



The Pediatrician and Disaster Preparedness

Committee on Pediatric Emergency Medicine
Committee on Medical Liability
Task Force on Terrorism

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

ABSTRACT

Recent natural disasters and events of terrorism and war have heightened society's recognition of the need for emergency preparedness. In addition to the unique pediatric issues involved in general emergency preparedness, several additional issues related to terrorism preparedness must be considered, including the unique vulnerabilities of children to various agents as well as the limited availability of age- and weight-appropriate antidotes and treatments. Although children may respond more rapidly to therapeutic intervention, they are at the same time more susceptible to various agents and conditions and more likely to deteriorate if not monitored carefully.

The challenge of dealing with the threat of terrorism, natural disasters, and public health emergencies in the United States is daunting not only for disaster planners but also for our medical system and health professionals of all types, including pediatricians. As part of the network of health responders, pediatricians need to be able to answer concerns of patients and families, recognize signs of possible exposure to a weapon of terror, understand first-line response to such attacks, and sufficiently participate in disaster planning to ensure that the unique needs of children are addressed satisfactorily in the overall process. Pediatricians play a central role in disaster and terrorism preparedness with families, children, and their communities. This applies not only to the general pediatrician but also to the pediatric medical subspecialist and pediatric surgical specialist. Families view pediatricians as their expert resource, and most of them expect the pediatrician to be knowledgeable in areas of concern. Providing expert guidance entails educating families in anticipation of events and responding to questions during and after actual events. It is essential that pediatricians educate themselves regarding these issues of emergency preparedness.

For pediatricians, some information is currently available on virtually all of these issues in recently produced printed materials, at special conferences, in broadcasts of various types, and on the Internet. However, selecting appropriate, accurate sources of information and determining how much information is sufficient remain difficult challenges. Similarly, guidance is needed with respect to developing relevant curricula for medical students and postdoctoral clinical trainees.

INTRODUCTION

Recent natural disasters and events of terrorism and war have heightened society's recognition of the need for emergency preparedness. Moreover, the possibility of

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Key Words

emergency preparedness, disasters, terrorism, bioterrorism

Abbreviations

HRSA—Health Resources and Services Administration

CDC—Centers for Disease Control and Prevention

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additional terrorism on US soil has become increasingly likely, so much so that billions of dollars have been allocated to massive investments in homeland security and public health readiness. The challenge of dealing with the threat of terrorism, natural disasters, and public health emergencies in the United States is daunting not only for disaster planners but also for our medical system and health professionals of all types, especially pediatricians. Pediatricians need to be able to answer concerns of patients or families, know when to recognize signs of possible exposure to a weapon of terror, understand first-line response to such attacks, and sufficiently participate in disaster planning to ensure that the unique needs of children are addressed satisfactorily in the overall process.

THE ROLE OF THE PEDIATRICIAN

Managing Family Concerns About Disaster and Terrorism Preparedness

Pediatricians play a central role in disaster and terrorism preparedness with families, children, and their communities. This applies not only to the general pediatrician but also to the pediatric medical subspecialist and pediatric surgical specialist. Families view pediatricians as their expert resource, and most of them expect the pediatrician to be knowledgeable in areas of concern. Providing expert guidance entails educating families in anticipation of events and responding to questions during and after actual events. It is essential that pediatricians educate themselves regarding these issues of emergency preparedness. The American Academy of Pediatrics has an extensive set of emergency-preparedness resources for pediatricians. In addition, many other resources for pediatricians regarding emergency preparedness exist and can be found in "Suggested Resources for Additional Information."

As part of anticipatory guidance, pediatricians should discuss issues related to family emergency preparedness. They should provide families with information on creating a family emergency plan, discussing this plan with their children, and practicing the plan. There are several good resources for pediatricians to use in educating families regarding emergency preparedness. They can be found in "Suggested Resources for Additional Information."

