Disaster Preparedness: Meeting the Needs of Children

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Children in communities throughout the United States have been increasingly affected by natural disasters and disasters of human origin. During a 3-month period in 2017, the pediatric population was affected by Hurricane Harvey in Texas and Louisiana; Hurricane Irma in Florida, Georgia, and South Carolina; and the devastation of Hurricane Maria in Puerto Rico. Uncontrolled wildfires in both Northern and Southern California devastated families and communities. Mass casualty shootings at a concert in Las Vegas, Nevada, and a church in Sutherland Springs, Texas, coincided with or quickly followed these disasters. With each event, hospitals and emergency services were significantly affected while meeting the needs of the pediatric population.

ADOPTING A NATIONAL PREPAREDNESS STRATEGY

Children under 18 years of age make up about 25% of the U.S. population, and the physiologic, developmental, mental health, and behavioral needs of children and adolescents require particular attention in disaster and emergency preparedness planning (Dziuban, Peacock, & Frogel, 2017). In 2010, the National Commission on Children and Disasters issued a report to the President and Congress making more than 80 specific recommendations, including the adoption of a national strategy on children and disasters (National Commission on Children and Disasters, 2010). In 2011, after Hurricane Katrina and the H1N1 influenza virus pandemic, the Emergency Mass Critical Care Task Force developed recommendations for hospitals to address issues of pediatric surge planning (Kissoon, 2011). The document contained important and practical recommendations for action at the local, state, and national levels. Additional recommendations followed in 2012 and 2013 (Dichter et al., 2014).

In March 2013, Congress passed and the president signed the *Pandemic and All-Hazards Preparedness Reauthorization Act,* which included a provision creating the National Advisory Committee on Children and Disasters to provide expert advice and consultation to the Secretary of the U.S. Department of Health and Human Services on the medical and public health needs of children in disasters. More recently, in 2015, the National Pediatric Disaster Coalition convened 208 individuals representing health care coalitions, hospitals, and other health care entities (including behavioral health); education; and local, state, and federal governments. Attendees identified important gaps in pediatric disaster preparedness (National Pediatric Disaster Coalition, 2015). Then in 2016, the Federal Office of the Assistant Secretary for Preparedness and Response released the new *Health Care Preparedness and Response Capabilities for 2017 to 2022*, which outlines objectives that the nation's health care delivery system should undertake to prepare for, respond to, and recover from emergencies, including those affecting children and adolescents (Office of the Assistant Secretary for Preparedness and Response, 2016).

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THE CURRENT STATE OF PREPAREDNESS

Despite significant evidence-based guidance, many communities have not yet implemented the recommendations proposed by the Federal Office of the Assistant Secretary for Preparedness and Response, and the needs of pediatric trauma victims often remain underrepresented in community preparedness drills (Burke, Iverson, Goodhue, Neches, & Upperman, 2010; Lyle et al., 2015). In a recent review of 49 hospital reports on disaster preparedness, only nine organizational reports included information verifying the inclusion of pediatric disaster drills (Ferrer, Ramirez, Sauser, Iverson, & Upperman, 2009). In addition, a qualitative review included in the report showed that there is often a lack of pediatric-specific supplies and equipment, a lack of family-centered care implemented on pediatric units, no evidence of pediatric reunification policies, gaps in parent–child identification systems, and a lack of pediatric standards in an altered care situation (Ferrer et al., 2009). Likewise, a study conducted by the National Advisory Committee on Children and Disasters (2015) found that only 47% of hospitals have disaster plans that addressed pediatric needs (National Advisory Committee on Children and Disasters, 2015). Finally, a 2015 report by Save the Children showed that only 17 of the 80 recommendations of the National Commission on Children and Disasters have been implemented, 44 are in progress, and 20 have not yet been addressed (Save the Children, 2015).

LOCAL COMMUNITY RESPONSE

Many health care facilities that serve predominantly adult populations believe that in the event of a disaster, pediatric patients would be triaged to local or regional children's hospitals or hospitals that have pediatric units. This belief is contrary to the evidence after recent disasters. In the aftermath of the movie theater shooting in Aurora, Colorado, many first responders transported patients in the back of patrol cars, which resulted in many adults being taken to children's hospitals and children being taken to adult hospitals. During the mass shooting in Las Vegas, Nevada, many of the critically injured were taken to hospitals by private automobiles, and only two of the region's hospitals absorbed most of the more than 250 patients who were injured. The university medical center stated that the response went well because the staff regularly perform preparedness drills (Fink, 2017).

Children's hospitals can serve as a resource for education, leadership, and management to foster competency in disaster response and child-focused care. However, state and local community preparedness will benefit from a systems-based approach to ensure that all stakeholders prepare within the context of other community partners and not in isolation (Institute of Medicine, 2014). For example, the Los Angeles County, Department of Health, Emergency Medical Services Agency worked with local pediatric experts, including a regional children's hospital and other hospitals, over a 5-year period to include pediatric surge capacity in their disaster preparedness and management plans (Berg et al., 2014). New York City also has a pediatric disaster coalition, and local children's hospitals work within communities to ensure that disaster drills include pediatric patients and that pediatric needs are considered (NYC Pediatric Disaster Coalition, n.d.). However, more than 15% of U.S. children live in rural communities, which often rely on volunteer emergency services and do not have access to the pediatric health care services that are available in urban and suburban communities (Rural Health Research Center, 2015). In addition, low income populations, many of whom are children and adolescents, are disproportionately affected by disasters, which stresses the stability of the safety net system in many areas (Institute of Medicine, 2014).

BROADENING AND SUSTAINING PREPAREDNESS

Disasters affect the entire health care system, and although emergency and trauma systems are an important focus, a public health emergency affects the primary and ambulatory care system, which includes private practice providers, long-term care, behavioral health, and specialty care. Moreover, age-related vulnerabilities increase physiologic and psychological risks to children, magnify their unique needs, and impair recovery (Dziuban et al., 2017). However, advancing preparedness, particularly within pediatric hospitals, can be challenging, because institutional priorities vie for limited resources. Historically, preparedness has relied on grant funding, with many programs competing for a portion of these dollars, which are time limited and not available to for-profit entities like private practice providers. Sustained emergency preparedness must become an integral part of the entire U.S. health care system, with institutions focusing on activities that build from and leverage day-to-day functions to strengthen preparedness and response (Institute of Medicine, 2014).

All communities should implement guidelines for addressing the needs of the pediatric population as a required component of institutional and regional disaster preparation and training. The required standards must also address the unique needs of children with disabilities and special health care needs, a population particularly vulnerable during emergency crises (Markenson, Fuller, & Redlener, 2007). Unfortunately, many

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