

**CHILDREN AND DISASTERS:  
NEW GUIDELINES AND RECOMMENDATIONS IN  
NURSING PRACTICE**



**“NURSING CONTACT HOURS HAVE BEEN APPLIED FOR THROUGH THE TEXAS NURSES ASSOCIATION, AN ACCREDITED APPROVER OF CONTINUING NURSING EDUCATION BY THE AMERICAN NURSES CREDENTIALING CENTER’S COMMISSION ON ACCREDITATION.”**

## THE PROBLEM

- × Disasters are Occurring more Frequently
- × Assessments show Deficiencies in Disaster Preparedness for Children
- × Current Programs and Practices are Fragmented

Just in two years from 2008 to 2010, the Nation has suffered from a devastating 100-year flood in the Midwest, a major earthquake and tsunami in American Samoa, the public health emergency caused by the H1N1 virus, the earthquake in Haiti, and the devastating oil spill in the Gulf of Mexico. Many more will occur even before this course is posted. On a smaller scale but still important, are the community emergencies that occur everyday around the Nation.

A study conducted at the University of Arkansas in 2009, found that while presidential disaster declarations went up 47% since the 1980's, response plans to the disasters are still minimal. The study surveyed 1,318 pre-hospital emergency medical services agencies nationwide and found that only 248 (13%) had specific disaster plans for children. Similarly, Save the Children reported in 2009 that only 7 states in the U.S. require basic emergency preparedness requirements for schools and child-care facilities. Only 21 states require licensed child-care facilities to have a designated site and evacuation route in the event of a disaster and only 15 states require licensed child-care facilities it have a reunification plan for children and families in the event they become separated in an emergency. In addition, just 25% of emergency medical service agencies and only 6% of hospital emergency departments surveyed had the appropriate supplies and equipment to treat children.

Children make up 25% of the population and on any given weekday, 67 million children are in schools and child care facilities, making them most vulnerable because they are away from their families.

In 2009 a report from the Homeland Security Council, identified that the majority of disaster training, exercising, medicines, and equipment used were intended for adults;

children were lumped into broad categories Such as “at-risk” “vulnerable” and “special needs”; and there were no accountability measures to identify who would specifically be responsible for the needs of children before, during, and after disasters.

## WHAT WAS DONE

- × The National Commission on Children and Disasters
- × The 2010 Report to Congress
- × The American Academy of Pediatrics Reports

As a result of the increasing disaster declarations and the assessment reports that followed, the National Commission on Children and Disasters (NCCD) was formed and authorized by Congress under the Appropriations Act of 2008. The NCCD published its first report in October 2009. The NCCD was charged to conduct a comprehensive study of children's needs during and after disasters, review and evaluate existing laws and policies relevant to the needs of children identified, and report these findings to the President and Congress.

In the report presented to Congress in October 2009, NCCD reported the identified deficiencies in relation to children and disasters. In October 2010, the NCCD in conjunction with research and findings by the American Academy of Pediatrics reported the suggested recommendations and guidelines to address the deficiencies identified through the research conducted in 2009.

## **RECOMMENDATIONS:** **EVACUATION, TRANSPORTATION, AND HOUSING**

- × Require child care facilities to establish emergency response plans
- × Minimal Standards include shelters in place and evacuation
- × Tie Plans to Local and Emergency Management Plans

Childcare facilities should have a comprehensive emergency preparedness plan that includes a response and recovery plan. Minimum standards should include that shelters and evacuation plans are in place including considerations for children with special needs. Shelters should provide a safe environment with age appropriate supplies. Plans should have community wide coordination, involving local public health and emergency response officials, parents, and other key stakeholders.

## **RECOMMENDATIONS:**

### **EDUCATION, CHILD WELFARE AND JUSTICE**

- × Provide support for training and technical assistance to operators and staff
- × Support psychological first aid training for teachers, parents, and children
- × Incorporate basic preparedness into school curricula

School districts and childcare facilities should regularly train with community partners on how to implement their emergency management plans, these trainings should include emergency responders and hospital professionals. Facilities should also employ procedures for continuing education and service during extended closure times that might occur such as in a pandemic flu outbreak.