Although adults can actively seek help, children cannot; they depend on the adults in their lives to get them the assistance that they need. With appropriate support and guidance, children can develop the skills and resiliency needed to deal with, overcome, and possibly even grow from these traumatic experiences. As part of anticipatory guidance, pediatricians should ask parents about their child's awareness of natural disasters and previous or potential future terrorist attacks, their degree of exposure (including television) to these issues, and their previous and current reactions. Such queries may

provide an opportunity to advise parents about how best to discuss terrorist attacks with their child. Pediatricians should encourage parents to present information to children honestly, using language that is appropriate to the child's developmental level and cognitive abilities. Parents can be encouraged to talk with their children about a specific plan that includes things to do in case of a disaster, terrorist incident, or other emergency, such as to whom to go for help, safe places to seek, and other concrete steps that can be taken at home, at school, and in the community. The approach may be similar to that taken to prepare children for other potential threats such as fire or approach by a stranger. By using specific plans to ensure safety, the goal of these discussions should be to help the child to potentially feel in control of a threatening situation and also to convey that the parents are in control.

In addition to handling the needs of all their patients and discussing family emergency planning, pediatricians need to address the unique needs of children with special health care needs. Pediatricians should provide guidance to families of children with special health care needs regarding:

- notification of utility companies to provide emergency support during a disaster;
- maintenance of medications and equipment should supply be disrupted during a disaster;
- knowledge of how to obtain additional medications and equipment during times of disaster;
- training for family members to assume the role of in-home health care providers, who may not be available during a disaster; and
- keeping an up-to-date emergency information form (available from ref 1) to provide health care workers with the patient's medical information should the regular care provider be unavailable.

Office-Based Preparedness

After a disaster, offices or clinics may become sites for care if area hospitals are unable to provide services. If even local offices are unusable, alternative sites for primary care must be identified. If necessary, medical care may be provided in schools, public buildings, malls, and/or makeshift facilities, such as tents, using limited power and water sources. Pediatricians should prepare, regularly update, and practice an office disaster plan that addresses response and recovery issues. This office plan should be coordinated with local hospital and community emergency-response plans. Office training programs in emergency procedures, including first aid, cardiopulmonary resuscitation, evacuation, search and rescue (as appropriate), the use of fire extinguishers, and participation in community disaster drills, should be a routine part of the office's overall emergency preparedness.

Emergency preparations should include plans for storage of temperature-sensitive vaccines, medications, and supplies during extended periods of absent or limited power supply.

Community Preparedness

Pediatricians in the community can assist in both triage and treatment of patients. Important questions to ask include: (1) Where should the pediatrician go during the disaster? (2) How should pediatricians be notified that they are needed to respond to the disaster? (3) How should hospital physicians be identified and notified to go to the scene to attend to victims of the disaster? and (4) How should transfers of pediatric patients in the hospital and discharges be handled? In areas in which pediatricians cover several hospitals, pools should be initiated through the local medical or pediatric society to provide uniform pediatric coverage of area hospitals. Pediatricians can aid schools, child care centers, and other child congregate facilities in developing disaster plans. At the local level, the agency that will have the responsibility for the overall coordination during a disaster or terrorism event will be the office of emergency management (OEM). The specific role of coordination and preplanning for the health care needs of the community will be coordinated by the office of emergency management but assigned to the local department of public health.

Currently, the 2 major programs that provide departments of health in states and the 5 largest cities with direct funding to help fulfill this role of coordinating the health care system for terrorism preparedness are the Health Resources and Services Administration (HRSA) Bioterrorism Hospital Preparedness program and the Centers for Disease Control and Prevention (CDC) Public Health Preparedness and Response for Bioterrorism program. The CDC-funded initiative is primarily concerned with improving public health departments' ability to address bioterrorism, whereas the HRSA effort allows public health departments to provide training, guidance, and funding to hospitals to improve their preparedness. Both of these programs specifically mention pediatric considerations in their guidance, but unfortunately, the pediatric care activities in many states are minimal and often lack sufficient involvement by pediatricians. It is important for pediatricians to become familiar with the activities of these programs to ensure pediatric involvement. Information on these programs can be found on state public health department Web sites in addition to the HRSA and CDC Web sites (see "Suggested Resources for Additional Information").

