



POLICY STATEMENT

Medical Emergencies Occurring at School

Council on School Health

Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of All Children

ABSTRACT

Children and adults might experience medical emergency situations because of injuries, complications of chronic health conditions, or unexpected major illnesses that occur in schools. In February 2001, the American Academy of Pediatrics issued a policy statement titled "Guidelines for Emergency Medical Care in Schools" (available at: <http://aappolicy.aappublications.org/cgi/content/full/pediatrics;107/2/435>). Since the release of that statement, the spectrum of potential individual student emergencies has changed significantly. The increase in the number of children with special health care needs and chronic medical conditions attending schools and the challenges associated with ensuring that schools have access to on-site licensed health care professionals on an ongoing basis have added to increasing the risks of medical emergencies in schools. The goal of this statement is to increase pediatricians' awareness of schools' roles in preparing for individual student emergencies and to provide recommendations for primary care and school physicians on how to assist and support school personnel. *Pediatrics* 2008;122:887–894

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Key Words

school, medical emergency, emergency care plan

Abbreviations

AAP—American Academy of Pediatrics
EMS—emergency medical services
CPR—cardiopulmonary resuscitation
AED—automated external defibrillator
EMT—emergency medical technician
IHP—individualized health plan
IEP—individualized education plan
ECP—emergency care plan

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RATIONALE

Many schools lack a licensed health care professional on site to respond to individual student medical emergencies. Injuries are the leading cause of death and disability in the United States, especially among children, with 70% of injury deaths occurring in school-aged youth (5–19 years of age).¹ It is estimated that 10% to 25% of injuries to children occur while they are in school.² In addition to injury-related emergencies, status asthmaticus, diabetic crises, status epilepticus, sudden cardiac death, and other medical emergencies can occur in students and staff at school. The prevalence of children with special health care needs attending schools means that there now exists a pool of students with a broad range of medical conditions that may require special equipment, preparation and training of personnel, medications and supplies, and/or transport decisions and arrangements.³ This statement highlights the role of school personnel, the school health and safety team (school nurse, social worker, school resource officer), school physician, and primary care clinician in each step in the process of managing individual student emergencies occurring at school. It is important to note that there is a fundamental link between emergency readiness and disaster preparedness. Schools that are prepared for an emergency in an individual are more likely to be prepared for complex events such as community disasters. Disaster planning in schools is covered in a separate policy statement from the American Academy of Pediatrics (AAP), "Disaster Planning for Schools."⁴ It is helpful to view these 2 policies together to appreciate the full spectrum of school emergency planning.

BACKGROUND

The average school-aged child spends 28% of the day and 14% of his or her total annual hours in school.² There are 72.3 million children younger than 18 years living in the United States (according to the 2000 US Census). The Maternal and Child Health Bureau of the US Department of Health and Human Services estimates that of this group, 18 million children and adolescents have special health care needs or a chronic illness. Children with special health care needs or chronic illness account for 25% of the pediatric patients seen in hospital emergency departments each year.³ Despite its critical importance, school emergency preparedness is frequently inadequate because of barriers such as geographic and physical facility conditions, staffing, staff education and training, and financial resources.

Schools across the nation vary tremendously in their degree of preparedness to deal with emergencies. A survey of schools in rural New Mexico found that schools, particularly in larger communities, were ill prepared to deal with emergencies in students or staff as assessed by evaluating equipment and emergency training (communities with

populations of <200 000 were more likely to have equipment available).² Oxygen was available in only 20% of the surveyed schools, epinephrine was available in only 16%, artificial airways were available in only 30%, cervical collars were available in only 22%, and splints were available in only 69%. Annually, 67% of schools activate emergency medical services (EMS) systems for an emergency involving a student, and 37% activate EMS for an emergency involving an adult. EMS response time was less than 10 minutes for 84% of the schools.²

A national survey of 573 school nurses conducted by Olympia et al⁵ revealed that 68% of the school nurses managed a life-threatening emergency requiring EMS activation in the school year before the survey. Although 86% of the surveyed schools reported having a medical emergency-response plan, 35% of the schools had not tested it during a drill.

