthma. The IEP must include a statement of the special education and related services and supplementary aids and services the student needs or is being provided to satisfy the student’s unique academic needs.

- Seven states (AZ, IA, LA, MD, MS, RI, and VA) require school districts to create student individual health care plans (IHCPs), distinct from IEPs, that include statements of health services, testing results, and diagnoses from medical evaluations.

- Five of the above states (MD, NC, SD, TN, and WV) have policies for the development of both IEPs and IHCPs for students with chronic illnesses.

- New Jersey requires that every pupil who is authorized to self-administer asthma medications have an asthma treatment plan prepared by a physician.

interferes with their educational performance or that substantially limits their ability to engage in a major life activity such as eating, walking, or breathing. A student with persistent asthma who experiences breathing difficulties could be considered eligible.

A “Section 504 plan” (also called an accommodations plan) describes the modifications to school activities or the school environment that must be made and the educational programs and related aids and services that must be provided to meet the individual educational needs of students with disabilities. For example, a Section 504 plan might describe a safe classroom environment for a student with asthma who is allergic to animal dander, or it might require that teachers provide a student who is often absent because of poor health with extra time to complete school assignments.

The National Association of School Nurses (NASN) points out that implementation of Section 504 requirements varies greatly from state to state and the law’s implications for students with chronic health problems are often poorly understood. IDEA only targets students who have an educational disability, whereas the more broadly written Section 504 also applies to students with a health disability that significantly interferes with a major life function. NASN notes that parents of such students frequently require advocacy, information, and support in order to obtain the accommodations and services to which they are entitled by this federal law. Every school district is required to have a Section 504 compliance officer, and this person can help determine students’ eligibility for special accommodations.

Sharing information

School staff members often need to know about a student’s serious chronic health condition to make necessary educational accommodations and to remain vigilant to a potential medical emergency. For example, classroom teachers, physical education teachers, and coaches should probably be familiar with the full contents of students’ asthma action plans. Other school personnel such as bus drivers, maintenance staff, playground monitors, or field trip chaperones might only
State of Arizona: Policies and Procedures Concerning Pupils with Chronic Health Problems

A. The governing [local school] board shall adopt policies and procedures concerning pupils with chronic health problems in consultation with parents, teachers, and at least one health professional. The policies and procedures shall be designed to provide continuing learning for pupils with chronic health problems while they are absent from school and to provide for the integration of pupils with chronic health problems into the regular education program as much as possible. The policies and procedures shall include provisions for:

1. Homework availability to ensure that pupils with chronic health problems have the opportunity to keep up with assignments and avoid losing credit because of their absence from school.

2. Flexibility in physical education activity requirements so that pupils with chronic health problems may participate in the regular physical education program to the extent that their health permits.

B. For the purpose of this section, “pupils with chronic health problems” means:

1. Pupils who are unable to attend regular classes for intermittent periods of one or more consecutive days because of illness, disease, pregnancy complications, or accident but who are not homebound. The chronic health problem shall be certified by a person licensed under title 32, chapter 7, 13 or 17.

2. Pupils who have an infant with a severe health problem. The severe health problem of the infant shall be certified by a person licensed under title 32, chapter 7, 13 or 17.

Arizona Revised Statute 15-346

need to know measures they can take to decrease certain students’ exposure to asthma triggers and how they can assist a student who is experiencing an asthma attack.

This kind of information sharing within a school on a “need to know” basis is permitted by federal law. At the same time, school personnel must also respect parents’ and students’ reasonable expectations that student health records will be kept confidential to the greatest extent possible. Such information must never be shared beyond the school walls. Schools and individual staff members could be held liable for breaches of state medication confidentiality laws.

The federal government has two complex, intersecting laws addressing the confidentiality of school health information: the Family Educational Rights and Privacy Act of 1974 (FERPA) and the 2002 “Privacy Rule” regulations of the Health Insurance Portability and Accountability Act of 1996 (HIPAA). In addition, health-care professionals, including school nurses, must comply with standards of practice that are legally binding.

Several organizations listed as resources at the end of this section provide direction on developing sound policies and procedures for maintaining health record confidentiality. School leaders definitely need to consult with legal advisors on the confidentiality of student health records, particularly because regulations and formal guidance on the applicability of HIPAA in schools continue to evolve.

Once a policy on health record confidentiality is carefully drafted and adopted, all school personnel must be thoroughly oriented to its details. The
Position Statement on Confidentiality of Health Information

The National Association of State School Nurse Consultants (NASSNC) supports the rights of students to respect and privacy and believes all health information must be treated in a confidential manner, in accordance with state and federal law and ethical standards of nursing practice. Health and mental health information should be maintained confidentially and shared only when it is educationally relevant for a student’s academic progress, necessary to address a student’s potential emergency and health care needs, or essential to ensure the protection of other students and school personnel.

The association supports and promotes the development of a standardized school health records system, clear guidelines for local policies and procedures, and adherence to standards that protect student and family privacy. NASSNC also supports the development of a mechanism for internal communication of student health information to appropriate school staff, and external communication that encourages interagency collaboration and private partnerships as necessary to benefit the student.

All school staff members, health professionals, and paraprofessionals in all disciplines must be held accountable to the standard that protects student confidentiality.

National Association of State School Nurse Consultants

Policy should also be broadly disseminated to students and their families. Many schools include confidentiality policies in their student handbooks.

Physical Education and Outdoor Activities

Physical fitness is an important goal for all students. Accommodation plans for students with chronic illnesses should include a commitment to their full participation in physical education and outdoor activities, including sports and field trips. Some students restrict their activities unnecessarily, even though studies show that people with asthma and diabetes can partake in most physical activities when the illness is managed and controlled.52

The school nurse should meet with physical education teachers and coaches to review the individual needs of students and determine what special accommodations (such as the administration of pre-exercise medication to students with asthma) they might need. Physical educators trained in “Adapted Physical Education” programs can provide guidance on modifying physical activities and assessment standards for students with disabilities and chronic health conditions so that they can receive the same instruction as other students and, as much as possible, engage in the same activities.

The participation of these students in physical activities also depends on the social support, sensitivity, and encouragement of teachers, coaches, and fellow students. Teasing must never be tolerated. The resulting embarrassment and loss of self-esteem can cause a student with a chronic illness to avoid using necessary medication or to avoid physical education class.

Exercise-induced Asthma (EIA)

All physical education teachers and coaches need to know about and be able to recognize exercise-induced asthma (EIA, also known as exercise-induced bronchospasm or EIB), which can occur when a person with asthma rapidly breathes air that is cooler and dryer than that of the respiratory tract. This condition affects an estimated 90 percent of people with asthma.53 EIA is often the most common cause of asthma symptoms among teenagers and young adults.
also might be a student’s only symptom and could be a “red flag” indicator of inadequate asthma management.

Although the type and duration of activity recommended for people who experience EIA varies, some activities are generally better than others. For several reasons, swimming is often considered the activity of choice: it is done in a warm, humid atmosphere; it can be a year-round activity for people with access to a pool; it tones upper body muscles; and, because of the horizontal position of swimmers, it can help mobilize mucus from the bottom of the lungs. Walking, leisure biking, and hiking are also activities with a fairly low risk of triggering EIA.

Team sports that require short bursts of energy, such as baseball, football, wrestling, volleyball, gymnastics, and short-duration track and field events are less likely to trigger EIA than sports requiring continuous activity such as soccer, basketball, field hockey, and long-distance running. Cold air sports such as ice hockey or ice-skating may not be tolerated well; however, many people with asthma have found that with proper training and medical treatment, they are able to excel as runners or even basketball players.

Resources on individual health care plans


- The American Lung Association provides a model asthma emergency protocol for children with asthma and other sample planning forms in the Asthma-Friendly Schools Toolkit. Visit the Asthma-Friendly Schools Initiative page at www.lungusa.org.

- Allergy and Asthma Network/Mothers of Asthmatics (AANMA), a national nonprofit network of families, offers sample asthma action plans and information on children’s rights at school at www.aanma.org.

- The American Academy of Pediatrics (AAP) provides a model emergency information form for children with special health care needs online at pediatrics.aappublications.org/cgi/content/full/104/4/e53.

- The National Association of School Nurses (NASN) has several position statements and briefs about the preparation of care plans, reasonable accommodations, confidentiality, and other topics at www.nasn.org.

- The American School Health Association (ASHA) offers several useful publications that can be ordered by calling (330) 678-1601 or by visiting www.ashaweb.org:
  - The School Nurse’s Source Book of Individualized Health care Plans (two volumes)
  - Guidelines for Protecting Confidential Student Health Information
  - Managing the School-Age Child with a Chronic Health Condition


Resources on legal rights and confidentiality policies

- The Council of School Attorneys (COSA) of the National School Boards Association (NSBA) offers detailed guidance for schools and districts on numerous legal issues including health records confidentiality. Go to www.nsba.org/cosa.
Three offices in the U.S. Department of Education administer the laws discussed in this section:

- The Office for Civil Rights (OCR) enforces the federal laws that guarantee the rights of students with disabilities. Information and guidance about the various laws, including complaint procedures, are available at www.ed.gov/about/offices/list/ocr.

- The Office of Special Education Programs (OSEP) administers the Individuals with Disabilities Education Act (IDEA). For information and guidance go online to www.ed.gov/about/offices/list/osers/osep.


The Office for Civil Rights of the U.S. Department of Health and Human Services offers guidance on implementing the privacy rule of the Health Insurance Portability and Accountability Act (HIPAA). This guidance can be accessed by visiting www.hhs.gov/ocr/hipaa/assist.html or by calling (866) 282-0659, a toll-free number.

The Institute of Government at the University of North Carolina-Chapel Hill maintains a website on the HIPAA medical privacy rule and its applicability to education agencies at www.medicalprivacy.unc.edu.

Asthma and Physical Activity in the School, a booklet that describes how teachers and coaches can help students with asthma participate in sports and physical activities, and a new fact sheet titled Breathing Difficulties Related to Physical Activity for Students With Asthma: Exercise-Induced Asthma: Information for Physical Educators, Coaches and Trainers. The materials can be downloaded at www.nhlbi.nih.gov/health/pubs/pub_slct.htm.

The National Center on Physical Activity and Disability (NCPAD) features a searchable database and access to fact sheets and bibliographies on topics relating to specific activities and disabilities. Go to www.ncpad.org.

The American Academy of Allergy, Asthma and Immunology (AAAAI) offers Tips to Remember: Exercise-Induced Asthma at www.aaaai.org/patients/publicedmat/tips/exerciseinducedasthma.stm.

The Canadian Lung Association has an informative website on asthma and sports at www.lung.ca/asthma/exercise.

PE Central provides information and resources to help K–12 physical education teachers deliver developmentally appropriate physical education instruction to students. The Adapted Physical Education section of the website offers standards, lesson plans, assessment instruments, research, and other resources at www.pecentral.org/adaptive/adapted.html.