The Office of the Surgeon General and USA Freedom Corps support local voluntary Medical Reserve Corps units in more than 200 American communities (www.medicalreservecorps.gov). These volunteer units provide a mechanism for health care professionals to volunteer their services during times of disaster as part of the

organized response in a community. In addition, by joining a Medical Reserve Corps or other governmentally sponsored or recognized volunteer program, physicians will be provided with mechanisms for identification during times of emergencies. Because the Medical Reserve Corps program does not have pediatric capability as a requirement for their units, it is important for pediatricians to join these teams to ensure that pediatric considerations are met.

Some state health departments have begun to coordinate and link the activities of the Medical Reserve Corps units in their states. In addition, most state health departments and many large local health departments are establishing notification systems based on requirements of the HRSA and CDC grant programs. The purpose of these systems is to ensure that physicians and other health care professionals have timely access to needed information about the existence of an event (disaster, terrorism, or public health emergency), are provided with information on what their role should be, and know whom to contact with problems or for additional information. It is important that all physicians register for these notification systems so that in a time of emergency, they are notified and informed of their role.

Last, pediatricians should inquire about the emergency-preparedness plans at all the hospitals at which they work or admit patients. In times of emergency, there may be a need for transfers or discharges based on different criteria or altered admission policies. To assist hospitals with these functions and provide better care for their patients, pediatricians must understand how each hospital has planned to handle these events.

Surveillance

One of the key elements in emergency preparedness is early detection of any possible public health threat or bioterrorism event. The most likely scenario involves exposure in a community that may manifest with subtle signs and symptoms and/or unusual patient presentations. The role of the pediatrician is key. Pediatricians must be functioning constantly as part of a surveillance system to provide for early detection of any bioterrorism agent, which requires pediatricians to become familiar with the types of bioterrorism agents that may be involved. They also must become familiar with referral procedures and when to report cases to the local health department. Health department reporting is based on local requirements but should be considered for all unusual cases, any cases that are suspicious for a bioterrorist agent, or an unusual number of patients, either absolute or for the season, who present with similar symptoms.

Reporting a Disaster, Terrorism, or Public Health Emergency

It is important that health care professionals be knowledgeable about the mechanism and appropriate contacts to report an event, whether natural or man-made. In

case of any emergency, health care professionals should activate their local emergency system, which in most areas can be done by calling 911. Any suspicious or confirmed disaster situation should be reported immediately to the local 911 emergency-response number.

In addition, if a pediatrician believes that someone has been exposed deliberately to a biological, chemical, or radioactive agent or if a pediatrician believes an intentional terrorist threat will occur or is occurring, he or she should immediately involve the public health authorities. This can be done by contacting the local health department, the local police or other law enforcement agency, and the 24-hour CDC hotline at 770-488-7100.

Last, any incident related to terrorism or possible terrorist activity also requires telephone notification to local law enforcement and the National Response Center at 800-424-8802. This includes bombings, bomb threats, suspicious letters or packages, and incidents related to the intentional release of chemical, radiologic, and biological agents.

Pediatricians' Actions During a Disaster

During a disaster, pediatricians may need to serve in a variety of functions ranging from routine disaster actions for themselves and their families to providing medical care and answering questions from their patients and families and participating in the local disaster response to meet the needs of their community and the hospitals in their community. Medical responders likely will need to function unassisted until outside resources arrive, at least 6 to 8 hours after the onset. Hospitals and clinics will be flooded with affected patients and the "worried well."

To fulfill these roles during a disaster, all pediatricians need to:

- institute office and home disaster plans;
- participate in the community or hospital disaster plan, including drills and exercises;
- provide medical assistance via established disaster medical delivery systems;
- provide guidance to patients and their families;
- when volunteering to assist during or after a disaster, make every effort to work in concert with the lead organization coordinating disaster relief; and
- serve a key role in identifying sentinel cases of illness after a chemical, biological, or radiologic release.