Regional statistics demonstrate that injuries are the chief complaint listed for two thirds of EMS dispatches to schools. Medical emergencies, such as breathing difficulties and seizures, account for one quarter of school calls to the EMS system.³ Compared with non-school-based EMS incidents, school-based EMS incidents are more often attributable to injury, are frequently related to a sporting activity, and are more likely to result in transport to a medical facility.⁶ Even in the case of children with special health care needs, approximately half of EMS responses are unrelated to the child's special needs and include traditional causes of EMS calls, such as an acute injury.¹

Another critical factor in the preparedness of schools for emergencies is medical, nonmedical, and students' training. School medical emergencies can involve students, adults, staff members, or attendees of special events. Because injuries are the most common life-threatening emergencies encountered by children and adolescents inside or outside schools, teachers, school nurses, physicians, athletic trainers, coaches, and students should know general principles of first aid and cardiopulmonary resuscitation (CPR). In a survey of all high schools in Washington State, 80% of teachers thought that CPR training was important, yet 35% of the schools provided no CPR training for students.

The goal of this statement is to increase the pediatric clinician's awareness of the role that schools play in preparing for and responding to the individual student emergency. Recommendations and resources will be provided to assist primary care clinicians and school physicians in supporting schools in this role. The management of individual emergencies is linked to the preparation for large-scale community emergencies.⁴ Resources, linkages with EMS, and staff training are all vital to emergency preparedness. It is really the scale and terminology that distinguish the response to an individual emergency from the response to a disaster. The terminology of mitigation and prevention, preparedness, response, and recovery⁷ is generally not used for individual emergencies but reserved for large-scale disasters. However, in individual emergencies, the emphasis is less

on prevention and more on preparedness and response. The following reflects the role that schools play in these aspects of individual emergency response.

DESCRIPTION OF THE SCHOOL'S ROLE

Readiness for Response

Any child can have a medical emergency in school. Children with special health care needs carry additional risks of emergencies related to their diagnoses. From injury to anaphylaxis to status epilepticus, schools are expected to anticipate and prepare to respond to a wide variety of emergencies.^{8,9}

General Preparation

Ideally, schools develop emergency policies with input from the medical community—both EMS and community clinicians. These policies need to be flexible enough to accommodate different students' developmental levels. Integration of EMS into school emergency planning familiarizes them with the location and type of medical resources available at the school. This collaboration leads to the creation of policies and regulations that appropriately delegate authority, assign roles, distribute shared resources, and establish parameters for health care providers. The range of possible policies can vary from general emergency management to use of CPR and automated external defibrillators (AEDs) to life-threatening allergy management; these are discussed briefly below.

- Policies, regulations, and protocols are created to cover all aspects of school jurisdiction, from classroom to playground, school-based health centers (if one is available), before- and after-school programs, field trips, transportation, and athletic events. These are to be clearly stated and communicated to all school staff and parents. Table 1 provides some resources for the creation of such policies.
- Emergency data are to be collected on all children and include parental contact, health care provider contact, medical conditions, medications, allergies, and insurance. Information technology could facilitate the collection, storing, and transfer of these data.
- Protocols should include algorithms for determining levels of emergencies. Minor illnesses or injuries are to be distinguished from emergencies that require EMS activation.
- It is important that the EMS-activation process is clear to all staff. This process ensures accessible and appropriate transportation and care during transport to a hospital or other appropriate medical facility.¹⁰ Although EMS traditionally is thought of as emergency medical technicians (EMTs) and ambulances, it really encompasses prehospital through emergency department management. Therefore, in the event of a medical emergency within school jurisdiction, EMS include school nurses and school staff. Ongoing communication, review, and practice of procedures ensure achievement of this level of integration.