PELINKS4U is another website for K–12 physical education teachers that devotes a section to adapted physical education. Users can sign up for a monthly email newsletter. Visit www.pelinks4u.org/sections/adaptive/adaptive.htm.

Resources on physical education for people with disabilities:

- The National Asthma Education and Prevention Program (NAEPP) offers
4. School Health Services

School health service programs, in partnership with parents, families, and health care providers, can play an integral role in helping students to manage and control chronic illness. A student experiencing an acute medical crisis, such as an asthma episode, needs immediate access to medications and the support of a responsible adult with the knowledge and skills to help.

The following sample policy is written in broad terms. The discussion that follows focuses on asthma.

Sample Health Services Policy:

**SCHOOL HEALTH SERVICES PROGRAM.** In collaboration with the district/school health council/the physician consultant, each district/school shall develop, implement, monitor, and annually update a plan for a school health services program that is administered and evaluated by a school nurse/other. The program shall be consistent with the *State Nurse Practice Act* and other relevant state and federal laws and include the following elements:

1. Documentation that specified school personnel have the authority to administer basic first aid, urgent care, medications, health status monitoring procedures, and other routine health care services, including services detailed in students’ individual health care plans (IHCPs) and individual education plans (IEPs).

2. Requirements that all personnel who administer specified school health services are appropriately qualified, licensed (if applicable), trained, equipped, supported, and supervised.

3. Requirements that school health personnel coordinate the provision of frequent or recurring health care services with students’ primary health care providers and home caregivers.

4. Procedures to make certain that school health staff, with the written consent of a parent/guardian and a licensed health care provider, administer students’ prescribed medications and medical procedures in a safe, reliable, effective, and timely manner.

5. **Permission for students to carry and self-administer prescribed medications and perform prescribed medical procedures without adult supervision if such students are deemed by their parent/guardians, the school nurse, and the students’ primary health care provider to be responsible and to have the necessary knowledge and skills [if permitted by state law].**
6. Procedures to make certain that medications and medical equipment are safely, securely, and confidentially stored with due regard to expiration dates and safe disposal procedures.

7. Procurement, safe storage, and maintenance of necessary equipment and medications for the rapid response of properly trained school personnel to cases of anaphylactic shock and other health emergencies at school.

8. Procedures to ensure that all medications administered and medical procedures performed at school are documented, including the name of the recipient; the name of the medication given or procedure performed; the date, time, dosage, and route for each medication provided; the name of the person who provided the medication or performed the procedure; and documentation of any refusal by the recipient to take or receive a medication.

9. Procedures to ensure that the confidentiality of health and mental health information will be maintained in accordance with state and federal laws and the ethical standards of medical practice, such that health information is shared only when necessary to support a student’s educational progress or to address a student’s potential health care and emergency needs.

10. Strategies to recover reimbursable health services costs.

Discussion

With proper management, most people can keep asthma, diabetes, and many other chronic health conditions under control. School health services can often play a valuable supporting role in helping students control these conditions. These services should usually be provided in cooperation with students’ primary health care providers.

Key tasks for policymakers that are discussed in this section include:

- deciding how best to organize and finance the school health services program;
- detailing the qualifications, responsibilities, and professional development needs for various school health staff positions;
- adopting and periodically updating policies regarding the administration of medications to students, including students’ self-administration if legally permitted; and
- establishing policies concerning schools’ preparation for and response to medical emergencies, including the maintenance of essential supplies and medications.

School health services organization and staffing

Although school health services are organized differently from state to state, district to district, and school to school, nurses should generally have the lead in planning, administering, supervising, and evaluating the school health services program and its staff.

States typically treat school health services as a matter of local control and impose few specific requirements. Even so, many state education and
Medical Care for Low Income and Minority Children with Asthma

Low income populations and minorities experience disproportionately higher morbidity and mortality because of asthma. The reasons for these disparities are not clearly understood, but where poverty is present they are probably because of an interaction of factors including: lack of access to quality medical care, high levels of exposure to environmental allergens and irritants, language barriers, and lack of financial resources and social support to manage the disease effectively on a long-term basis.

African American and Hispanic children appear to be at especially high risk of not receiving adequate preventive treatment for asthma attacks. Several studies have documented inappropriate treatment for asthma among inner-city children with asthma. For example, an analysis of preschool children hospitalized for asthma found that only seven percent of African Americans and two percent of Hispanics, compared with 21 percent of white children, were prescribed routine medication to prevent future asthma exacerbations. A recent study of elementary school children in Baltimore and Washington, DC, found that inner-city children with asthma frequently are under medicated, using the wrong medication, or using none at all despite daily symptoms, frequent school absences, and emergency room visits for asthma. More than 80 percent of those who did take regular medication did not use anti-inflammatory drugs.

U.S. Department of Health and Human Services

health departments offer local school officials guidance, assistance, and resources to help them develop appropriate policies and practices.

School health services are typically provided by some combination of licensed school nurses, health aides, school physician consultants, and school-based or school-linked health centers. These services are most often funded through the education system, but other entities, including public health agencies and local hospitals, may also help support them. Creative administrators can recover some of the costs of providing school health services by submitting claims for reimbursable services to private health insurance carriers and government-funded programs such as Medicaid.

School nurses: Ideally, a full-time registered nurse (RN) who is licensed by the state as a school nurse would directly provide health services at every school. In reality, school nurses often divide their time among multiple schools, and many schools are not served at all. In 2000, 23 percent of U.S. schools did not have either a full-time or part-time school nurse. A 2002 survey of secondary schools found a huge range in the percentage of a state’s high schools with a full-time registered nurse on staff, from 98 percent in New Jersey and Delaware to one or two percent in other states. On average, 41 percent of high schools nationwide employed a full-time registered nurse. Qualifications for school nurses also vary widely from state to state (see box on page 39).

The NASN recommends a ratio of one nurse to every 750 students who are essentially well, with lower ratios as student health and medical needs dictate. This recommendation is endorsed by several other school health organizations and included in the nation’s health objectives for 2010. Yet only eight states require specific school nurse to student ratios, and only Delaware and Vermont require a maximum ratio of 1:750. As of 2000, 53 percent of U.S. schools were found to have met this standard.
School Nurse Qualifications

The following table contrasts the minimum professional qualifications for school nurses recommended by the National Association of School Nurses (NASN) with the actual requirements of states in NASBE’s online state school health policy database as of February 2005:

<table>
<thead>
<tr>
<th>NASN recommendations</th>
<th>States’ policies as of February 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensure as a registered nurse (RN)</td>
<td>33 states require an RN license; seven states require at least a licensed practical nurse (LPN) license</td>
</tr>
<tr>
<td>A baccalaureate degree from an accredited college or university</td>
<td>16 states require a BA degree or higher</td>
</tr>
<tr>
<td>State certification where required</td>
<td>24 states have specialized certification, credential, or endorsement requirements</td>
</tr>
<tr>
<td>National certification through the National Board for Certification of School Nurses (NBCSN)</td>
<td>Not required by any state</td>
</tr>
</tbody>
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What If a School Does Not Have a Nurse and Cannot Afford to Hire One?

Policymakers need to weigh the costs of employing qualified school health personnel against the potential liability of not providing needed services for a student with a disabling condition that interferes with educational performance. As a veteran litigator advised in a recent issue of The School Administrator, “The single most effective strategy for reducing exposure to special education claims—in fact, to most legal claims—is to hire personnel intelligently.... [Staff members] should be able to point to evidence of an honest, sustained, and well-considered effort to provide appropriate service to students with disabilities.”

Administrators in many schools are finding innovative ways of attending to students’ health needs, such as establishing community partnerships and discovering supplementary resources to finance nurses.

Dr. Howard Tares, a noted pediatrician who has been working with schools for more than 17 years, suggests that school nurses can actually help school administrators save money by using the nurses’ expertise to help direct limited health education and program funds to the most cost-effective programs.
Role of the School Nurse in Asthma Management

School nurses play an important role in serving as a liaison between the school and child’s home and between the school and health care providers in efforts to promote adherence with health care providers’ orders related to asthma management. The school nurse:

- develops and implements, in coordination with local providers and the coordinated school health team members, the child’s asthma management plan;
- establishes and monitors compliance with school policy related to the management of children at school and during school-related activities;
- develops protocols for the care of children with acute respiratory distress at school;
- provides or supervises proper medication administration;
- supports education of the child in self-management;
- monitors the child’s condition;
- advocates for the child’s inclusion in school-related activities; and
- works with school staff to assure that accommodations are in place for the child’s well-being.

A recent survey of one state’s schools discovered considerable confusion over who had ultimate legal responsibility for the administration of medications at school—the principal or the school nurse. Because registered nurses are medical personnel who are licensed by the state, policymakers need to clearly grant them the primary responsibility for making medical decisions.

Paraprofessionals: Many districts and schools employ health care paraprofessionals who, under the supervision of a school nurse, provide health care services to students. In 2000, 33 percent of U.S. schools employed part-time or full-time health care aides or paraprofessionals. In many instances, however, school administrative personnel are responsible for keeping health records and administering medicine and first aid: 94 percent of school districts permit faculty and staff to administer prescription drugs to students.

The medical laws and regulations of each state provide guidelines for the delegation of health care tasks. The National Association of State School Nurse Consultants (NASSNC) recommends that “a registered nurse must determine which student care activities may be delegated, under what circumstances it is appropriate to delegate aspects of student care, and by whom the delegated portions of care can safely be provided.” They further recommend that the RN should be responsible for planning and assessing school health care services and for training, supervising, and evaluating unlicensed assistive personnel, and should be accountable for outcomes.

With proper preparation and support, non-medical school staff can safely and effectively assist students who experience asthma episodes at school or during school activities. However, a study published in 2001 found that nearly 15 percent of school staff performing treatment for asthma did so without any training. By working together, school nurses and community professionals can plan and implement an appropriate professional development program for school personnel.
School physician consultants: Many school districts and individual schools have established formal relationships with doctors in the community to provide guidance or services. In 2000, 16 percent of U.S. schools had a designated part-time or full-time school physician who provided health services to students. The state of Connecticut mandates that every school district have a physician consultant. Such a person is a logical choice to help draft or review plans to provide school health services.

School-based health centers: As of 2002, nearly 1,500 school-based health centers (SBHCs) operated on or near school campuses. SBHCs are generally staffed by nurse practitioners or physicians’ assistants who provide primary, preventative, and acute care for students. They treat chronic conditions such as asthma and educate both family caregivers and students about health concerns.

The first SBHCs were mostly in middle and high schools in urban areas, but an increasing number of elementary and rural schools now use them to deliver essential primary care services, including diagnostic and treatment services. A few states provide direct funding, but most school health clinics rely on a mix of grant funds from foundations, local hospitals, and health departments. Many also bill Medicaid and private health insurance firms for services provided.

SBHCs can be particularly valuable to students from impoverished or rural families who need medical care but have limited access to health insurance or health care providers. Lack of family transportation is another major obstacle that often results in delayed or inadequate health care.

