

COMMENTARY

Improving Pediatric Preparedness Performance Through Strategic Partnerships

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The 2009 H1N1 influenza pandemic provided a real-world exercise that revealed the strengths and weaknesses of the public health system in response to a major infectious disease outbreak. Because children were disproportionately affected, a review of lessons learned offered opportunities to improve future planning. The American Academy of Pediatrics (AAP) and the Centers for Disease Control and Prevention (CDC) implemented various strategies to address the needs of children during the pandemic—these efforts illustrate that strategic partnerships can improve preparedness.

Pediatricians faced many challenges throughout the pandemic. Clinicians universally reported being overwhelmed by the high volume of patients, numerous questions from various audiences, and “information overload” (ie, many messages and rapidly changing advice). A significant difficulty was helping the public understand when to seek treatment, so that health care systems were not inundated with questions and visits from patients who did not have symptoms of an influenza-like illness (ILI) or were not at higher risk of complications if infected. Pandemics can evolve rapidly, so developing strategic alliances and effective communication systems is advantageous. This is especially important when considering children, as they constitute about one-quarter of the US population and require special planning in an emergency or disaster.^{1,2}

WARNING, CHILDREN AT RISK

The AAP and the Trust for America’s Health identified that children were at increased risk during an influenza pandemic and recommended specific actions to address children’s needs.³ A National Commission on Children and Disasters was appointed in 2008 to examine and assess the needs of children in relation to the preparation for, response to, and recovery from all hazards, including major disasters and emergencies. In 2010, the commission delivered its final report to the president and Congress.² The report cited gaps in disaster preparedness and called for the development of a national strategy to ensure that children are protected before, during, and after a public health emergency. The commission encouraged government agencies and nongovernmental organizations to consider children a distinct population in disaster planning, and to include pediatric experts in all planning efforts.

The recommendation that the needs of children should be prioritized in disaster preparedness, mitigation, response, and recovery planning required validation. In October 2010, the AAP, in collaboration with the Children’s Health Fund, developed questions for an opinion poll to stimulate further discussion on

the allocation of resources related to disasters. The vast majority of those surveyed supported giving higher priority to children and their needs over adults in the setting of scarce resources during a disaster. This opinion remained consistent across various demographics, including region, household income, education, age, race, gender, and political party.⁴

During the pandemic, certain children seemed to be at increased risk. Clinicians reported that it was challenging to know which children might require early care or increased monitoring. The AAP and the CDC recognized this and immediately took steps to determine which children were at “highest risk.” On September 4, 2009, data related to children at highest risk of experiencing fatal outcomes from H1N1 infection were published in the *MMWR*.⁵ With CDC support, the AAP identified a group of experts to review and synthesize these data and provide practical recommendations to assist clinical providers in the management of H1N1 in children. On the basis of preliminary mortality data, children with certain conditions appeared to be at highest risk of experiencing fatal outcomes from H1N1 illness. The AAP highlighted which children were most likely to be affected by the H1N1 virus or would merit closer medical follow-up or treatment. Because the situation was constantly changing, updates and guidance were shared throughout the pandemic. Convening experts to review data and share recommendations with those who care for children was deemed an effective strategy toward improving pediatric preparedness.

SHARED INTEREST, LESSONS LEARNED

AAP and CDC leaders expressed interest in learning from experiences during the pandemic to improve future response. An ongoing dialogue at various leadership levels was maintained throughout the pandemic, and when the public health emergency concluded, the AAP and CDC conducted several after-action discussions with internal and external partners to determine ways to improve preparedness planning. These discussions led to several important conclusions.

For the first time, the CDC activated a Children’s Health Team and a Children’s Health Desk within the CDC Emergency Operations Center. In addition to this, CDC leaders identified crucial elements for building capacity to address the needs of at-risk populations through strategic partnerships, including

- targeted outreach to strategically selected stakeholders;
- enhanced engagement of identified partners and associations; and
- rapid establishment of communication vehicles and networks.

The AAP established a multidisciplinary response team of staff and pediatrician leaders. Various perspectives and specialty areas were represented. In addition to infectious disease experts, it became clear that as more children became infected with H1N1, expertise related to emergency medicine, critical care, and disaster preparedness was needed to determine the best course of action. When the government began discussing community mitigation and school closures, it was important to include pediatric expertise related to child care facilities, schools, and pediatric practices. When there were questions about vaccine safety and distribution, public health and AAP chapter leader involvement became critical. It was particularly challenging when guidelines were developed or when resource allocation decisions were made that affected care providers in various settings. Practitioners or end users need to be included in planning discussions from the beginning to produce effective clinical guidelines that are both relevant and practical.