TABLE 1 Selected Emergency-Preparedness Resources and Links

General resources	
AAP Council on School Health	www.schoolhealth.org
American Heart Association: School emergency-response plan	"Response to Cardiac Arrest and Selected Life-Threatening Medical Emergencies: The Medical Emergency Response Plan for Schools," www.americanheart.org/presenter.jhtml?identifier=3017969
National Association of School Nurses	www.nasn.org
American Heart Association	www.americanheart.org
Emergency Medical Services for Children National Resource Center	www.childrensnational.org/emsc
Food Allergy & Anaphylaxis Network	www.foodallergy.org
National Asthma Education and Prevention Program, American Diabetes Association, American School Health Association, Epilepsy Foundation, Food Allergy & Anaphylaxis Network, and National School Boards Association	"Students With Chronic Illnesses: Guidance for Families, Schools and Students," www.nhlbi.nih.gov/health/public/lung/asthma/guidfam.htm
Asthma: general information	Lung diseases information, www.nhlbi.nih.gov/health/public/lung/index.htm "Is the Asthma Action Plan Working? A Tool for School Nurse Assessment," www.nhlbi.nih.gov/health/prof/lung/asthma/asth_act_plan_frm.htm Managing Asthma in the School Environment, www.epa.gov/iaq/schools Schooled in Asthma, www.schoolhealth.org/asthma_materials.cfm "Suggested Emergency Protocol for Students With Asthma Symptoms," http://rover.nhlbi.nih.gov/health/prof/lung/asthma/sch-emer-protocol.htm "When Should Students With Asthma or Allergies Carry and Self-administer Emergency Medications at School?" http://rover.nhlbi.nih.gov/health/prof/lung/asthma/emmer_medi.htm
Disease-specific action plans	
Asthma action plans	Schooled in Asthma, www.schoolhealth.org/content/Asthma%20Action%20Plan.pdf Agency for Healthcare Research and Quality: quality tools, www.qualitytools.ahrq.gov/summary/summary.aspx?doc_id=6123 Asthma patient action plan, http://schoolasthmaallergy.com/html/toolkit/library/AsthmaActionPlan.pdf
Diabetes action plans	"My Diabetes Action Plan," www.diabetes.com/pdfs/action_plan.pdf Emergency action plan: diabetes health care, www.dhss.mo.gov/diabetes/DMEmergencyAction.pdf Diabetes health care emergency action plan, www.childrenwithdiabetes.com/d_0q_510.htm
Seizures emergency action plan	Epilepsy Foundation: school nurse training program, www.epilepsyfoundation.org/programs/schoolnurse/schoolnurse.cfm
Allergy action plan	Food allergy action plan, www.foodallergy.org/actionplan.pdf
Children with special health care needs emergency information form	Emergency preparedness for children with special health care needs, www.pediatrics.org/cgi/content/full/104/4/e53
National Association of School Nurses	"Emergency Care Plans for Students With Special Health Care Needs," www.nasn.org/Default.aspx?tabid=220 "Preparing for School Emergencies," www.nasn.org/Default.aspx?tabid=238
Pediatric first aid for caregivers and teachers	PedFACTS Online, www.pedfactsonline.com ; also available through the AAP Bookstore, www.aap.org/bst/showdetl.cfm?&DID=15&Product_ID=4107 www.aap.org/bst/showdetl.cfm?&DID=15&Product_ID=3934
<i>Managing Infectious Diseases in Child Care and Schools: A Quick Reference Guide</i>	

- Participation of physical facilities administrators in the planning ensures that the most efficient access routes to the school, as well as floor plans, are available to EMS.
- Clarity of school staff roles in an emergency is essential for smooth response. Ideally, the school nurse in each building should be the key person to develop and implement the emergency plan, because the nurse is the staff member who is most skilled and familiar with individual students' health issues and community resources. In the absence of a school nurse, members of the school health and safety team (social worker, school resource officer) are designated, trained, and empowered to make decisions concerning health emergencies. Names, telephone numbers, and locations of these designated and trained school personnel are to be provided to all staff members.
- The development of campus-wide communication strategies (2-way radios, pagers, cell phones) is key so that staff members are accurately informed and rumors are minimized, which is especially important in the event of an incident involving violence.
- Schools can determine if using trained students in an emergent situation is feasible within the constraints of confidentiality. These students may maximize limited resources by being used as runners, for mobilizing equipment, helping in evacuation, or providing escorts to response agencies not familiar with school grounds. It is important to define their role ahead of

time, guarantee adequate training, include them in the plan, and practice executing the plan.