## **RECOMMENDATIONS: HUMAN SERVICES RECOVERY**

- × Support academic and mental health needs of children in post disaster environments
- × Collaborate with local and state emergency managers and community partners

## **RECOMMENDATIONS: PEDIATRIC MEDICAL CARE**

- × Assess stockpile of medical countermeasures, do you have enough available
- × Must have enough antivirals to treat 25% of the population
- × Must have child appropriate doses, such as flavored liquid doses.
- × Healthcare Provider Education

Rates of influenza infection, including H1N1 are highest among children and rates of serious illness and death are highest particularly among children less than two years of age. It is important that communities and facilities have a full allocation of antivirals to ensure that they can treat 25% of their population. Children are not just small people and will likely require child appropriate doses, such as nose sprays and flavored liquid doses.

Competency based training needs to occur for basic and advanced pediatric medical care for a wide spectrum of personnel including EMS professionals, nurses, physicians and allied health professionals.

## **RECOMMENDATIONS: PEDIATRIC MEDICAL CARE**

- × *Key Elements of Standardized training programs include:*
  - + Patient care guidelines for children based on scenario
  - + Pediatric-specific severity criteria and treatment guidelines
  - + Clinical guidelines for treatment, triage, and transport
  - + Guidelines for incorporating pediatric related objectives into routine drills

The Key elements of a standardized curriculum and training program would include the development of patient care guidelines for children based on specific scenarios, pediatric severity criteria and treatment guidelines, clinical practice guidelines for triage, treatment, and transport, and guidance for emergency medical services, hospitals, emergency management, fire and law enforcement on how to incorporate pediatric-related objectives into routine drills and exercises. These items will be discussed in detail in the following slides.

## Patient Care Guidelines for Children Based on Scenario

- × Utilize Pediatric Specialists to Develop Guidelines
- × Use AAP Children, Terrorism and Disaster Toolkit

Child specialists or healthcare providers trained in children's physical, psychosocial and emotional needs should be utilized for scenario guidance. For example, children will be frightened of health care personnel, especially if they are wearing personal protective equipment. Conducting routine procedures, such as starting IVs and taking vital signs, will be more challenging. These individuals can identify the best approaches to treatment based on developmental age and environment.

Have pediatric protocols or adult/pediatric protocols available that reflect knowledge of the unique treatment needs of children and integrate these protocols into your facility's disaster plan. Health care practitioners can refer to the American Academy of Pediatrics (AAP) *Children, Terrorism & Disasters Toolkit*, which identifies distinct vulnerabilities of children to biological, chemical and other terrorist attacks, and highlights their unique treatment needs.

## **Pediatric-Specific Severity Criteria and Treatment Guidelines**

- × Have a method in place for weight based dosing
- × Keep Age-Appropriate Supplies Stocked

Children require different medication dosages than adults because of their anatomic and physiological differences.

In addition, certain drugs and biological agents may have different effects on the pediatric patient. Assure that you have a method in place for correct weight-based dosing such as the Broselow-Luten.

Since access to outside supplies may be difficult during the initial hours/days of a disaster, develop a plan to stock a 72-hour supply of equipment, nutrition and pharmaceuticals for staff, patients and their families. Staff should maintain a 72-hour supply of their own personal medication in lockers or in other secure/accessible areas. Children require smaller sized equipment than adults. Ensure your organization has pediatric-specific equipment on site as well as a mechanism for quick retrieval of additional supplies.

## **Clinical Guidelines for Treatment, Triage, and Transport**

- × Utilize a Pediatric Specific Triage System
- × Use Pediatric Specific Decontamination
- × Be Prepared to Hold Emergency Patients at Your Facility
- × Strategies to Increase Capacity

A standardized triage system provides guidance for personnel making life and death decisions that otherwise may be influenced by emotional issues when triaging children. JumpStart Pediatric Multiple Casualty Incident Triage is an objective triage system that addresses the needs of children and can be a resource tool when planning a triage process for pediatric patients.

Special considerations need to be made for children during decontamination procedures. Since children lose their body heat quickly assure that access to warm shower water is available. In addition, assure that the shower system is high volume/low pressure. Take into consideration that decontamination systems need to be designed for use in children of all ages, including infants, a parentless child, a non-ambulatory child and a child with special health care needs. These shower decontamination units must be able to accommodate an adult as well as a child, so that families can shower together. Plan for how contaminated infants or young children should be carried through decontamination systems. Take into consideration that when infants are wet, they will be slippery. Avoid potential injury by carrying them through decontamination systems in plastic baskets, car seats or on a stretcher.