Establishment of this pediatric influenza response team, known as FluPeds, allowed the AAP to promote collaborative discussions and decision-making, address member concerns, and respond to requests efficiently throughout the pandemic. This team served as a vehicle for rapid review of data, discussion of diagnosis and treatment options, and identification of strategies for sharing key messages and resources with pediatric clinicians.

Many telephone triage and clinical algorithms were proposed around the time when hospital emergency departments were overrun with patients with ILI. The FluPeds team assisted the AAP and the CDC in the development and joint release of an influenza season triage algorithm for children with ILI.⁶ This algorithm was developed for use by clinicians to help determine whether symptomatic children should receive a medical evaluation, be administered antiviral medications, or be followed up closely. The algorithm considered whether the child lived with or was cared for by an individual at higher risk of complications from influenza, identified strategies to help prevent the spread of influenza, and emphasized the importance of appropriate monitoring and follow-up with the child's medical home/primary care provider. Although comprehensive policies and guidance documents were also necessary, many clinicians reported that this tool was helpful as a quick and efficient "go-to" resource.

The FluPeds team and AAP leaders identified several areas that could be improved in future public health emergencies. After-action discussions revealed the following:

- Including pediatric experts, especially practitioners, in planning discussions and development of guidance would improve health care system efficiency and the care provided to children.
- Management of messaging to health professionals would reduce information overload and enhance their ability to care for children in need of medical care.
- Putting a system in place to discuss pediatric considerations in advance of an emergency would enhance outcomes for all populations, especially if resources were limited.

ENHANCING PEDIATRIC PARTNERSHIPS TO PROMOTE PANDEMIC PREPAREDNESS

After-action discussions suggested that enhanced partnerships between pediatricians and state or local health department representatives would likely result in improved pediatric preparedness planning. Strategic conversations between AAP chapter and state health department leaders would ensure an existing line of communication to facilitate a response in an emergency. To address this, the AAP and the CDC convened the "Enhancing Pediatric Partnerships to Promote Pandemic Preparedness" meeting to enhance these connections and develop future response strategies.

Funding was available to bring 10 state teams of 4 representatives to this meeting. The 10 states invited (California, Florida, Georgia, Illinois, Michigan, Missouri, New Mexico, Texas, Utah, and Virginia) were asked to identify a team leader, convene a team with pediatric and public health leaders, maintain a strong connection to the AAP chapter office in that state, and develop a draft state action plan before the meeting.

Participant surveys, conference calls, and review of action plans before the meeting helped to identify model strategies and common areas of interest to guide development of an agenda. The April 2011 meeting included 66 participants: 40 members from the 10 participating states and AAP and CDC leaders. Attendees discussed lessons learned from the 2009 pandemic, determined strategies for advancing pediatric preparedness, and identified key resources to improve state-level preparedness. Each of the 10 teams discussed models and challenges experienced during the pandemic, shared priority steps within their action plan, and identified solutions. Meeting presentations focused on model strategies and interest areas, as described in the following sections.

PRIORITIZING WITHIN AND AMONG HIGH-RISK GROUPS

In any disaster or emergency, it can be challenging to determine how to allocate available resources. A key question from the pandemic was how to prioritize within high-risk groups when vaccine, antiviral medications, or health care providers were limited. Determining a system to facilitate decision-making in advance of an emergency would be easier than establishing this scheme in the midst of a crisis. Establishing a pediatric advisory committee composed of pediatric providers, stakeholders, and public health representatives (who would meet regularly to discuss preparedness and response issues for children) was a model strategy that resonated with those who attended the meeting. Participants concluded that this advisory committee should be in place in each state to facilitate discussions with regard to children, coordinate response efforts, and propose improvements. In addition, strategies should be in place to identify high-risk populations and determine ways to improve access to care. The most effective pediatric advisory committee would be one that is sustainable over time, with ongoing and consistent funding and staff.

Registries that identify certain high-risk conditions can be extremely useful. As an example, the Michigan Care Improvement Regis-

try (MCIR) was useful in pandemic response activities and was successfully used by a variety of providers to track vaccine inventory and distribution, as well as to flag individuals at high risk for developing complications from influenza. As a prerequisite to placing orders for H1N1 vaccine, several states found that mandating the use of the state registry greatly expanded its use. Whether practitioners use an electronic registry, a database, or a chart identification system, having a mechanism in place to identify patients with various medical conditions during a pandemic or other emergency would be especially useful.