- Periodic drills with local EMS and hospital emergency departments are essential components of preparedness. This process allows schools to better understand their barriers to good EMS care, and in turn, EMS professionals get a preemergency look at school operations and physical structure, which allows problem solving to begin before any emergency or crisis.³
- The availability of sufficient supplies to address an individual emergency is of utmost importance. A complete emergency medical kit that is secure, carefully organized, and monitored by protocol should be accessible for use by authorized and trained school staff members who have volunteered to serve in an emergency.¹⁰ In 2003, a national consensus group that included the AAP was convened by the Emergency Medical Services for Children National Resource Center and the National Association of School Nurses and published a report titled “Recommended Minimal Emergency Equipment and Resources For Schools: National Consensus Group Report.”¹¹ This report is a valuable reference for putting together an emergency medical kit.¹
- All equipment should be maintained and inspected at appropriate intervals. If an AED is available on site, an AED maintenance, testing, and repair program is to be incorporated into the AED emergency-response protocol.¹
- Staff development and training is essential for responding to a medical emergency. Human resources policies and regulations may determine to what extent and capacity staff may respond to an emergency. However, there are certain basics in which all staff members can participate.
- It is important that universal precautions be discussed with the entire staff at the beginning of each year.
- Basic response to emergent situations is to be discussed with the entire staff. This discussion should include responses to large-scale emergencies and minor problems. Because parents have the right to limit medical information given to schools, it is prudent to give general response guidelines for seizures, fainting, bleeding, anaphylaxis, choking, and head trauma so that staff members can become more comfortable with initiating an emergent response even if they are not aware that the child has a medical concern.
- Some staff members may opt for more in-depth training, and it is recommended that at least 1 staff member, in addition to the school nurse, have CPR and first aid training.¹
- Schools determine if a school staff member accompanies the student to the hospital. If a staff member is to accompany the student, the school must develop policy to clarify when the staff member assumes “in loco parentis” (in-the-absence-of-parents status).

- It is preferable that multiple back-up numbers for emergency contacts be available for each student’s family.

Preparation for Children With Special Health Care Needs

- Students and staff members with chronic medical conditions or other special health care needs are more susceptible to medical emergencies and require schools to have a heightened sense of readiness. Students should have an updated individualized health plan (IHP) prepared by the school nurse with input from the family and the primary care clinician. The IHP contains information on medications, activity levels, dietary needs, equipment, transportation, and other accommodations. Using this information, the school can then plan for accommodations for daily classroom activity, field trips, and emergency needs of the student. The IHP can assist school teams in developing individualized education plans (IEPs) or 504 plans.
- Individual emergency care plans (ECPs), developed from information in the IHP, are to be copied and made available for transport with the child if he or she requires hospital treatment and/or management in the event of a community-wide disaster. The emergency information form, developed by the AAP and the American College of Emergency Physicians, is useful in developing both an IHP and an ECP.¹² Unlike IHPs and ECPs, both a 504 plan and an IEP are formal, legal documents, which means that the school is legally bound to implement the elements of the plans. A 504 plan is an agreement between a student’s legal guardian and a school district that the student will have full access to all school activities and will have his or her medical needs met.
- Any equipment or medication required for emergency management of a student or staff member (eg, evacuation chair or epinephrine autoinjector) is to be easily accessible.
- Staff who care for students with special needs should have an awareness of the illnesses and be trained to respond to emergencies (eg, seizures, asthma, diabetic ketoacidosis, hypoglycemia, sickle crisis) until a health care professional arrives. This capacity is especially important in the event of a community disaster in which the EMS, prehospital emergency-response system may not be readily available.
- As stated previously, some parents may opt not to disclose a child’s disability to teachers out of concern about stigmatization. In these cases, basic awareness training to all staff at the beginning of the year is a prudent approach.