Schools with an SBHC have demonstrated improvements in asthma management, increased use of outpatient care, and decreased rates of hospitalizations because of asthma. And students with asthma who were enrolled in schools with SBHCs were found to have missed fewer days of school than their peers in schools without SBHCs.

Monitoring and medications

Students’ individual health care plans describe the medical procedures that their condition requires during the school day. For example, some students with asthma need to monitor their lung function regularly at school and then compare their daily measurements with the normal baseline measurements recorded in their IHCP or asthma action plan to determine whether their condition is under control.

A student’s IHCP or individual disease management plan should list all prescribed medications the student is expected to take at school, with specific instructions regarding dosage and administration. The Center for Health and Health Care in Schools reports that 11 percent of children aged five to 11 and 13 percent of those aged 12 to 17 have a problem for which they need to take medication regularly for at least three months. An additional but unknown number of children and adolescents take medications for acute problems for shorter lengths of time.

All school personnel must understand the importance of ensuring that students have rapid access to needed medications for chronic illnesses such as asthma, serious allergies, and diabetes. The longer the time between when a student feels the onset of an asthma attack or a dangerously low blood glucose level and when the student uses medication, the greater the risk that the student will need to visit the emergency room.

Student self-administration of medications

A student may be discouraged and fail to use needed medications if accessing them at school is difficult, inconvenient, or embarrassing. This failure can exacerbate the student’s symptoms and
needlessly limit his or her activities. Many medical professionals and parent groups urge that schools allow students who are considered competent and responsible to carry and administer their own medications. Students with asthma who self-administer medications can prevent or reduce the severity of their asthma episodes.\(^8\) It has also been shown that students can safely perform other simple medical procedures such as blood glucose monitoring and insulin injections.\(^9\)

At least 47 states (see box on page 43) have policies permitting competent students to carry or use doctor-prescribed medications as needed—without adult supervision. A school nurse can help ensure that students have the necessary knowledge and skills to comply with self-care instructions and that they are responsible enough not share their medications with other students. School personnel can apply routine disciplinary measures if a student abuses the privilege.

Restricted access to urgently needed medications can be an unintended consequence of “zero tolerance” anti-drug abuse policies.\(^8\) However, in January 2004 the Office of Safe and Drug-Free Schools of the U.S. Department of Education

Some Common Asthma-Related Equipment and Medications

- **Peak flow meter**—a device that measures how well air moves out of the airways; it can indicate the effectiveness of asthma control efforts even when a person is not experiencing symptoms.
- **Anti-inflammatories**—medications such as corticosteroids taken regularly for long-term control of asthma.
- **Bronchodilators**—medications such as Albuterol for quick relief of asthma symptoms or to prevent bronchospasms caused by exercise, often administered by an inhaler or nebulizer.
- **Nebulizer**—a machine that forms a fine mist, used to administer asthma medications.
- **EpiPen®**—an emergency auto-injection kit of epinephrine (adrenaline) for persons with a known life-threatening allergy or a record of very severe asthma symptoms.

Potential School Liability: “A Whole New Situation”

Medications that schools are asked to manage may include controlled substances, psychotropic medications, and a range of therapeutic interventions for chronic illnesses such as diabetes and asthma. With more children receiving increasingly powerful drugs during the school day, the school system’s [potential liability for improper] management of medication has increased.

This is a whole new situation. No one planned it and no one planned for it. But now is the time to look at the [liability risk that schools face] and see what changes need to be made.... Whether medication is managed by a delegated non-medical person or by a registered nurse, the school is at risk of failing to follow proper procedures in handling potentially dangerous medications unless systems are in place that will make errors less likely.

*Center for Health and Health Care in Schools™*
State Policies on Self-Administration of Medication by Students

Some states have long allowed student possession and self-administration of prescribed medications with written permission from a parent/guardian and the prescribing physician. In October 2004 the U.S. Congress passed the Asthmatic Schoolchildren’s Treatment and Health Management Act, which established funding preference for asthma-related federal programs to states having laws that protect students’ rights to carry and self-administer asthma and/or anaphylaxis medication. The new Federal law and organized advocacy efforts effectively stimulated a flurry of state legislative action and now every state except Nebraska, South Dakota, and Vermont has adopted such a law or policy.

The policies vary as to type. Twenty-eight states have statewide policies that apply to all students (see map). Sixteen states require local school districts to adopt policies that permit student self-administration. Two states allow, but do not require, school districts to establish student self-administration policies. Massachusetts authorizes students to self-administer, “consistent with school policy.”

States’ policies also vary as to which medications students may possess and self-administer:

- Eleven states (AZ, FL, ID, MO, NY, OH, OK, PA, UT, WI, WY) have policies that only allow student self-use of asthma inhalers.
- Thirteen states (AK, AR, CA, CO, DE, KS, ME, MI, MN, NC, ND, TN, VA) have policies that only allow students to use asthma inhalers and epinephrine auto-injectors (EpiPen®).
- The self-administration policies of 9 states (AL, GA, IL, KY, MS, MT, NH, TX, WV) refer to “asthma medications” without naming specific drugs. Similarly, Nevada and Washington refer to “medications for asthma and anaphylaxis,” Iowa and Maryland to “medications for students with asthma or other airway constricting disease,” and New Mexico to “asthma medication and emergency anaphylaxis medication.”
- Six states (CT, LA, MA, NJ, RI, SC) have broad policies that allow students to self-administer any prescribed medication with the proper authorizations. Indiana’s policy applies to medications for “students with a chronic disease or medical condition.” Hawaii’s policy allows medications for “asthma or other potentially life-threatening condition.” Oregon’s policy allows “all noninjectable medications.” California and Kansas allow school districts to go beyond what is permitted statewide and adopt policies that address any kind of medication.
issued guidance clarifying that “a student’s prescription drugs, and related equipment, are not illegal drugs and are not prohibited by the [Safe and Drug-Free Schools and Communities Act].” Furthermore, Section 504 and IDEA (discussed in the previous section) may be interpreted to require public schools to permit students to carry their asthma inhalers so they can self-medicate as indicated in their asthma management plan.85

Serious concerns about school liability can be an incentive to adopt policies that allow students to self-administer prescribed medications. Policies that require a student to go to an office or nurse for medication have been called “dangerous,” because the final asthma episode of about 60 percent of children who died from asthma was found to be sudden—not preceded by milder symptoms—and fatal within one hour.86 The National Conference of State Legislatures (NCSL) notes that several school districts have been judged negligent because of policy shortcomings, citing cases in Illinois, California, Louisiana, Minnesota, Nebraska, and New Hampshire that have cost some districts millions of dollars.87

Shielding schools from liability

Apprehensions about staff liability can sometimes inhibit schools’ willingness to allow administration of medications by staff or students. Schools and school personnel need legal protection if, for example, a correctly administered medication has unforeseen consequences, if a student does not self-medicate as directed, or if a student improperly obtains and uses a medication prescribed for someone else. The National School Boards Association (NSBA) asserts that schools should bear no liability for any administration of prescribed medications by school staff, or for any possession or use of prescribed medication by students.91

State-level laws should shield school districts and their employees from civil liability when the district has established sensible, up-to-date

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State of Wisconsin: Possession and Use of Inhalers

(1) While in school, at a school-sponsored activity or under the supervision of a school authority, an asthmatic pupil may possess and use a metered dose inhaler or dry powder inhaler if all of the following are true:

(a) The pupil uses the inhaler before exercise to prevent the onset of asthmatic symptoms or uses the inhaler to alleviate asthmatic symptoms.

(b) The pupil has the written approval of the pupil’s physician and, if the pupil is a minor, the written approval of the pupil’s parent or guardian.

(c) The pupil has provided the school principal with a copy of the approval or approvals under par. (b).

(2) No school district, school board or school district employee is civilly liable for damage to a pupil caused by a school district employee who prohibits a pupil from using an inhaler because of the employee’s good faith belief that the requirements of sub. (1) had not been satisfied or who allows a pupil to use an inhaler because of the employee’s good faith belief that the requirements of sub. (1) had been satisfied.

Wisconsin Statute 118.291
A Matter of Absenteeism from Class...

One aspect of school absenteeism is entirely preventable and almost never considered: children with asthma who are forced to go to the clinic every time a medication is needed. Some children must use medication three or four times a day. A child who leaves the classroom for one dose of medication per day loses an additional 11 days over the course of the school year.

Allergy & Asthma Network/Mothers of Asthmatics

...and a Matter of Life and Death...

When an asthma attack occurs, having a rescue inhaler in hand—not sitting in the nurse’s office—can mean the difference between life and death.

We believe children have the right to easily accessible quick relief inhalers. We want to encourage students who are responsible and developmentally able to carry their inhalers and self-administer medications so that they become independent in their asthma management.

John Kirkwood, President and CEO of the American Lung Association

...and a Matter of Liability

News Article: "Jury Awards $9 Million in Asthma Death at School"

A California jury that unanimously awarded a mother nine million dollars in damages for the death of her 11-year-old son from an asthma attack at school found the school district guilty of negligence for failing to inform parents of an unwritten school policy that would have allowed the child to carry an inhaler.

Fifth-grader Phillip Gonzalez had severe asthma, but pursuant to a written school policy requiring that all student medication be stored in a specific place at school, Phillip and his mother understood that he could not carry his inhaler on his person. A nebulizer was kept in the school office, where, when he had to use it, Phillip was assisted by school staff.

On the day he died, Phillip left his classroom to use the restroom and minutes later appeared in the school office exhibiting symptoms of severe asthma attack. The school secretary, who had been trained to use a nebulizer, attempted to help him, but the child collapsed. Emergency personnel were summoned, but to no avail; Phillip died later that afternoon.

At the trial, the school district contended that its policy did not preclude a student from carrying necessary medication such as an inhaler, when certified as necessary by a physician. But the district conceded that while its policy about medications being stored at school was written, the exception was not. The existence of the unwritten exemption was confirmed by the district’s two nurses, the school superintendent, and the principal of Phillip’s school, but Gonzalez and other parents of asthmatic children who had been told they could not carry inhalers testified that they were never told about the exception until after Phillip’s death.

This significant fact—that the policy requiring medications to be stored at school was written but the exception was not—made the district liable for negligence, the court ruled.


The Center for Health and Health Care in Schools
policies that are faithfully enforced. Particularly if the state has not established a thorough policy foundation or provided detailed guidance, school districts should seek legal advice as they develop any policy on the administration of medications by staff members or students.

**Other pupil services**

Because some students with chronic health conditions experience depression, low self-esteem, lack of confidence, or feelings of helplessness, or do not comply with treatment instructions, a coordinated school health program also needs to address students’ psychological needs. Schools lacking social workers, guidance counselors, or psychologists might be able to establish formal relationships and referral procedures with mental health services in the community.

A student who is too young or otherwise not able to follow the self-care tasks contained in a disease management plan might need case management, in which an individual or team provides wide-ranging assistance such as helping the student access needed medical services, briefing the student’s family members about necessary care, and helping the student identify and reduce his or her exposure to asthma triggers. School nurses, counselors, or social workers can provide case management services. Alternatively, schools can sometimes refer students to community agencies that provide such support, such as a community health center.