STRATEGIC COMMUNICATION AND MESSAGING

Communication and messaging are important components of an effective strategic response during a disaster and, therefore, are a critical component of pediatric preparedness. Suboptimal messaging and communication can easily exacerbate a crisis. Messaging is important (ie, what to say and how to say it), as is the means to deliver the message. In a time of crisis, the message needs to be simple and timely, should come from a trusted source, and should be crafted to reassure and/or to communicate concrete steps to reduce risk.

In an emergency, communication systems should leverage existing and trusted relationships, especially those between public health and health care organizations. Messaging strategies should aim to minimize excessive, conflicting, confusing, or unnecessarily anxiety-provoking messages. The “one voice, one message” concept is a simple way to approach this. Also, communication is not a “pipeline” from which information flows, but an exchange of information. Like the handing off of a baton in a relay race, the passing of information critically depends on the readiness of the receiver. No matter how accurate the information, if the recipient is not ready to receive the message or does not trust its source (or cannot confirm its validity), then the message is lost. The baton is dropped. Having information delivered by a known and trusted spokesperson, or having it vetted through trusted professional organizations, ensures better acceptance of the message.

Messaging strategies should promote two-way (or bidirectional) communication at all times. There must be an efficient way to distribute information to front-line clinicians and there should be a vehicle for these clinicians to communicate back to decision-makers. An example is to offer practitioners a way to discuss their experiences with those developing clinical guidelines or mitigation strategies.

INCORPORATING PEDIATRICIANS INTO STATE-LEVEL DECISION-MAKING

By increasing their involvement in preparedness planning and response, pediatricians can have dialogues with emergency planners and public health colleagues about ways to improve services for children. By inviting pediatric experts into discussions about pandemic preparedness and disaster planning, federal, state, and local decision-makers can ensure that children’s issues are addressed early. Each population and region has unique needs, risks, and challenges. The implementation of federal recommendations during a disaster can

vary from state to state. It is important to identify and evaluate specific gaps in pediatric readiness at the state/local level, by involving pediatricians in disaster preparedness and response efforts. This collaboration should yield better health care delivery during day-to-day operations, as well as in crisis situations.

CONCLUSIONS

Special attention must be paid to our nation’s ability to meet children’s needs before, during, and after a pandemic or disaster. The discussions surrounding the April 2011 AAP/CDC meeting highlight the importance of establishing strategic state and local partnerships between pediatricians and public health professionals. Pediatricians working in partnership with public health professionals can make a recognizable impact in advocating for the needs of children and families who seldom receive enough attention in disaster planning. Improving pediatric preparedness and forming strategic partnerships is the foundation on which to build a cohesive plan to achieve state-level emergency readiness should a disaster or pandemic occur.

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REFERENCES

1. American Academy of Pediatrics Committee on Pediatric Emergency Medicine; American Academy of Pediatrics Committee on Medical Liability; Task Force on Terrorism. The pediatrician and disaster preparedness. *Pediatrics*. 2006; 117(2):560-565.
2. National Commission on Children and Disasters. *2010 Report to the President and Congress*. Rockville, Maryland: Agency for Healthcare Research and Quality; October 2010. AHRQ publication No. 10-M037.
3. Pandemic influenza: warning, children at-risk. Issue brief by Trust for America’s Health and the American Academy of Pediatrics; October 16, 2007. <http://www2.aap.org/disasters/pdf/AAP-TFAH-KidsPandemicFluRevised10-16-07.pdf>. Accessed February 27, 2012.
4. American Academy of Pediatrics National Survey, October 2012. Conducted by Marist College Institute for Public Opinion. <http://www2.aap.org/disasters/pdf/AAP-Opinion-Poll-Data-Oct2010.pdf>. Accessed February 27, 2012.
5. Centers for Disease Control and Prevention (CDC). Surveillance for pediatric deaths associated with 2009 pandemic influenza A (H1N1) virus infection - United States, April-August 2009. *MMWR Morb Mortal Wkly Rep*. 2009;58(34):941-947.
6. American Academy of Pediatrics and Centers for Disease Control and Prevention. 2009-2010 Influenza season triage algorithm for children (≤ 18 years) with influenza-like illness; October 16, 2009. <http://www.cdc.gov/h1n1flu/clinicians/pdf/childalgorithm.pdf>. Accessed February 27, 2012.