Policies and Procedures for Specific Emergencies

- Life-threatening allergic reactions, particularly related to food triggers, are increasing in schools.^{9,13} It is very important that schools have policies, procedures, and protocols for addressing the response to such inci-

dents. School procedures must comply with state and local regulations for administration of epinephrine autoinjectors by nonlicensed personnel.

- Use of CPR and AEDs is a valuable addition to school emergency response.^{14,15} An AED program is to be covered by a school policy,¹⁶ and staff members who are trained for such use are to be able to respond effectively to first aid and cardiopulmonary emergencies. Sudden cardiac arrest has an estimated annual incidence of 0.7 to 1.0 per 1000 population^{17–20} and is responsible for >50% of all deaths attributable to cardiovascular disease in the United States. If no CPR is provided, each minute that defibrillation is delayed decreases the chances of survival for victims of sudden cardiac arrest attributable to ventricular fibrillation by 8% to 10%.^{21,22} High school athlete sudden death is rare. When sudden death of an athlete does occur, it is more likely to affect collegiate than high school athletes. However, sudden cardiac deaths in adult spectators have been reported, and schools need to prepare for them. Professional and collegiate sporting venues typically use emergency medical response teams for spectator care coverage.^{23,24} High school event coverage is less organized and typically falls under the responsibility of the athletic director or school administrators.^{17–20} Many national agencies that provide certified training programs exist. The American Heart Association's medical emergency-response plan for schools describes the core elements of such a program (Table 2).^{1,25,26}
- Communicable-disease emergencies involve exposures for which there needs to be contact tracking and management. Protocols for varicella, pertussis, measles, methicillin-resistant *Staphylococcus aureus*, and meningococcal meningitis exposures are developed in conjunction with local health departments.
- Protocols for responding to specific emergencies (eg, head trauma, choking, lacerations) are helpful to school nurses or designated staff. The Illinois Emergency Medical Services for Children program has an online manual that provides algorithms for managing specific school emergencies.²⁷

TABLE 2 American Heart Association Medical Emergency-Response Plan for Schools^{2,23,24}: 5 Core Elements of the American Heart Association Plan

Effective and efficient communication throughout the school campus
Coordinated and practiced response plan
Risk reduction
Training and equipment for first aid and CPR
Implementation of a lay-rescuer AED program in school with an established need; the program will have 5 elements:
Medical/health care professional oversight
Training of anticipated rescuers in CPR and use of an AED
Coordination with the EMS system
Appropriate device maintenance
Ongoing quality improvement program

Response

Once policies and procedures are in place, the response follows the plan in an organized and efficient manner.

- A staff member, ideally the school nurse, is to assess the situation and activate the appropriate protocol(s) and determine whether EMS needs to be activated.
- When EMS is activated, communication of school entry points to EMTs and a designated greeter to direct them to the emergency are of utmost importance.
- When possible, other students and staff members are removed from the scene.
- All emergency-response interventions should be promptly and accurately recorded and passed on to the EMTs.
- For children with special health care needs, the ECP is activated and information is to be prepared for EMTs.
- Any student who receives emergency epinephrine must be transported to the emergency department as recommended by the American Academy of Asthma Allergy & Immunology.^{9,13}
- Parents, legal guardians, or designated emergency contact persons are informed ideally as quickly as possible about the child's injury or sudden illness at school after an emergency response and about actions taken to care for him or her.¹⁰ In addition, notification systems must be in place through a designated spokesperson to inform the school staff, students, the media, and the community at large of the outcome of an individual student's emergency situation in an appropriate manner that respects the student's confidentiality and dispels false rumors.
- The description and disposition of significant illnesses or injuries (including the illnesses or injuries for which a student, staff member, or visitor is released from school to visit a physician or hospital) are to be recorded on an illness and injury form. This information is also used to (1) identify patterns of injury, (2) prevent another such injury or illness, (3) inform parents of the nature and management of the injury, (4) share information with the child's primary care clinician (ie, medical home), local and state child fatality review teams charged with investigating death and near-death events, and/or EMS personnel, and (5) provide information for liability and insurance purposes.¹⁰

After the Event

- Ideally, the records developed are studied and used to provide feedback to staff, identify areas in need of improvement, and design education programs.
- After an emergency intervention, the ECP is to be reviewed and adjusted as needed.
- Mental health interventions, as appropriate, are preferably planned for all affected students.
- Necessary equipment and medications should be restocked.