In 2000, approximately 33 percent of U.S. schools reported that they had made arrangements with a local health department, local mental health or social services agency, private physician or dentist, local hospital, managed-care organization, or university or medical school to provide some type of student services.

**Emergency preparedness**

School and district policies can lay a valuable foundation for appropriate staff responses to medical emergencies. Students and staff members with uncontrolled asthma or diabetes—and also those with serious allergies to foods (e.g., peanuts, shellfish, eggs), insect stings (e.g., bees, wasps, hornets, yellow jackets), or other triggers—might need immediate access to emergency medications and the help of people who can recognize a health crisis and know what to do.

In January 2004, the American Academy of Pediatrics published a detailed position statement titled 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, which the Centers for Disease Control and Prevention and numerous professional organizations have endorsed. This document summarizes essential information about life-threatening emergencies, including asthma episodes, and discusses the components...
DEFINITION: Life-threatening asthma consists of an acute episode of worsening airflow obstruction. Immediate action and monitoring are necessary.

A systemic allergic reaction (anaphylaxis) is a severe response resulting in cardiovascular collapse (shock) after the injection of an antigen (e.g., bee or other insect sting), ingestion of a food or medication, or exposure to other allergens, such as animal fur, chemical irritants, pollens or molds, among others. The blood pressure falls, the pulse becomes weak, and death can occur. Immediate allergic reactions may require emergency treatment and medications.

LIFE-THREATENING ASTHMA SYMPTOMS:
Any of these symptoms may occur:

- Chest tightness
- Wheezing
- Severe shortness of breath
- Retractions (chest or neck “sucked in”)
- Cyanosis (lips and nail beds exhibit a grayish or bluish color)
- Change in mental status, such as agitation, anxiety, or lethargy
- A hunched-over position
- Breathlessness causing speech in one-to-two word phrases or complete inability to speak.

ANAPHYLACTIC SYMPTOMS OF BODY SYSTEM: Any of the symptoms may occur within seconds. The more immediate the reactions, the more severe the reaction may become. Any of the symptoms present requires several hours of monitoring.

- Skin: warmth, itching, and/or tingling of underarms/groin, flushing, hives
- Abdominal: pain, nausea and vomiting, diarrhea
- Oral/Respiratory: sneezing, swelling of face (lips, mouth, tongue, throat), lump or tightness in the throat, hoarseness, difficulty inhaling, shortness of breath, decrease in peak flow meter reading, wheezing reaction
- Cardiovascular: headache, low blood pressure (shock), lightheadedness, fainting, loss of consciousness, rapid heart rate, ventricular fibrillation (no pulse)
- Mental status: apprehension, anxiety, restlessness, irritability.

EMERGENCY PROTOCOL:

1. CALL 911
2. Summon school nurse if available. If not, summon designated trained, non-medical staff to implement emergency protocol
3. Check airway patency, breathing, respiratory rate, and pulse
4. Administer medications (EpiPen and albuterol) per standing order
5. Determine cause as quickly as possible
6. Monitor vital signs (pulse, respiration, etc.)
7. Contact parents immediately and physician as soon as possible
8. Any individual treated for symptoms with epinephrine at school will be transferred to medical facility.

STANDING ORDERS FOR RESPONSE TO LIFE-THREATENING ASTHMA OR ANAPHYLAXIS:

- Administer an IM EpiPen-Jr. for a child less than 50 pounds or an adult EpiPen for any individual over 50 pounds
- Follow with nebulized albuterol (premixed) while awaiting EMS. If not better, may repeat twice, back-to-back
- Administer CPR, if indicated.

(Physician) Date

[The original document is available online at www.nde.state.ne.us/LEGAL/CLEANRULE59.pdf.]
of a school emergency response plan, the professional development needs of school personnel, and the equipment required for effective emergency response.

A student's asthma action plan might call for the student to have easy access to an emergency medication or an EpiPen®, a device that provides a rapid dose of epinephrine, to protect the student from a severe asthma episode or potentially fatal anaphylaxis (allergic reaction). Adults and older students can often self-administer this medication, which can provide valuable time to get the affected person to the emergency room for further treatment.

Yet even if students with asthma are permitted to carry their own rescue inhalers, schools should keep a properly stored back-up supply of emergency medication in the health room. This back-up supply might be needed if a student's condition deteriorates to the point that the student is unable to self-administer his or her medication, if a student is not carrying the needed medication, or if an ambulance arrives late or is not carrying the necessary medications.

If the school cannot afford to purchase the necessary equipment or maintain a current supply of emergency medication, local hospitals, physicians, pharmacies, or drug companies will often donate the items. As an example, the Nebraska Department of Education has been working with the state’s medical community to help schools and day care centers acquire the necessary education, professional development, materials, and financial assistance to implement the Emergency Response to Life-Threatening Asthma or Systemic Allergic Reactions Protocol (see box on page 47), which the Nebraska State Board of Education adopted in 2003. This protocol includes a physician’s standing order, which must be renewed annually, to administer specified procedures and medications.

Resources on school health services

➤ The National Association of School Nurses (NASN) has many position statements and briefs about the use of inhalers, care plans, reasonable accommodations, medication administration, indoor air quality, and other topics. NASN also offers the School Nurse Asthma Management Program (SNAMP), a one-day training for school nurses. Visit www.nasn.org.

➤ The American Academy of Pediatrics (AAP) offers Health, Mental Health, and Safety Guidelines for Schools at www.nationalguidelines.org. This online guide was developed in collaboration with NASN and more than 300 health, education, and safety professionals from more than 30 different national organizations including NASBE.

AAP has additional school health resources for pediatricians at www.schoolhealth.org, as well as several relevant policy statements that contain detailed, practical advice for schools at http://aappolicy.aappublications.org. These policy statements include:

- School Health Centers and Other Integrated School Health Services
- Guidelines for the Administration of Medication in School
- Emergency Preparedness for Children with Special Health Care Needs, which appends a model emergency information form for children with special health care needs.

➤ The National Assembly on School-Based Health Care (NASBHC) offers numerous resources and guidance documents on school-based and school-linked health centers at www.nasbhc.org.

➤ The Center for Health and Health Care in Schools compiles news, research findings,
and resources on a wide variety of current school health issues at www.healthinschools.org.

SchoolNurse.com posts articles from past issues of the monthly subscription newsletter School Health Alert. In addition, various publications of interest to school nurses can be purchased at this website, including Clinical Guidelines for School Nurses and Legal Issues in School Health Services.

CDC's Division of Adolescent and School Health (DASH) has information on federal, private, and foundation funding for school health services at www.cdc.gov/HealthyYouth/funding/index.htm.

Resources on asthma-related school health services

- The National Asthma Education and Prevention Program (NAEPP) has developed several school health materials, including Managing Asthma: A Guide for Schools (updated in 2003), a simple-to-follow guide that includes actions to be taken by school personnel and easily reproducible information sheets on using peak-flow meters and metered-dose inhalers, a fill-in asthma action plan template, and sample letters to the parents/guardians and physicians of students with asthma. These materials can be found at the website of the National Heart, Lung, and Blood Institute (NHLBI) at www.nhlbi.nih.gov/health/public/lung.

  In addition, nurses and other health professionals can find detailed medical guidance about asthma and other respiratory diseases through the main NHLBI website at www.nhlbi.nih.gov.

- The American Lung Association's Asthma-Friendly Schools Toolkit includes the Asthma Incidence Reporter, a free software database program designed to help schools track and manage asthma. The program can be password-encrypted for confidentiality. Go to the Asthma-Friendly Schools Initiative site at www.lungusa.org to download the entire package, or call 1-800-LUNG-USA to order the toolkit on CD-ROM.

- The American Academy of Asthma Allergy and Immunology (AAAAI) has developed an Allergy and Asthma School Nurse Toolkit that includes both a clinical and management overview of several allergy and asthma topics, informational handouts for a variety of key audiences (e.g., parents, students, teachers, coaches), sample forms (such as asthma action plans), and ready-to-use slide presentations. Visit www.aaaai.org/members/allied_health/toolkit.

  AAAAI, in partnership with the American Academy of Pediatrics (AAP) and the National Asthma Education and Prevention Program (NAEPP), has also developed Pediatric Asthma: Promoting Best Practice, a comprehensive medical resource guide for managing asthma in children. It can be downloaded at www.aaaai.org/members/resources/initiatives/pediatricasthma.stm.

- The Allergy and Asthma Network/Mothers of Asthmatics (AANMA) operates a useful website where parents, teachers, and school administrators can find comprehensive information on keeping students with asthma and allergies safe at school. Visit the “school house” section of “Breatherville” at www.aanma.org.

- The American School Health Association (ASHA) published “Asthma in the School Community” as a special issue of Health in Action, a journal for school health practitioners of all disciplines. Visit www.ashaweb.org.

- CDC's National Center for Environmental Health (NCEH) developed an asthma training curriculum on CD-ROM for the public health workforce, including school nurses. Order it at http://bookstore.phf.org/prod366.htm.
Selected state-specific resources

➢ The Missouri School Boards Association (MSBA), in collaboration with the state health department and other health professionals, has developed an easy-to-use school nursing manual that is available in print or on a CD-ROM with a tutorial. Flowcharts that reflect the day-to-day asthma situations faced by school nurses lead to more than 100 practical documents, forms, and hyperlinks. Call MSBA at (800) 243-3376, or access it online at www.health.state.mo.us/asthma/Publications.html.

➢ The New Jersey Department of Education has School Health Services Guidelines, a comprehensive document for school nurses, at www.state.nj.us/njded/parents/shg.pdf.

➢ The American Lung Association of Washington developed Asthma Management in Educational Settings (AMES) for school nurses. The complete guide is available at www.cshcn.org/resources/AMES.cfm.

➢ The Asthma Initiative of Michigan maintains a user-friendly website with action steps tailored for various school personnel and numerous supplementary resources including links to Michigan laws, policies, and guidance documents. Go to www.getasthmahelp.org/intro_schools.asp.

➢ Attack on Asthma Nebraska provides guidance, training materials, and public information materials to help school personnel implement the state’s emergency response protocol at www.attackonasthma.org.

➢ The Ohio Department of Public Safety produced the award-winning Emergency Guidelines for Schools, an easy-to-follow guide that provides basic emergency response information for school staff without medical or nursing training. Maine, North Dakota, and Oklahoma have adapted this guide for their own state. Download the entire manual at www.ems-c.org/downloads/pdf/emscguide.pdf.

➢ Boston Public Schools has a policy on life-threatening allergies with implementation protocols for parents, administrators, nurses, teachers, food service staff, bus drivers, and other school staff. It is available online at http://boston.k12.ma.us/dept/docs/uss-11.doc.

