

Executive Summary

The Next Challenge in Healthcare Preparedness: Catastrophic Health Events

In 2007, the Office of the Assistant Secretary for Preparedness and Response (ASPR) in the U.S. Department of Health and Human Services (HHS) contracted with the Center for Biosecurity of UPMC (the Center) to conduct a 2-year, comprehensive assessment of the HHS Hospital Preparedness Program (HPP), from the time of its establishment in 2002 through mid-2007, and to develop recommendations for improving and evaluating future hospital preparedness efforts. This document, *The Next Challenge in Healthcare Preparedness: Catastrophic Health Events (Preparedness Report)*, is the third major deliverable of this project.

Prior to completing this *Preparedness Report*, the Center submitted to HHS its *Evaluation Report* (delivered March 2009). A key finding of the *Evaluation Report* was that, while much progress has been made in healthcare preparedness for common medical disasters, the U.S. healthcare system is ill-prepared for catastrophic health events (CHE), and there is as yet no clear strategy that will enable an effective response to such an event. For this report, the definition of “catastrophic health event” is that put forth in Homeland Security Presidential Directive 21 (HSPD-21): an event that could result in tens or hundreds of thousands of sick or injured individuals who would require access to healthcare resources.

This *Preparedness Report* proposes the following key elements of a national strategy for healthcare preparedness and response:

- Definition and vision of a U.S. healthcare system prepared to handle the response to a spectrum of mass casualty events that vary in size and severity from common medical disasters (eg, a bus crash or tornado), to catastrophic health events (eg, a nuclear detonation) that would seriously injure or sicken tens of thousands of people or more.
- Recommendations and actions that will lead to a healthcare system capable of responding to the full spectrum of mass casualty events, including CHEs.

Methodology

The methodology used for this *Preparedness Report* included a thorough review of the published U.S. and international literature on healthcare disaster preparedness, healthcare response to disasters, and complex systems theory literature; a review of HPP program guidance from 2008 and 2009; and other federal guidance, plans, and documents with particular emphasis on CHEs. Three CHE scenarios based on federal planning assumptions also were considered in the development of this report.

A preliminary presentation of the analysis and recommendations of this report was made at the second Issue Analysis Meeting on February 24, 2009. Input and peer review from that meeting's participants — state and local disaster coordinators and key disaster healthcare leaders in government and academia — have also been incorporated into this document. See *Appendix D: Second Issue Analysis Group Meeting Participants* (page 54).

Major Challenges to Catastrophic Health Event Response

The Center's analysis of the current system for a national response to CHEs revealed several major challenges:

- Many hospitals and other healthcare organizations do not yet participate in fully functional healthcare coalitions, which are necessary to CHE response.
- Most existing coalitions do not yet have the ability to share information, resources, and decision making with neighboring coalitions during a CHE.
- There are inadequate systems to perform the necessary triage, immediate treatment, and transport of patients outside of the immediate area stricken by a CHE.
- Existing plans and resources for patient transport are grossly inadequate for moving the expected numbers of patients.
- There is not enough guidance on the crisis standards of care that will be necessary throughout all stages of a CHE.
- There is no plan that sufficiently outlines healthcare roles, responsibilities, and actions during the response to a CHE.

Definition and Vision of a Healthcare System Prepared for Events of All Sizes

Definition: A well-prepared healthcare system is able to effectively manage the healthcare consequences of common medical disasters and is able to respond quickly and with agility to harness all useful public and private national resources to cope with a CHE.

Vision: During a disaster, a well-prepared healthcare system will be able to function under a variety of adverse circumstances that may include: an immediate surge of patients in need of acute care, a prolonged surge of patients, a contaminated or contagious environment, loss of infrastructure that necessitates triage and treatment outside of healthcare institutions, poor situational awareness, and disruption of incident management chains of command.

Recommendations

Described below are recommendations and specific actions that the federal government can take to achieve progress toward preparing the U.S. healthcare system for responding effectively to mass casualty events of all sizes (see Table 1). These recommendations are derived from the results of research and evaluation conducted by the Center in developing the *Descriptive Framework*, the *Evaluation Report*, the *HFPP and ECP Partnership Evaluation*; from conducting Issue Analysis Meetings; and from the Center's independent analysis.