CONCLUSIONS

School preparedness for an individual student medical emergency intervention heavily depends on a team effort that involves the school administration and its physician (if applicable), the individual school health and safety team and its nurse, the local community (EMS, local hospital/emergency department), and the student's medical home/primary care clinician. Continued and timely communication between the student's medical home and the school is the key to ensuring that updated IHPs, ECPs, 504 plans, and IEPs are established, when applicable. Some of the documents referenced in this statement can be used as communication tools. The primary care clinician should advise parents and caregivers, particularly for a child with a chronic illness, to be familiar with and support the school emergency-preparedness plan. In addition, medical home clinicians and school physicians can be the best advocates to help a school obtain needed life-saving emergency services for a student with a particular condition. The medical home clinician can play a key role in supporting the school's efforts in ensuring students' safety in school, particularly those with special health care needs.

FACTORS THAT AFFECT SCHOOL EMERGENCY PREPARATION

School administration preparedness for individual student medical emergencies must recognize and address:

1. system factors such as school district size, student/school nurse ratio, students' ages/grade levels, the complexity of student medical needs, prehospital level of training of school personnel, local emergency department capability, local readily available medical treatment facilities, and human and financial resources; and
2. process factors such as protocols and procedures, continuous training and evaluation, and collaboration among the medical and educational homes and community services such as EMS, clinical and mental health support, and follow-up services.

Emergencies that occur in school can be either anticipated risks related to an individual student's medical condition or unanticipated events that occur in an otherwise healthy student or a staff member. The following recommendations are meant to assist primary care clinicians and school physicians in providing support to schools in their efforts to prepare for the individual student medical emergency.

RECOMMENDATIONS FOR PRIMARY CARE CLINICIANS

The medical home plays a key role in helping schools prepare for the individual student emergency. The following are key recommendations for primary care clinicians:

- **Communication:** Maintain a strong, open, and ongoing line of communication with the school nurse and/or the school physician (when available) regarding the individual student's medical condition and current management in coordination with the parent/

caregiver. This linkage informs the school nurse of any changes or updates to the student's IHP, ECP, 504 plan, or IEP when applicable. The emergency information form¹³ (developed by the American College of Emergency Physicians and the AAP) is 1 such tool that can be completed by the primary care clinician and may be used to communicate with the school nurse.¹³ Table 2 provides selected resources for general and disease-specific emergency care, action, and health plans that can be used by the primary care clinician in communication with the school nurse after obtaining parental permission. The school nurse plays an important role in developing and implementing health plans, activating physicians' orders, and interpreting physicians' instructions for staff, students, and families.

- **Familiarity:** Be familiar with the individual emergency plan and the disaster plan of the patient's school, the school resources, and staffing and provide advice on issues that might affect the student's disease management and outcome.
- **Parent engagement:** Advise parents to become familiar with the school's emergency plan and help them evaluate how the plan meets the needs of their children.
- **Advocacy:** Get involved with the school district's School Health Advisory Council and provide input on health-related policies that will affect individual patient care, including school wellness policies and emergency plans.
- **Drafting health plans:** Participate in the drafting of IEPs and 504 plans as needed. If a student with a particular special health care need or chronic disease has special education needs, an IEP may be developed by using the IHP as a foundation for details on the student's disease-management routine. To qualify for an IEP, a child must have an impairment that substantially affects his or her academic performance.²⁴
- **Orders:** Provide a clearly written problem list, daily care instructions, accommodations, and orders for the use of emergency medications (eg, epinephrine auto-injector, albuterol) and the necessary current prescriptions to keep these medications and devices available in school for use in a particular student's emergency. This information is used by the school nurse to create the student's IHP and ECP.
- **Be available to assess the individual student after an emergency and assist in a prompt and safe return to school and provide support to parents whose child sustained a medical emergency in school.**
- **Review the documentation and details of the student's school emergency, provide feedback, and provide instructions that amend the individual ECP as necessary.**
- **Communicate directly with the school physician (where available) as needed.**