➢ San Francisco Unified School District offers a number of sample emergency care plans and parent letters in a variety of languages at http://portal.sfusd.edu/template/default.cfm?page=chief_dev.health.MedicalForms.
A healthy school environment is conducive to learning and good for the health of everyone at school. For students with asthma, minimizing their exposure to the triggers that can increase airway inflammation and cause an asthma episode is as essential as ensuring their access to medications. In particular, all schools need to adopt and enforce a tobacco-free school environment policy.

The sample policy below addresses many aspects of a healthy school environment. However, the discussion that follows concentrates on the reduction of potential asthma triggers.

**Sample School Environment Policy:**

HEALTHY LEARNING ENVIRONMENT PLAN. Each district/school shall develop, implement, and monitor a healthy learning environment plan designed to optimize conditions for learning and minimize human exposure to indoor and outdoor hazardous chemicals, allergens, irritants, and pollutants. The plan, which shall be approved by the school health council, reported to the state education agency, and updated every three years, shall address the following elements:

- an assessment of environmental factors that can enhance or detract from student learning and comfort, including lighting, ventilation, temperature, noise, availability of drinking water, and sanitation facilities;

- an assessment of environmental factors that are potentially harmful to human health, including tobacco smoke, pests, mold, pollen, dust mites, animal dander, chalk dust, cleaning agents, scented and unscented personal care products, volatile organic chemicals (VOCs), laboratory chemicals, unvented fumes, vehicle exhaust, asbestos, lead and other substances in drinking water, arsenic-treated lumber, radon, and excessive exposure to the sun;

- a plan for the physically isolated storage, safe usage, and proper disposal of cleaning agents and other hazardous chemicals that cannot be eliminated from school buildings and grounds;

- procedures to ensure the schools’ ongoing compliance with maintenance schedules for the clean and efficient operation of heating, ventilation, and plumbing systems;

- procedures for minimizing human exposure to the exhaust of school buses and other vehicles;

- procedures for daily monitoring of outdoor air quality and for providing indoor alternatives for student physical activity on days with poor air quality;

- mechanisms for resolving cases of hazardous chemical exposure and air and water quality problems as they occur; and
SPECIFIC ACTION STEPS, STRATEGIES, AND LONG-TERM GOALS TO ADDRESS IDENTIFIED ISSUES OF CONCERN.

HEALTHY LEARNING ENVIRONMENTS IN NEWLY CONSTRUCTED OR RENOVATED BUILDINGS. All school construction or renovation projects shall optimize student learning by providing adequate heat, ventilation, lighting, safe drinking water, sanitation, and noise control, and minimizing human exposure to indoor and outdoor allergens, irritants, hazardous chemicals, pollutants, and sunlight.

TOBACCO USE PROHIBITED. No student, staff member, or school visitor is permitted to smoke, inhale, dip, or chew tobacco at any time, including non-school hours:

- in any building, facility, or vehicle owned, leased, rented, or chartered by the state/district/school;
- on any school grounds, including athletic fields and parking lots; or
- at any off-campus school-sponsored event.

In addition, no student shall be permitted to possess a tobacco product while on school property. The provisions of existing policies that address the use and possession of drugs shall apply to all tobacco products.

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.

Tobacco promotional items, including clothing, bags, lighters, and other personal articles, shall not be permitted on school grounds, in school vehicles, or at school-sponsored events. Tobacco advertising shall be prohibited in all school-sponsored publications and at all school-sponsored events.

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.

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 who violate a school’s tobacco-free policies also may be subject to disciplinary actions as determined by written school policy. All school staff shall participate in training on the correct and fair enforcement of tobacco-free policies.

[The sample tobacco-use prevention policy from Chapter F: “Policies to Discourage Tobacco Use” is repeated here.]
ANIMALS AND BIRDS. Live animals with fur or feathers shall not be kept inside classroom buildings because they are a significant asthma “trigger,” with the exception of assistive animals such as seeing-eye dogs.

INTEGRATED PEST MANAGEMENT. Integrated pest management (IPM) and control programs designed to prevent pest infestations and minimize human exposure to pesticides shall be implemented in all school buildings and on all school grounds.

OUTDOOR AIR POLLUTION. School/district office shall be responsible for daily monitoring of Air Quality Index (AQI) information provided by air pollution control agency/health department/local media outlet, and for promptly alerting each school principal of elevated air quality alerts (i.e., code orange and above). Principals shall make decisions about reducing students’ exposure to air pollution based on individual risk factors and the following guidelines:

- When the AQI is “code orange” (unhealthy for sensitive groups of people), students with a history of reactions to ozone exposure will be permitted to reduce their outdoor exertion level or time spent outdoors, and the school will arrange alternative indoor physical activities. The school nurse/designated health aide will monitor such students for symptoms of respiratory distress.

- When the AQI is “code red” (unhealthy), students with a history of reactions to ozone exposure will remain indoors and participate in indoor physical activities. The school nurse/designated health aide will monitor such students for symptoms of respiratory distress. All other students will not be allowed to engage in more than one hour of heavy exertion (i.e., in activities that involve high-intensity exercise such as basketball, soccer, and running) while outdoors.

- When the AQI is “code purple” (very unhealthy) or “code maroon” (hazardous), all students will be kept indoors and participate in indoor physical activities. The school nurse/designated health aide will monitor all students for symptoms of respiratory distress.

DIESEL SCHOOL BUS EXHAUST. To minimize potentially harmful emissions, drivers shall turn off diesel school bus engines as soon as they arrive at a loading or unloading area and not restart until ready to depart. Idling for engine warm-up will be as brief as possible. Diesel school buses must be parked and loaded at a sufficient distance from school buildings to prevent diesel fumes from being drawn into school ventilation systems.

The district/school shall endeavor to retrofit diesel engines with exhaust-reduction equipment or purchase low-emission vehicles to the greatest feasible extent.
Discussion

Exposing children with asthma to irritants or allergens to which they are sensitive can precipitate asthma episodes and increase the number and intensity of symptoms they experience. Reducing their exposure to airborne allergens and pollutants can significantly improve their quality of life. Preventing a person from having an asthma episode also helps to reduce the possibility that the person will have long-term lung damage. Because people with asthma react to different factors in the environment, an asthma action plan or individual health care plan (IHCP) should note a student’s specific trigger(s).

The U.S. Environmental Protection Agency (EPA) has shown that poor indoor air quality in schools can cause health symptoms that decrease the performance of all students and staff members. Poor indoor air quality can directly reduce a person’s ability to perform specific mental tasks requiring concentration, calculation, or memory. Indoor air quality problems can also cause headaches and eye, nose, and throat irritation, as well as aggravate persistent allergies that can interfere with teaching and learning.

Children exposed to environmental contaminants have been shown to have greater risk for lifelong harm than similarly exposed adults. Children breathe more air in proportion to their body weight than do adults, and their developing respiratory, immunological, and digestive systems may be more susceptible to environmental exposures. Some studies suggest that exposure to secondhand smoke and some allergens is a risk factor for the initial onset of asthma. The increase in asthma prevalence and severity among inner-city disadvantaged and minority children might be due to their greater exposure to asthma triggers in their environments.

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Federal and State Policies Regarding Tobacco Use in Schools

The Pro-Children Act, passed by the U.S. Congress in 1994 and reauthorized in 2001, requires that smoking be prohibited in any indoor facility where kindergarten, elementary, or secondary education or library services are regularly provided to children.

States, school districts, and schools are free to go beyond the minimal requirements of this federal law. As of February 2005, NASBE’s online state school health policy database at www.nasbe.org/healthyschools contained tobacco-use policies from 37 states with requirements that are more strict:

- Twenty-six states (AZ, AR, CA, CO, CT, DE, FL, HI, ID, IL, IA, KS, MD, MA, MI, MN, MS, NH, NM, OH, OR, RI, TX, VT, WA, WV) prohibit all students and school personnel from smoking or using other forms of tobacco in school buildings or on school grounds. Many of these policies also apply to school visitors. Thorough policies in Arizona, Delaware, Hawaii, and West Virginia explicitly prohibit all use of tobacco by students, staff, and visitors on school grounds, in school buses and other vehicles, and at off-campus school-sponsored events.

- Another 12 states (AK, KY, LA, MI, MO, MT, NJ, NY, OK, PA, TN, UT) prohibit student tobacco use on all school grounds, yet still allow designated smoking areas for school personnel.

- Eleven of the above states (AK, AR, CO, CT, HI, MD, NH, NJ, OR, RI, WA) require schools to post signs that indicate non-smoking areas.
State of Delaware: Tobacco-Free Schools Policy

1.0 In order to improve the health of students and school personnel, each school district and charter school in Delaware shall have a policy which at a minimum:

1.1 Prohibits the use of or distribution of tobacco products in school buildings, on school grounds, in school-leased or owned vehicles, even when they are not used for student purposes, and at all school-affiliated functions.

1.2 Includes procedures for communicating the policy to students, school staff, parents/guardians/caregivers, families, visitors, and the community at large.

1.3 Makes provisions for or refers individuals to voluntary cessation education and support programs that address the physical and social issues associated with nicotine addiction.

2.0 The tobacco policy shall apply to:

2.1 Any building, property or vehicle leased, owned or operated by a school district, charter school, or assigned contractor.

2.1.1 School bus operators under contract shall be considered staff for the purpose of this policy.

2.2 Any private building or other property including automobiles or other vehicles used for school activities when students and staff are present.

2.3 Any non-educational groups utilizing school buildings or other educational assets.

2.4 Any individual or a volunteer who supervises students off school grounds.

3.0 No school or school district property may be used for the advertising of any tobacco product.

Delaware Administrative Code, Title 14, Reg. 877

Yet schools in every neighborhood can have indoor air quality problems. A thorough inspection of indoor air quality in the Boston Public Schools conducted in 2004 found that 90 percent of the district’s 139 schools had at least one environmental problem that can trigger asthma attacks or allergies.104

Planning for a healthy school environment

Schools and districts can prepare practical plans to maintain a healthy learning environment by following a systematic process of identifying problems, analyzing root causes, developing solutions, and implementing them. Depending on its scope, such a process can be done quickly or take several years to conduct. Numerous resources can help schools and school districts develop appropriate plans:

- EPA's comprehensive Healthy School Environments Assessment Tool is a free, downloadable database program to help school districts establish and manage comprehensive school facility self-assessment programs.105 The database contains a fully integrated environmental health and safety checklist and is designed to be easily customized to reflect state and local requirements and policies. It fully integrates all of EPA’s programs for schools including the widely used Indoor Air Quality (IAQ): Tools for Schools Action Kit. It also includes information on health, safety and injury prevention programs of the U.S. Occupational Safety and Health Administration, the National Institute...
for Occupational Safety and Health, the Division of Adolescent and School Health of the Centers for Disease Control and Prevention, the U.S. Department of Education, the Consumer Product Safety Commission, and the U.S. Department of Transportation.

- In its Green Flag Schools Program, the Center for Health Environment and Justice (CHEJ) suggests that schools use the EPA kit and also address integrated pest management, recycling, and student environmental education. Schools can use the organization’s 30-question survey to help evaluate school environmental issues and determine priority areas to address.