In addition to important functions during the actual event, pediatricians' assistance will be needed after the event throughout the recovery period. The role of the pediatrician is to help patients who have been affected by the event to return to normal functioning and to assist with community efforts at return to normal activity. During the recovery period, all pediatricians need to:

- be prepared to deal with continued disruption of services (which may include medical services in the community; supplies for their patients, their office, and hospitals; limited availability of pharmacy services; and altered utilities such as telephone, electrical power, and water);
- continue providing care as part of their office emergency plan and as needed in community disaster medical programs;
- continue to provide surveillance for the effects of chemical, biological, or radiologic agent release but also during any disaster provide surveillance for unusual rates of infectious disease that may occur; and
- ensure that the mental health needs of children and their families are being addressed and, when needed, provide appropriate referral for mental health services.

Hospital Preparedness

It is important for hospitals to consider the needs of children in all aspects of emergency preparedness and all hazards plans. This will include, but is not limited to, appropriate types and numbers of pediatric-trained staff, equipment, medications, and decontamination equipment, including the ability to handle nonambulatory children. In addition, hospitals must be prepared to handle situations in which patients will be cared for as a family unit and children will not be able to be separated from adults, such as in a quarantine situation. This will require all hospitals to have the capability to handle children, and all children's hospitals must possess the ability to care for adult patients who will be staying with their children.

Pediatricians' Liability During Disasters

In the past, many pediatricians have provided care without affiliation with recognized government or volunteer agencies. When providing medical services during a disaster or terrorism event, it is important that health care professionals are part of an organized program. Lack of an oversight organization providing the service may result in services that are not in concert with the organized response and places health care professionals in a position without professional liability insurance coverage. Most malpractice coverage is limited to the health care professional's usual scope of practice and practice setting. In some states, individual malpractice insurance policies do not cover out-of-office care or the expanded scope of practice that may be required during a disaster. Good Samaritan statutes provide some liability protection when rendering medical care at the scene of an emergency to one who would not otherwise receive it. Good Samaritan statutes cover physicians at the scene of acute incidents but vary among states and may not provide liability protection during or after disasters or ter-

rorism events. These laws do not cover a physician if there is any payment for services or if there is an accusation of gross negligence. In many states, coverage for liability during a disaster requires health care professionals to practice under the umbrella of an official disaster agency such as the Federal Emergency Management Agency, the US Department of Health and Human Services, a state or local health department, a state or local office of emergency management, the local emergency medical services authority, or an other recognized government or volunteer agency.

Advocating for Children and Families in Disaster Planning

As all pediatricians know, children are often not considered in government and community activities for a multitude of reasons. Properly informed and motivated pediatricians are essential advocates for children. This role can take several forms. Grassroots advocacy can include efforts to ensure legislation and funding to support an emphasis on children in disaster planning at every level. Pediatricians can also serve as expert advisors to local, state, and federal agencies and committees. Most often, this can be done through involvement in professional organizations such as the American Academy of Pediatrics and its chapters, committees, sections, and task forces.

RECOMMENDATIONS

1. Pediatricians should advocate for the inclusion of the needs of children in all federal, state, and local disaster planning.
2. Pediatricians and pediatric trainees should become knowledgeable in issues related to pediatric disaster management, including chemical, biological, explosive, radiologic, and nuclear events and physician liability during disasters.
3. Pediatricians should participate in disaster planning by:
 - taking part in local community and hospital disaster planning, exercises, and drills through emergency medical services and public health systems;
 - preparing and regularly updating and practicing an office disaster plan;
 - working with schools and child care centers in developing disaster plans;
 - providing anticipatory guidance to families on home disaster preparedness, with consideration given to the unique problems faced by children with special health care needs;
 - participating in disease surveillance and reporting to local health departments; and
 - participating with and providing guidance to medical volunteer programs such as disaster medical assistance teams, Medical Reserve Corps, and other response teams to ensure that they are equipped and trained for the care of children.
4. Pediatricians need to educate themselves regarding liability issues during the acute and recovery phases of a disaster, including:
 - individual states' Good Samaritan statutes and protections afforded while providing emergency care during a disaster and any limitations to those protections;
 - individual liability insurance coverage protections and limitations outside of the usual scope of practice and practice settings when providing urgent and routine care; and
 - the importance of working under the auspices of an official government or disaster agency for volunteer liability protection to apply.