RECOMMENDATIONS FOR THE SCHOOL PHYSICIAN

The school physician, if one is available, is uniquely positioned to interact with schools in each of the previ-

ously mentioned steps and provide global and system-based recommendations related to individual students' medical emergency readiness as follows:

- Assist administration and collaborate with the school nurse in the planning, development, training, implementation, review, evaluation, update, and approval of the school emergency plan and protocols for individual student emergencies,⁹ including medical emergencies and injuries that occur in school, after school, in transport, and on the playground.
- Ensure that the individual emergency preparation seamlessly links with the preparations for disaster planning.
- Be familiar with the spectrum of medical diagnoses of individual students in each of the schools in the district to effectively assist the school nurse in obtaining, interpreting, and implementing the IHP, ECP, IEP, and 504 plans for those students and to anticipate the schools' needs and resources to deal with anticipated emergencies.
- Assist in the development and periodic assessment of programs for emergency education, training, and retraining of school staff and designated volunteers in emergency procedures, including basic life support, first aid, AED use, and emergency medication administration.¹
- Act as a liaison between the medical home and the school staff to ensure continued communication regarding a student's IHP, ECP, IEP, or 504 plan.
- Provide guidelines and recommendations on the contents of the emergency kit and ensure that the kit medications are safe, accessible, and in adequate supply⁹ (see the AAP policy statement "Guidelines for Emergency Medical Care in School"¹⁰ for a guideline for kit contents).
- Oversee school emergency drills in collaboration with the local EMS, hospitals, and community agencies.
- Establish a program for regular AED maintenance, testing, and repair when an AED is available in the school²⁵ (see Table 2 for highlights of the elements of an AED plan).
- Oversee and manage the medical emergency-response actions on behalf of an affected student (if present in school during an emergency).
- After a student emergency occurs, review the records of the school's management of the medical emergency, its response and adherence to the emergency protocol, the adequacy of services provided, and the accuracy and completeness of data recorded to evaluate access to and quality of emergency services and materials, and make necessary recommendations for changes in the school's protocols, supplies, and individual student ECPs.
- Act as a liaison between the medical home and the local school of the student who sustained the emergency to ensure adequate communication, perform any needed changes/modifications to the student

health plan, and assist the primary care clinician in ensuring the student's safe return to class after an emergency.

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REFERENCES

1. Hazinski MF, Markenson D, Neish S, et al. Response to cardiac arrest and selected life-threatening medical emergencies: the medical emergency response plan for schools: a statement for healthcare providers, policymakers, school administrators, and community leaders. American Heart Association, Emergency Cardiovascular Care Committee. *Pediatrics*. 2004;113(1 pt 1): 155–168
2. Sapien RE, Allen A. Emergency preparation in schools: a snapshot of a rural state. *Pediatr Emerg Care*. 2001;17(5):329–333
3. Loyacono TR. Responding to school emergencies. *Emerg Med Serv*. 2005;34(4):43–44, 46, 48 passim
4. American Academy of Pediatrics, Council on School Health. Disaster planning for schools. *Pediatrics*. 2008;122(4):895–901
5. Olympia RP, Wan E, Avner JR. The preparedness of schools to respond to emergencies in children: a national survey of school nurses. *Pediatrics*. 2005;116(6). Available at: www.pediatrics.org/cgi/content/full/116/6/e738
6. Knight S, Vernon DD, Fines RJ, Dean NP. Prehospital emergency care for children at school and nonschool locations. *Pediatrics*. 1999;103(6). Available at: www.pediatrics.org/cgi/content/full/103/6/e81
7. Office of Safe and Drug-Free Schools. *Practical Information on Crisis Planning: A Guide for Schools and Communities*. Washington, DC: Office of Safe and Drug-Free Schools, US Department of Education; 2004. Available at: www.ed.gov/emergencyplan. Accessed November 15, 2007