- The Wisconsin Green and Healthy Schools program is broader still. Its web-based suite of assessment tools adds transportation, water, and energy to the topics above. The program encourages teachers, staff, students, and parents to work together to use the school, its grounds, and the whole community as learning tools to help teach, promote, and apply healthy, safe and environmentally sound practices.

- The landmark book Health Is Academic: A Guide to Coordinated School Health Programs takes a more expansive approach to the concept of a healthy school environment. The authors recommend that in addition to addressing the physical factors in the school environment, school officials should also address psychosocial factors such as the prevention of bullying and harassment, assuring quality of student/staff relationships, and recognition of students’ abilities and successes. An accompanying website at www2.edc.org/MakingHealthAcademic suggests action steps that various stakeholders can take to implement a healthy school environment. The remainder of this section addresses major environmental asthma triggers commonly found at school.

Tobacco smoke

Children with asthma should never smoke or be exposed to environmental tobacco smoke. Cigarette smoke has been shown to exacerbate asthma and to precipitate serious asthma episodes and emergency conditions. And exposure to tobacco smoke during childhood is associated with an increased prevalence of asthma among adults.

The most important step to eliminate secondhand smoke at school is to adopt a tobacco-free environment policy. Creating a tobacco-free norm at school can help prevent all students, including those with asthma, from smoking. Such a norm is reinforced when all forms of tobacco advertising and promotion are also prohibited on school property.

In 2000, 46 percent of school districts and 45 percent of schools nationwide reported that they had “tobacco-free schools” policies. As defined by CDC, “a ‘tobacco-free environment’ exists if the state, district, or school has a policy prohibiting cigarette, cigar, and pipe smoking, and smokeless tobacco use by students, faculty, staff, and visitors; the policy prohibits tobacco use in school buildings, on school grounds, in school buses or other vehicles used to transport students, and at off-campus, school-sponsored events.” Arizona, Delaware, Hawaii, and West Virginia have policies that meet all these criteria: Delaware’s is a model of clarity (see box on page 55).

For detailed policy guidance and key resources on this issue, see Chapter F: “Policies to Discourage Tobacco Use.”

Dust mites

Allergens from dust mites, insects that are too small to see without magnification, can trigger an asthma episode in sensitive individuals. Dust mites thrive in moist climates.
Upholstered furniture is a good home for dust mites. They also thrive on stuffed animals and pillows often found in preschools and day care centers. Carpeted floors contain higher levels of dust mites and mold than hard floors of wood, tile, or vinyl. If schools use upholstered furniture, pillows, or carpets, they should vacuum and clean them regularly when sensitive students are not present in order to reduce the accumulation of contaminants.

Molds and moisture

Molds produce tiny spores that travel through the air. Inhaling or touching mold or mold spores can cause allergic reactions or asthma episodes in sensitive individuals. In addition, mold exposure can irritate the eyes, skin, nose, throat, and lungs of students who are not allergic. Molds can grow on virtually any substance provided moisture is present. Although it is impossible to eliminate all molds and mold spores, mold growth can be minimized indoors by controlling moisture.

A variety of conditions can cause moisture problems in school buildings, including roof and plumbing leaks, condensation, and excess humidity levels. Portable classrooms and trailers are especially prone to moisture and mold problems.

Schools can control mold by systematically identifying sources of moisture, condensation, and standing water and taking action to ameliorate them. In one survey, 78 percent of schools with carpets reported using water-based carpet cleaning, which can lead to increased mold growth, but schools that used dry carpet cleaning had both lower mold levels and lower dust mite levels.116 Mold levels can also be reduced by removing carpet from areas with perpetual moisture, such as areas near drinking fountains and classroom sinks.

The West Virginia State Board of Education has adopted regulations recommending limited...
State Policy and Program Options

State policies focused directly on preventing general indoor air quality (IAQ) problems in schools are concentrated in a relatively small number of states. While there is no template or model policy used by states currently, many of the policies adopted so far demonstrate approaches that can help improve indoor air quality in schools. Some of these policies use existing administrative programs to focus attention on IAQ issues, while others create new programs. For example:

- **State school construction funding programs**, and their attendant approval processes, are a potentially powerful mechanism for focusing local attention on key elements of the design and construction process that affect the quality of the indoor environment.

- **School environmental or sanitary inspection programs** provide a vehicle for ensuring that schools undertake important, routine maintenance practices, as well as larger school repairs.

- **Some states have developed programs to provide financial aid for school repairs**, and they have used these programs to help ensure that schools adopt the routine maintenance necessary for preventing indoor air quality problems.

- **A number of states have developed formal training and education initiatives** aimed at building the capacity of local health and school officials to undertake key maintenance and school construction practices.

Environmental Law Institute

Ventilation systems

School ventilation systems must be properly designed, operated, and maintained if they are to dilute stale indoor air and remove pollutants. Heating, ventilation, and air-conditioning (HVAC) systems are designed to provide air at comfortable temperature and humidity levels and free from harmful concentrations of air pollutants. The mechanical processes of HVAC systems typically include bringing in outdoor air, conditioning and mixing the outdoor air with some portion of indoor air, distributing this mixed air throughout the school building, and exhausting some portion of the indoor air outside. Not all ventilation systems, however, are designed or able to accomplish all this; the quality of indoor air may deteriorate when one or more of these processes are inadequate.

In a 1995 U.S. General Accounting Office (GAO) survey of some 7,800 schools, 27 percent reported unsatisfactory ventilation, and almost 22 percent reported generally unsatisfactory indoor air quality. In addition, the EPA found that ventilation rates (the speed at which fresh air replaces stale air) in most schools are below recommended levels. A 1995 study by the California Energy Commission found that one out of every three classrooms tested had air exchange rates that were less than one-half of what was required to meet the baseline acceptable standard per occupant.
Animals in school

All warm-blooded animals, including small rodents and birds, produce dander, urine, feces, and saliva that can cause allergic reactions or trigger an asthma episode in sensitized children. The most common source of animal allergens in schools is from a classroom science project or school pet. The best policy is to prohibit all animals in classrooms, with the exception of seeing-eye dogs.

If keeping the school free of feathered or furred animals is not possible, such animals should be kept in localized areas and away from upholstered furniture, carpets, and stuffed toys. Sensitive individuals should be kept away from animals as much as possible. Students’ exposure to animal allergens can also be reduced by thorough and frequent cleaning of the entire school building. For an example of a school district policy regarding the presence of animals in schools, see the detailed Spokane (Washington) Public Schools safety and care guidelines at www.spokaneschools.org/Safety/pdf/AnimalsClassroom.pdf.

Standards for indoor air quality

Although the federal government promotes good indoor air quality through a variety of education, research, and grant programs, Congress has not established nationwide air quality standards or regulations for schools. State governments can step in to require, help, and encourage local districts and schools to devote attention and resources to

State of Vermont: An Act Relating to Toxic Materials and Indoor Air Quality in Vermont Public Schools

The [state] commissioners of buildings and general services, education, and health shall develop and distribute to each Vermont school a model school environmental health policy to be implemented under the direction of the building administrator or his or her designee, and which shall include, at a minimum, the following components:

(1) The formation of a school environmental health committee, which may be an existing safety or maintenance committee, consisting of a cross-section of the school community.

(2) An annual school environmental health audit of the school building and grounds which shall be reported to the [state] commissioner of health.

(3) The compilation of a recommended maintenance schedule and checklist for the school, summarizing when and how maintenance of heating and ventilation systems should occur.

(4) The establishment of a school environmental health management plan consistent with... the [state's] model school environmental health management plan which:
   (1) includes mechanisms to resolve hazardous chemical exposure and indoor air quality problems as they occur;
   (2) provides suggestions for communicating school environmental health status to building occupants and parents;
   (3) implements an integrated pest management and control program to minimize the risk of exposure in the school building and on school grounds;
   (4) provides for physical isolation of those toxic materials that cannot be eliminated from the school building or grounds; and
   (5) includes policies for emergency response, and incorporates methods to evaluate plan effectiveness.

Act 125, General Assembly of the State of Vermont (2000)
sound facility maintenance and management practices. The Environmental Law Institute notes that, “In the absence of a federal scheme regulating indoor air quality, states have ample room to develop creative approaches to improving the indoor environment of schools” (see box, “State Policy and Program Options,” on page 58).123

The enforcement of statewide air quality standards in school buildings can help to ensure that building systems are operating properly and that any deficiencies that may lead to serious air quality problems are corrected quickly. State education departments or other state agencies, local health departments, or school districts can carry out school inspection requirements if they are given the resources to do so. California, Maine, North Carolina, New York, Ohio, and Washington have each taken a different approach to establishing school inspection programs that focus on basic operations and maintenance practices.124

### State Policies on Pesticides in Schools

As of February 2005, NASBE’s online state school health policy database contained policies from 24 states regarding the use of pesticides on school property:

- Thirteen states (AK, CT, IN, LA, ME, MA, MN, NH, NM, OR, RI, TX, VT) impose limits on applying pesticides on school grounds.

- Sixteen states (IL, IN, KY, LA, ME, MD, MA, MI, MT, NJ, NM, PA, RI, TX, VT, WV) require schools to implement an integrated pest management (IPM) program. Four additional states (CA, CT, MN, WI) give school districts the option of implementing an IPM program.

- Eighteen states (AK, AZ, CA, CT, IL, IN, KY, ME, MD, MA, MI, MN, NH, NJ, NM, OR, PA, RI) require schools to notify staff and parents/guardians of students attending the school of pesticide applications before or after they occur. Twelve of these (AK, AZ, CA, ME, MD, MA, MT, NJ, OR, PA, RI, WI) also require schools to post signs indicating that pesticides have been or will be applied.

- Wisconsin requires schools to post signs indicating that pesticides have been or will be applied, but does not require that schools notify students’ parents/guardians.

### Air quality standards for new or renovated schools

According to a 1999 estimate by the U.S. Department of Education, the average age of the main instructional building(s) of public schools was 40 years, and the most recent renovation was 11 years prior.125 More recent data show that public school districts in the United States spent almost $20 billion on construction projects completed during the 2003 calendar year, of which 56 percent went into the completion of entirely new buildings. More than half of school renovation projects involved HVAC (heating, ventilating and air conditioning) systems.126

States can adopt minimum design and construction standards or requirements to help prevent indoor air quality problems from developing in new and renovated school buildings—particu-
larly if they are helping fund the construction. Key aspects of health-conscious building design and construction include selecting appropriate building shell features and HVAC systems, using materials that emit relatively low levels of volatile organic compounds, and employing air quality management practices during construction and renovation. Massachusetts, Minnesota, New Jersey, New York, Washington, and West Virginia have established school construction/renovation requirements that address air quality issues. Several organizations listed as resources offer detailed design suggestions.