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REFERENCE

1. 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

SUGGESTED RESOURCES FOR ADDITIONAL INFORMATION

American Academy of Pediatrics (www.aap.org/terrorism)

Publications and Media

- Balk SJ, Miller RW. FDA issues KI recommendations. *AAP News*. 2002;20(3):99
- American Academy of Pediatrics. *Feelings Need Check Ups Too* [on CD-ROM]. Elk Grove Village, IL: American Academy of Pediatrics; 2004
- American Academy of Pediatrics, Committee on Environmental Health. Radiation disasters and children. *Pediatrics*. 2003;111:1455–1466
- American Academy of Pediatrics, Committee on Infectious Diseases. Smallpox vaccine. *Pediatrics*. 2002;110:841–845
- American Academy of Pediatrics, Committee on Pediatric Emergency Medicine. Pediatricians' liability during disasters. *Pediatrics*. 2000;106:1492–1493
- American Academy of Pediatrics, Committee on Environmental Health and Committee on Infectious Diseases. Chemical-biological terrorism and its impact on children: a subject review. *Pediatrics*. 2000;105:662–670

American Academy of Pediatrics, Committee on Psychosocial Aspects of Child and Family Health. How pediatricians can respond to the psychosocial implications of disasters. *Pediatrics*. 1999;103:521–523

American Academy of Pediatrics, Committee on Psychosocial Aspects of Child and Family Health. The pediatrician and child bereavement. *Pediatrics*. 2000;105:445–447

Informational Documents

- American Academy of Pediatrics. Child with a suspected anthrax exposure or infection. Available at: www.aap.org/advocacy/releases/anthraxsus.htm
- American Academy of Pediatrics. Anthrax/bioterrorism Q and A. Available at: www.aap.org/advocacy/releases/anthraxqa.htm
- American Academy of Pediatrics. AAP offers advice on communicating with children about disasters. Available at: www.aap.org/terrorism/topics/psychosocialAspects.html
- American Academy of Pediatrics. AAP responds to questions about smallpox and anthrax. Available at: www.aap.org/advocacy/releases/smlpoxanthrax1.htm
- Baltimore R, McMillan J. AAP experts address smallpox questions. Available at: <http://aapnews.aapublications.org/cgi/content/full/e200164v1>
- American Academy of Pediatrics. Family readiness kit: preparing to handle disasters. Available at: www.aap.org/family/frk/frkit.htm
- American Academy of Pediatrics. Responding to children's emotional needs during times of crisis: an important role for pediatricians. Available at: www.aap.org/terrorism//topics/parents.pdf
- American Academy of Pediatrics. Smallpox: frequently asked questions—parent handout. Available at: www.aap.org/advocacy/releases/smallpoxfaq.htm
- American Academy of Pediatrics. Terrorism: a family disaster plan. Available at: www.aap.org/advocacy/releases/famdisplan.pdf
- American Academy of Pediatrics. The youngest victims: disaster preparedness to meet children's needs. Available at: www.aap.org/terrorism/topics/PhysiciansSheet.pdf

American College of Emergency Physicians (www.acep.org)

American Hospital Association (www.aha.org)

American Red Cross (www.redcross.org)

Centers for Disease Control and Prevention

Emergency Preparedness and Response

Atlanta, GA: National Advisory Committee on Children and Terrorism; 2003. Available at: www.bt.cdc.gov/children

Children's Health Fund (www.childrenshealthfund.org)

Redlener I, Grant R. The 911 terror attacks: emotional consequences persist for children and their families. *Contemp Pediatr*. 2002;19:43–59

Emergency Medical Services for Children Natural Resource Center (www.ems-c.org)

Federal Emergency Management Agency (www.fema.gov)

Health Resources and Services Administration (www.hrsa.gov/bioterrorism)

Infectious Diseases Society of America (www.idsociety.org)

Medical Reserve Corps (www.medicalreservecorps.gov)

Program for Pediatric Preparedness, National Center for Disaster Preparedness (www.pediatricpreparedness.org)

Executive Summary From Pediatric Preparedness for Disasters and Terrorism: A National Consensus Conference. New York, NY: Mailman School of Public Health; 2003