8. American Academy of Pediatrics, Committee on School Health. *School Health: Policy and Practice*. 6th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2004
9. Taras H, Duncan P, Luckenbill D, Robinson J, Wheeler L, Wooley S, eds. *Health, Mental Health, and Safety Guidelines for Schools*. Elk Grove Village, IL: American Academy of Pediatrics; 2004
10. American Academy of Pediatrics, Committee on School Health. Guidelines for emergency medical care in school. *Pediatrics*. 2001;107(2):435–436
11. Bobo N, Hallenbeck P, Robinson J; National Association of School Nurses. Recommended minimal emergency equipment and resources for schools: national consensus group report. *J Sch Nurs*. 2003;19(3):150–156
12. American Academy of Pediatrics, Committee on Pediatric Emergency Medicine. Emergency preparedness for children with special health care needs. *Pediatrics*. 1999;104(4). Available at: www.pediatrics.org/cgi/content/full/104/4/e53
13. McIntyre CL, Sheetz AH, Carroll CR, Young MC. Administration of epinephrine for life-threatening allergic reactions in school settings. *Pediatrics*. 2005;116(5):1134–1140
14. Markenson D, Pyles L, Neish S; American Academy of Pediatrics, Committee on Pediatric Emergency Medicine, Section on Cardiology and Cardiac Surgery. Technical report: ventricular fibrillation and the use of automated external defibrillators in children. *Pediatrics*. 2007;120(5). Available at: www.pediatrics.org/cgi/content/full/120/5/e1368
15. American Academy of Pediatrics, Committee on Pediatric Emergency Medicine. Policy statement: ventricular fibrillation and the use of automated external defibrillators in children. *Pediatrics*. 2007;120(5):1159–1161
16. Garza MM. An AED in every school: the next step for public access defibrillation. *JEMS*. 2003;28(3):22–23
17. Kyle JM, Leaman J, Elkins GA. Planning for scholastic cardiac emergencies: the Ripley project. *W V Med J*. 1999;95(5):258–260
18. Zheng ZJ, Croft JB, Giles WH, Mensah GA. Sudden cardiac death in the United States, 1989 to 1998. *Circulation*. 2001;104(18):2158–2163
19. Chugh SS, Jui J, Gunson K, et al. Current burden of sudden cardiac death: multiple source surveillance versus retrospective death certificate-based review in a large U.S. community. *J Am Coll Cardiol*. 2004;44(6):1268–1275
20. Rea TD, Eisenberg MS, Sinibaldi G, White RD. Incidence of EMS-treated out-of-hospital cardiac arrest in the United States. *Resuscitation*. 2004;63(1):17–24
21. England H, Hoffman C, Hodgman T, et al. Effectiveness of automated external defibrillators in high schools in greater Boston. *Am J Cardiol*. 2005;95(12):1484–1486
22. Larsen MP, Eisenberg MS, Cummins RO, Hallstrom AP. Predicting survival from out-of-hospital cardiac arrest: a graphic model. *Ann Emerg Med*. 1993;22(11):1652–1658
23. Coris EE, Miller E, Sahebzamani. Sudden cardiac death in division I collegiate athletics: analysis of automated external defibrillator utilization in National Collegiate Athletic Association division I athletic programs. *Clin J Sport Med*. 2005;15(2):87–91
24. Drezner JA, Courson RW, Roberts WO, et al. Inter Association Task Force recommendations on emergency preparedness and management of sudden cardiac arrest in high school and college athletic programs: a consensus statement. *Prehosp Emerg Care*. 2007;11(3):253–271
25. Berger S, Utech L, Hazinski MF. Lay rescuer automated external defibrillator programs for children and adolescents. *Pediatr Clin North Am*. 2004;51(5):1463–1478
26. American Heart Association. Automated external defibrillation implementation guide. Available at: www.uil.utexas.edu/athletics/health/pdf/AED_implementation.pdf. Accessed November 15, 2007
27. Illinois Emergency Services for Children. Guidelines for the nurse in the school setting. Available at: www.luhs.org/depts/emsc/Schl.Man.pdf. Accessed November 15, 2007

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