**Pests and pesticides**

Waste products and secretions of cockroaches can cause allergic reactions or trigger asthma symptoms. Other pests that can trigger allergies include mice and rats, spiders, and yellow jackets. School kitchens and dumpsters are common breeding grounds for pests. Factors that contribute to the proliferation of pests include plumbing leaks, moisture problems, and improper food handling and storage practices.

Nevertheless, pesticides—powerful chemicals that kill pests, rodents, and insects in and around school buildings—must be used as little as possible and used carefully when necessary. Pesticides can be hazardous to human health, especially for people with asthma whose condition can be exacerbated by inhaling, ingesting, or having skin contact with the chemicals. Children are more sensitive to pesticides than adults.

Schools can use commonsense, low-cost integrated pest management (IPM) strategies that: 1) reduce sources of food, water and shelter for pests in school buildings and grounds; and 2) minimize the effects of pesticides on human health. Some researchers estimated that 70 to 93 percent of schools use pesticides and concluded that lack of awareness of IPM by staff and parents is one of the greatest challenges to the widespread implementation of IPM practices.

Schools in rural areas might be concerned about the drift of pesticides from nearby farms. The non-profit organization Beyond Pesticides recommends that in order to adequately protect against drift, state regulators should establish a two-mile-radius buffer zone against surface applications of farm pesticides and a three-mile-radius buffer zone against aerial applications effective at all times of the day. Beyond Pesticides reported that as of 2002, seven states (Alabama, Arizona, Louisiana, Massachusetts, New Hampshire, New Jersey, and North Carolina) restricted pesticide applications in areas neighboring a school, with buffer zones that range from 300 hundred feet to two miles. School officials should try to identify sources of pesticide

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**Examples of Integrated Pest Management Practices**

- Vegetation, shrubs and wood mulch should be kept at least one foot away from structures.
- Cracks and crevices in walls, floors, and pavement should be either filled or eliminated.
- Lockers and desks should be emptied and thoroughly cleaned at least twice yearly.
- Food-contaminated dishes, utensils, and surfaces should be cleaned by the end of each day.
- Garbage cans and dumpsters should be cleaned regularly.
- Litter should be collected and disposed of properly at least once a week.
- The problem or pest should be [definitively] identified before taking action.
- Fertilizers should be applied several times during the year (e.g., in spring, summer, and fall), rather than in one heavy application.
- If pesticides are necessary, use spot treatments rather than area-wide applications.
Air Quality Index

The Air Quality Index (AQI) is the standard system that state and local air pollution control programs use to notify the public about levels of air pollution. The AQI tracks levels of two types of pollutants—ozone (smog) and particle pollution (tiny particles from ash, vehicle exhaust, soil dust, pollen, and other sources). AQI levels are reported year-round, as particle pollution can be a health threat any month.

Air pollution levels are measured daily in over 700 U.S. counties and ranked on a scale of 0 for pristine air to 500 for levels that pose immediate danger to the public. The AQI breaks air pollution levels into six categories, each of which has a descriptor (name), an associated color, and an advisory statement:

<table>
<thead>
<tr>
<th>Index value</th>
<th>Descriptor</th>
<th>Color</th>
<th>Advisory</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 50</td>
<td>Good</td>
<td>Green</td>
<td>None</td>
</tr>
<tr>
<td>51 to 100</td>
<td>Moderate</td>
<td>Yellow</td>
<td>Unusually sensitive individuals should consider limiting prolonged outdoor exertion</td>
</tr>
<tr>
<td>101 to 150</td>
<td>Unhealthy for sensitive groups</td>
<td>Orange</td>
<td>Children and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion</td>
</tr>
<tr>
<td>151 to 200</td>
<td>Unhealthy</td>
<td>Red</td>
<td>Children and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else should limit prolonged outdoor exertion</td>
</tr>
<tr>
<td>201 to 300</td>
<td>Very unhealthy</td>
<td>Purple</td>
<td>Children, active adults, and people with respiratory disease, such as asthma, should avoid outdoor exertion; everyone else should limit outdoor exertion</td>
</tr>
<tr>
<td>301 to 500</td>
<td>Hazardous</td>
<td>Maroon</td>
<td>Everyone should avoid all physical activity outdoors</td>
</tr>
</tbody>
</table>

Air quality forecasts are often included as part of the local weather forecast on TV or radio or in local newspapers. The U.S. Environmental Protection Agency (EPA) issues year-round AQI forecasts for most states online at www.epa.gov/airnow. These forecasts include animated pictures of ozone and particle pollution levels superimposed over a national map.

Outdoor environmental triggers

School leaders also need to pay attention to issues regarding outdoor air quality. Students with asthma, allergies, or other respiratory illnesses can be exposed to environmental triggers such as air pollution (particulates and ozone), pollen, second-hand smoke, and cold air when they are outside for recess, physical education, sports, or field trips, or while waiting for transportation.

All students, including students with asthma, need adequate amounts of physical activity.
every day. A student’s asthma action plan should detail the accommodations that the student may need to participate in outdoor physical activity, such as medications to be taken prior to the activity, activity modifications, or avoidance of certain environmental triggers. As discussed earlier (pages 46 to 48), schools also need to ensure that students with asthma have immediate access to quick-relief asthma medications.

Each school or school district office should designate a person to check the Air Quality Index (AQI) and local pollen levels on a daily basis. Students who are sensitive to air pollutants or pollen might need to curtail their outdoor activities or stay in air-conditioned spaces on days when the AQI is at level orange (“unhealthy for sensitive groups”) or higher. When this happens, schools need to provide them with alternate opportunities for physical activity.

When outdoor air pollution reaches level red (“unhealthy”) or higher, all children should curtail either their duration of time spent

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**Recommended Actions for School Districts to Reduce Diesel Pollution**

- When school bus drivers arrive at loading or unloading areas to drop off or pick up passengers, they should turn off their engines as soon as possible to reduce idling time and emission harmful pollutants. The school bus should not be restarted until it is ready to depart.

- If buses need the engine to run flashing lights during longer-duration loading and unloading, mechanics can install an extra battery and change the buses’ circuit configurations so that the flashing lights can be powered by the battery without the engine running.

- At school bus depots, idling time during early morning warm-up should be limited to what is recommended by the manufacturer and/or permitted by state anti-idling laws (generally three to five minutes). In colder climates, block heaters, which plug into electrical outlets, can help warm the engine to avoid starting difficulties and shorten the engine’s warm-up time.

- In the winter, schools can designate a location inside the school where bus drivers who arrive early can wait.

- Ensure that school buses are regularly maintained.

- Make sure everyone understands the importance of the new guidelines.

- Inform drivers of the potential risk to their health from breathing diesel exhaust and the benefits of not idling.

- Establish a program to recognize the cooperation of drivers, such as the distribution of buttons to drivers who pledge to follow the guidelines.

School buses typically burn approximately half a gallon of diesel fuel for each hour they idle. If a school district operates 50 buses, each bus reduces its idling time by 30 minutes per day, and diesel fuel costs $2 per gallon, the district would save over $4,000 per school year in fuel costs.

*U.S. Environmental Protection Agency*
State Policies on Environmentally Safe School Buses

NASBE’s online state school health policy database includes policies from Minnesota, Rhode Island, and West Virginia that require school bus operators to minimize idling and load and unload children at sufficient distance from school buildings to prevent diesel fumes from being drawn into school ventilation systems. Many other states have general anti-idling laws that address all drivers.

Within their detailed specifications for school bus construction, Iowa and Wyoming require that buses be "reasonably dust proof."

Resources

➢ The National Clearinghouse for Educational Facilities (NCEF) offers numerous design and planning resources for schools, including a resource list for healthy school environments with more than 150 items at www.edfacilities.org/rl/healthy_schools.cfm.

➢ The U.S. Environmental Protection Agency (EPA) maintains a comprehensive website on healthy school environments (www.epa.gov/schools), which offers information and resources developed by federal agencies, state and local governments, and non-governmental organizations. Other pertinent EPA resources:

• The Healthy School Environments Assessment Tool is a free, comprehensive database program to help school districts establish and manage comprehensive school facility self-assessment.

outdoors or the intensity of their outdoor activities. The American Lung Association, relying on expert guidance, recommends that on red days schools limit outdoor student activity to one hour of heavy exertion, that is, activity that requires high intensity workouts such as basketball, soccer, or running. Sports programs can practice skills-building exercises instead of endurance training, schedule practice early in the day before ozone levels rise, rotate players frequently, take breaks often, or hold practice and games inside.

Schools can minimize students’ exposure to other outdoor triggers at little or no cost. For example, all tobacco use should be prohibited on school grounds and at all outdoor events. Classroom windows should be closed when grass is being cut, or better yet, grass can be cut after school hours or on weekends when students are not present.

Diesel exhaust

Some 86 percent of the nation’s roughly 450,000 school buses use diesel engines, a durable and economical source of power. However, idling school buses can produce concentrated exhaust emissions at ground level that can enter the passenger compartments of the buses and the school buildings they park next to. Diesel exhaust particulates, some of which are smaller than 2.5 micrograms in diameter, can easily irritate a person’s respiratory tract and cause asthma episodes.

The EPA recommends that school districts and school bus companies work together to develop policies to reduce school bus idling, establish idling guidelines for bus drivers, and either retrofit existing buses with pollution control equipment or replace older buses with newer, cleaner buses (see box on page 63).
Checklist of Best Practices

**Existing Buildings: MAINTAIN for HEALTH**

- ✓ Stop/prevent leaks; replace wet and damaged materials
- ✓ Wash floors and frequently touched surfaces with nontoxic cleaning products
- ✓ Prevent/control pests and weeds naturally
- ✓ Switch to nontoxic teaching supplies
- ✓ Inspect and clean heating, ventilating, and A/C systems
- ✓ Control/remove asbestos, radon, lead, arsenic, mercury, and persistent organic pollutants like PCB’s and phthalates
- ✓ Dispose of dangerous lab chemicals such as mercury, formaldehyde, or explosives

**New Buildings: DESIGN for HEALTH**

- ✓ Site new facilities for walking and biking to school, and for quiet, safe outdoor areas
- ✓ Keep site and building materials dry; design to prevent moisture build up inside
- ✓ Use natural daylight, natural ventilation, operable windows
- ✓ Design and furnish areas for easy cleaning, maintenance, and storage; avoid carpets
- ✓ Design to minimize noise and reverberation with ceiling designs or tiling
- ✓ Don’t use building products with persistent pollutants or other toxics
- ✓ Protect occupant health during renovations; air out spaces prior to use.138

For more information, call 1-800-438-4318. The entire kit can be downloaded at [www.epa.gov/schools1/assessment-tool/index.html.](http://www.epa.gov/schools1/assessment-tool/index.html).