Table 1: Overview of Recommendations for Improving U.S. Healthcare Response to Mass Casualty Events of All Sizes

RECOMMENDATIONS	ACTIONS
<p>Every U.S. hospital should participate in a healthcare coalition that prepares and responds collaboratively to common medical disasters and CHEs.</p>	<ul style="list-style-type: none"> • A Presidential Decision Directive on healthcare preparedness for CHEs should be issued (as a follow-up to Homeland Security Presidential Directive-21*) to outline a vision of preparedness that builds on progress to date and is consistent with the National Health Security Strategy (NHSS).** • HPP, U.S. Centers for Disease Control and Prevention (CDC), and U.S. Department of Homeland Security (DHS) federal grant programs should require organization of grantee preparedness and response activities through healthcare coalitions linked to emergency management and public health authorities. Program guidance should outline the critical functions that coalitions must be able to perform.† • The HPP should promulgate more detailed guidance on the organization and response roles of healthcare coalitions, including surge capacity goals. • HPP guidance should specify surge goals to be achieved by healthcare coalitions. • Centers for Medicare and Medicaid Services (CMS) should provide all healthcare entities with financial incentives to participate in healthcare coalitions. • HPP should establish goals and metrics to assess the progress of the development of healthcare coalitions in every community.
<p>Links should be established between neighboring healthcare coalitions to enable regional exchange of healthcare information and assets during a CHE.</p>	<ul style="list-style-type: none"> • HPP, CDC, and DHS program guidance should specifically require collaboration with neighboring jurisdictions and coalitions across state lines, including sharing of plans and joint exercises. • HHS should develop guidelines and requirements for communications, situational awareness, and health information technology (HIT).
<p>Out-of-hospital triage sites should be established and healthcare responders should be trained in CHE triage.</p>	<ul style="list-style-type: none"> • Future HPP guidance should include requirements for out-of-hospital triage site designation, and ensure provision of specialized training in CHE triage for National Disaster Medical System (NDMS) teams and identified first responders.

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<p>A patient transportation system that harnesses alternative, private sector resources should be created.</p>	<ul style="list-style-type: none"> • Federal initiatives already in place to provide a national network of emergency medical transport capacity should address the enhancement of local emergency medical transportation following CHEs. • NDMS, DHS, and United States Transportation Command (USTRANSCOM) should jointly review and revise aeromedical evacuation strategies. • Federal and state governments should develop and disseminate guidance and best practices for transportation planning efforts. • HHS and DHS should jointly commission a detailed study of crisis standards of care related to patient transportation.
<p>Development of crisis standards of care should be expanded, and their consistent implementation within and across states should be promoted.</p>	<ul style="list-style-type: none"> • HHS should continue to provide leadership on the issue of crisis standards of care, to include providing a clearinghouse of information to facilitate state and local planning efforts. • Future HPP guidance should specify crisis standards of care planning, as well as intrastate and interstate consistency in crisis standards, as priorities for grantees.
<p>A national framework for healthcare response to CHEs should be developed to guide states, jurisdictions, and local entities in developing ConOps for medical and public health activities.</p>	<ul style="list-style-type: none"> • DHS and its federal partners should expedite the development of federal Concept of Operations (ConOps) for CHEs. • HHS should create a work group of federal planners and stakeholders to sketch a national ConOps for medical and public health activities (Emergency Support Function [ESF-8]) following a CHE, using a Tier 1 Urban Area Security Initiative (UASI) region.

* The White House. *Homeland Security Presidential Directive 21: Public Health and Medical Preparedness*. October 18, 2007. http://www.dhs.gov/xabout/laws/gc_1219263961449.shtm#1. Accessed November 12, 2009.

** U.S. Department of Homeland Security. Federal Emergency Management Agency. *Comprehensive Preparedness Guide 101*. March 2009. 2009. <http://www.fema.gov/about/divisions/cpg.shtm>. Accessed January 22, 2010.

† Healthcare coalition critical functions are described in the HHS Tier 2 *MSCC Handbook*, the Center for Biosecurity *Evaluation Report*, and the Center for Biosecurity *Provisional Assessment Criteria* (see *Appendix B* of this *Preparedness Report*, page 36).

Conclusions

While the recommendations made in this report are feasible, many of them will take time to accomplish. Concrete progress toward the goal of CHE preparedness can be achieved through the series of actions outlined in this report, but will require sustained effort at the federal, state, and community levels for a number of years, and funding sufficient to make it possible.