Immediate access to warming equipment and supplies is essential after showering. Your facility should have access to the following pieces of equipment to ensure the child or infant's body temperature remains normal.

- Fluid/blood warmer
- Warming blankets
- Forced-air warming therapy ( such as a Bair Hugger)

- Overhead heat lamps
- Isolettes/radiant warmers
- Appropriate sized gowns

Your facility may routinely transfer pediatric patients to a tertiary care center or other hospital with pediatric specialty services. However, during a disaster event, children may need to be maintained at your hospital. Consider stocking additional practical supplies to have on hand for children, such as extra pillows and blankets, pediatric-sized clothing and hospital gowns, flashlights, batteries, diapers, diaper wipes, formula, dextrose in water, bottles, nipples, and distraction devices such as toys, books, board games, art supplies, bubbles and dolls.

Strategies to increase capacity during patient surges may include converting inpatient beds to outpatient beds, discharging patients timely, establish discharge holding areas, and creating alternate treatment areas. Other options may include initiating agreements with other healthcare facilities such as rehabilitation and long term care facilities, utilizing mobile clinics, and utilizing schools or fitness centers.

## **Guidelines for Incorporating Pediatric Related Objectives into Routine Drills**

- × Ensure adequate pediatric countermeasures are in stock
- × Develop Pediatric Specialty Units
- × Incorporate Pediatric Facilities
- × Pediatric Specific Hazard Vulnerability Analysis

Children are subject to higher levels of exposure and harm during biological and chemical incidents because children consume more water and air per weight than adults. When chemical, biological, radiological, nuclear or explosive agents enter the environment children will be more vulnerable to the agents adverse effects. For this reason it is essential that an adequate amount of pediatric medical counter measures are in stock. The federal government recognizes that the FDA has not approved a large number of countermeasures used for pediatrics. The Human Health Services Department is currently exploring the off-label use of medications for counter measures with the Biomedical Advanced Research Authority and will have recommendations as early as 2012.

Disaster teams and planning should include a pediatric specialty team (example pediatric strike teams), including pediatric specialty nurses and physicians, and should allow for plans to transport to pediatric specific facilities such as hospitals and clinics. Disaster teams should have a reserve of pediatric professionals to supplement if a large number of children are harmed. These professionals should have a pediatric expertise in surgical, intensive care, nursing, and/or neonatology. Pediatric specialty centers are needed to increase available bed capacity especially critical care beds if needed.

Conduct a pediatric specific Hazard Vulnerability Analysis. Look to identify where children convene regularly like schools, popular field trip destinations, summer camps, and juvenile facilities. Use this tool as a guide in developing emergency plans and drills. Make sure there are sufficient proportions of pediatric victims and child-related scenerios in all disaster drills.

## OTHER IMPORTANT RECOMMENDATIONS

- × Encourage Education and Training
- × Use Your Available Resources
- × Consult Legal Counsel
- × Prepare for Mental Health Support

Healthcare providers whom participate in emergency planning and disaster response should be encouraged and/or required to obtain pediatric specific emergency training and education. Courses such as Advanced Pediatric Life Support (APLS), Emergency Nursing Pediatric Course (ENPC), Pediatric Advanced Life Support (PALS), Pediatric Education for Pre-Hospital Professionals (PEPP), and Neonatal Resuscitation Program (NRP) are important training courses. School nurses should obtain School Nurse Emergency Care (SNEC) and Disaster Preparedness for School Nurses (DPSN).

Use the resources available to you. Available resources include:

- Family Readiness Kit; Preparing to Handle Disasters – available on AAP Web site.
- Children, Disasters & Terrorism Toolkit – available on AAP Web site
- Your Family Disaster Plan – available through the American Red Cross
- Your Family Disaster Supplies Kit – available through the American Red Cross

Consult legal counsel to determine guidelines on how your emergency department or organization will address and manage legal dilemmas that may arise with regard to pediatric patients during a disaster situation. Consider legal issues that may arise when children are separated from their parents or when children are in a mass care, community shelter or a decontamination situation.

Have a plan to refer to local psychiatric centers and have local mental health professionals on your emergency planning team. These health professionals should be involved in disaster drills and planning. The response team should have materials on hand and appropriate training to handle the

emotional transition of the pediatric patient after the disaster.

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