- The **Indoor Air Quality (IAQ): Tools for Schools Action Kit** provides teachers, staff, and administrators with information about common sources of indoor air quality problems and ways to improve poor air quality at little or no cost using simple-to-follow checklists and in-house staff. Schools, districts, and nonprofit groups can receive a copy at no cost by faxing a request on letterhead to (703) 356-5386. For more information, call 1-800-438-4318. The entire kit can be downloaded at [www.epa.gov/iaq/schools/toolkit.html.](http://www.epa.gov/iaq/schools/toolkit.html)

- EPA’s **Mold Resources** webpage provides information and guidance for schools on how to clean up mold problems and how to prevent mold growth. Go to [www.epa.gov/iaq/molds/moldresources.html.](http://www.epa.gov/iaq/molds/moldresources.html)

- **Integrated Pest Management in Schools: A How-To Manual** is designed to encourage and help school officials to examine and improve their pest management practices. It identifies ways to reduce the use of pesticides in school buildings and on school grounds, as well as alternative methods of managing pests commonly found in schools. Go to [www.epa.gov/pesticides/ipm.](http://www.epa.gov/pesticides/ipm)

- The **Clean School Bus USA** website ([www.epa.gov/cleanschoolbus](http://www.epa.gov/cleanschoolbus)) contains extensive information and guidance concerning diesel school buses.
Healthy Schools Network, Inc., a national not-for-profit organization, operates a clearinghouse with numerous guides, materials, and reports on school environmental health issues. Go to www.healthyschools.org.

The American Association of School Administrators (AASA) recently updated *Schoolhouse in the Red: An Administrator’s Guide to Improving America’s School Facilities and Environment* that reviews promising practices for addressing school facilities and the school environment. Copies can be obtained by contacting AASA’s asthma wellness project at (703) 875-0731 or by visiting www.aasa.org/issues_and_insights/healthy.

The Indoor Health and Productivity (IHP) project aims to develop a better understanding of the relationship between the physical attributes of schools and student academic performance. Visit www.dc.lbl.gov/IHP.

The Environmental Law Institute (ELI) produced *Healthier Schools: A Review of State Policies for Improving Indoor Air Quality* (2002), a detailed assessment of the types of policy strategies used by states in addressing general indoor air quality problems. This document can be obtained by calling (202) 939-3800 or going to www.elistore.org/reports_detail.asp?ID=56. The ELI also has a database of state laws that addressed school indoor air quality as of December 2003 at www.eli.org/research/iaqdatabases2004.

The National Association of School Nurses (NASN) offers *Managing Asthma Triggers* (MAT), a series of short programs for school nurses to educate school staff about asthma and asthma-related topics like indoor air quality, triggers, animals in the classroom, and exercise-induced asthma. For more information visit www.nasn.org.

The Institute of Medicine (IOM) of the National Academy of Sciences published *Clearing the Air: Asthma and Indoor Air Exposure* (2000), which provides information about the role that indoor air pollution plays in asthma causation, prevalence, triggering, and severity. The book can be ordered at (800) 624-6242 or accessed online at www.nap.edu/books/0309064961/html.

The Center for Health, Environment and Justice (CHEJ) offers *Creating Safe Learning Zones: The ABC’s of Healthy Schools* (2002), which was prepared by the Healthy Buildings committee of the Child Proofing Our Communities campaign. Call (703) 237-2249 to order the document, or download it at www.childproofing.org/ABC.pdf.

CHEJ has also produced *Green Flag Schools: The School Environment Survey* to help uncover facts about what a school does well and what a school can improve. Go to www.greenflagschools.org.


Selected state resources:

The Minnesota Department of Health has created the *IAQ Management Plan Development Package*, which includes a step-by-step guide to the development of a district-specific plan; checklists to be used to evaluate school buildings, classrooms, ventilation systems, and maintenance activities; and written policies that can be tailored according to the specific needs of a district. Access the package at www.health.state.mn.us/divs/eh/indoorair/schools.

The Wisconsin Department of Natural Resources operates a comprehensive website on the Wisconsin Green and Healthy Schools program at http://dnr.wi.gov/org/caer/ce/greenschools. Its
suite of 10 assessment tools addresses energy, waste and recycling, mercury, water, indoor air quality, integrated pest management, chemicals, transportation, facilities and grounds, and community involvement. The program connects to many of the Wisconsin Model Academic Standards in environmental education, science, and social studies.

The California Division of the State Architect (DSA) maintains a website called Sustainable Schools at www.sustainableschools.dgs.ca.gov/sustainableschools to promote school buildings that improve students’ comfort, satisfaction, and health while protecting ecosystems and saving energy and resources. The site contains a diverse collection of resources, guidelines, programs, case studies, and relevant publications.

The Massachusetts Department of Public Health (MDPH) coordinates the interagency Healthy Schools Council, which was tasked with identifying a list of the most important environmental health and safety issues for schools to address. In 2003, the council issued a multi-agency/multi-media checklist addressing these issues that can be accessed at www.state.ma.us/dph/hea/iaq/schools/schools.htm.

The Washington State Department of Health and the Superintendent of Public Instruction jointly produced the Health and Safety Guide for K-12 Schools in Washington (2003) that addresses school operation and maintenance, repairs and minor construction, school administrative organization and lines of communication, and practices that can be undertaken during the design, construction, renovation, operation, maintenance, or inspection of any school. Go to www.k12.wa.us/SchFacilities/HealthSafetyGuide.aspx.

The Vermont Department of Health operates a school environmental health website at www.healthyvermonters.info/act125/act125.shtml that provides information, model policies, and best practices to help schools achieve the goals of the state’s school indoor air quality law.

The California Department of Pesticide Regulation (DPR) maintains a website with a variety of documents, web links, and other resources related to integrated pest management in schools. Go to www.schoolipm.info.

The Massachusetts Public Health Association (MPHA) operates a website that lists resources to help school officials maintain healthy indoor air environments, reduce toxins in schools, build green schools, and follow applicable laws and regulations. Go to www.mphaweb.org/pol_schools.html.
Policy Checklist

Following is a summary list of key policy points addressed in this chapter. Note that policies may be at the state, school district, or school level depending on the governance system.

Comprehensive asthma program (see page H-5)

- A comprehensive plan for the prevention and management of asthma has been prepared in partnership with families, health care providers, and community agencies that includes:
  - asthma awareness education for students taught by well-prepared and well-supported teachers;
  - professional development for all school staff on basic asthma information, asthma management practices, and emergency response procedures;
  - procedures to identify students with diagnosed asthma;
  - procedures to use existing or develop individualized asthma action plans;
  - procedures for the secure storage and correct administration by school staff of students’ prescribed medications;
  - allowance for competent students to possess and self-administer prescribed medications (if permitted by state law);
  - the complete elimination of tobacco smoke from school buildings and school grounds at all times;
  - procedures to identify and minimize other asthma triggers in and around school buildings; and
  - procedures for the ongoing evaluation of policies, procedures, and services.

- Specific school personnel are designated to implement the comprehensive asthma plan and conduct ongoing evaluation activities.

- Progress reports and recommendations for program improvement are regularly submitted to _______.

Education and staff development about chronic health conditions (see page H-18)

- Lessons on common chronic health conditions, how students can support classmates with such conditions, and critical steps anyone should take in a medical emergency are incorporated into K-12 comprehensive health education.

- Lessons on human body systems and chronic health conditions are appropriately integrated into science, physical education, and other subject areas.

- Students are encouraged to become involved with community activities and events that promote public awareness of chronic health conditions.

- Students with chronic health conditions are taught the knowledge and skills necessary to adhere to self-care disease management plans.
All school personnel participate in professional development to provide appropriate support for students with chronic health conditions and to respond appropriately to health emergencies.

**Individual student plans (see page H-25)**

- Students who have chronic health conditions that can affect their academic performance or who have a record of experiencing health problems at school are systematically identified and monitored.
- The educational placement, health services, and special accommodations needed by students with chronic health conditions are determined on a case-by-case basis and documented in periodically updated written plans.
- Information about students’ educational support and emergency response needs is shared with appropriate school staff on a “need to know” basis, with due concern for medical confidentiality and respect for parents’ and students’ privacy rights.
- Professional development opportunities, support, and supervision necessary to implement the above procedures with fidelity are provided to school personnel.

**School health services (see page H-36)**

- Appropriate school personnel are authorized to administer basic first aid, urgent care, medications, health status monitoring, and other routine health care services.
- School personnel who administer health care services are appropriately qualified, licensed (if applicable), trained, equipped, supported, and supervised.
- School health personnel coordinate the provision of health care services with students’ primary health care providers and home caregivers.
- Prescribed medications and medical procedures are administered to students in a safe, reliable, effective, and timely manner.
- Authorized students are permitted to carry and self-administer prescribed medications and perform prescribed medical procedures without adult supervision (if permitted by state law).
- Medications and medical equipment are safely, securely, and confidentially stored with due regard for expiration dates and safe disposal procedures.
- Necessary equipment and medications for the rapid response of properly trained school personnel to cases of anaphylactic shock and other health emergencies at school are procured, safely stored, and maintained.
- All medications administered and medical procedures performed at school are thoroughly documented.
- The confidentiality of personal health and mental health information is maintained in accordance with state and federal laws and the ethical standards of medical practice.
- School health personnel implement strategies to recover reimbursable health services costs.
Healthy School Environments (see page H-51)

- Environmental factors are systematically and periodically assessed that can enhance or detract from student learning and comfort, including lighting, ventilation, temperature, noise, availability of drinking water, and sanitation facilities.

- Environmental factors are systematically and periodically assessed that are potentially hazardous to human health, including tobacco smoke, pests, mold, pollen, dust mites, animal dander, chalk dust, cleaning agents, personal care products, volatile organic chemicals (VOCs), laboratory chemicals, unvented fumes, vehicle exhaust, asbestos, lead and other substances in drinking water, arsenic-treated lumber, and radon.

- Maintenance schedules for the clean and efficient operation of heating, ventilation, and plumbing systems are complied with.

- Cleaning agents and other hazardous chemicals are stored in physically isolated locations, used safely, and properly disposed of.

- Integrated pest management (IPM) and control programs designed to prevent pest infestations and minimize human exposure to pesticides are implemented in school buildings and on school grounds.

- Live animals with fur or feathers are not allowed inside classroom buildings (except for assistive animals such as seeing-eye dogs).

- Human exposure to diesel exhaust from school buses and other vehicles is minimized.

- Outdoor air quality is monitored daily and students are provided indoor alternatives for physical activity on days of poor air quality.

- Mechanisms are established to resolve cases of hazardous chemical exposure and air and water quality problems as they occur.

- Environmental quality standards have been established for school construction and renovation projects.

- No student, staff member, or school visitor is permitted to smoke, inhale, dip, or chew tobacco at any time, including non-school hours, in any building, facility, or vehicle that is owned, leased, rented, or chartered; on any school grounds including athletic fields and parking lots; or at any off campus school-sponsored event.

- Students are not permitted to possess a tobacco product or promotional item while on school property or to leave the school campus during the school day to use a tobacco product.

- Students, families, education personnel, and school visitors are notified of the tobacco-free policy in handbooks and newsletters and via posted notices or signs.

- Students and staff who violate tobacco-free policies are subject to disciplinary action.
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