

VIEWPOINT

Enhancing Private Sector Health System Preparedness for 21st-Century Health Threats

Foundational Principles From a National Academies Initiative

Donald M. Berwick, MD

Institute for Healthcare Improvement (IHI), Boston, Massachusetts.

Kenneth Shine, MD

Department of Internal Medicine, The University of Texas at Austin.

Not since the threat of global nuclear war first emerged has humankind faced the risks of potential disasters at the scale that the 21st century now brings. Climate change, international terrorism, pandemics, and cyberwarfare are only some of the ways in which injury, morbidity, and mortality can spread rapidly to millions of people. Ebola, as tragic as it has been, is but a small example of what could occur if, for instance, a nuclear blast went off in New York, sea level surges flooded Florida, or the electric grid went down in a health emergency. The current coronavirus epidemic in China has created a major international public health threat, led to the full or partial quarantine of nearly 45 million people, and interrupted commerce in many cities.¹

These threats may come in 2 distinct forms. One is a challenge to capacity—a surge of demand for, for instance, trauma care, burn care, or treatment of an infectious agent at a scale far beyond any currently familiar level of mass casualty. Many local care systems are prepared to manage surges of demand of some size.² But what if, instead of a few dozen or a few hundred affected individuals, the sudden need were to provide care for thousands or tens of thousands?

A second form of threat is a disaster paired with the simultaneous destruction of basic infrastructure, such as a sustained failure of the electrical grid due to cybersabotage. How would mass casualties be managed if the power went out for many days, gasoline and water pumps no longer worked, and the communication system disappeared?

How ready is the US health care system for such 21st-century threats? And how could the nation become more prepared? This was the topic of a series of expert meetings and public workshops titled “Enhancing Private Sector Preparedness for 21st Century Health Threats” between May and October 2019, hosted by the National Academies of Sciences, Engineering, and Medicine (NASEM), and sponsored by the Health and Human Services Assistant Secretary for Preparedness and Response (ASPR). The goal of these meetings was to identify ways to strengthen health care preparedness, levers to incentivize the health care sector, and approaches to activate private sector supporters.

Balancing Regional and National Approaches

Participants concurred that the US health system is not currently prepared for such threats, and, furthermore, that the scale of these challenges is far too large for any immediate, comprehensive, national solutions. Progress must be made stepwise, building systemic preparedness over time.

A logical first step would be to develop and implement efforts to prepare for specific threats at a manageable scale in defined regions of the country, and thereafter to secure a much longer-term set of commitments

and multiparty, public-private partnerships as foundations for more comprehensive preparedness.

Importantly, no matter what the scale of action—local, state, regional, or national—true preparedness extends far beyond the walls of an individual jurisdiction or health care organization. Any viable initiative would need to involve unfamiliar and challenging forms of cooperation and collaboration among a wide array of personnel, facilities, and other resources, plus strong public-private partnerships. “Preparedness” would invoke clear roles and prompt specialized training for health care personnel, professional organizations, and medical specialty services, such as burn and trauma centers. Regulatory issues, such as the ability of physicians to practice across state borders, must be resolved. Similarly, rules and guidelines for payment would need to flex quickly under crisis conditions.

Foundational Principles

Participants agreed on 5 foundational principles for an effective approach:

1. Create and support entities to organize and facilitate regional cooperation for health care preparedness and response. These entities would engage governmental and nongovernmental agencies and champion collaboration, such as the Northern Virginia Hospital Alliance³ and the Northwest Healthcare Response Network.⁴ ASPR is currently piloting an “all hazards” approach: eg, the Regional Disaster Health Response System (RDHRS),⁵ with projects under way at Massachusetts General Hospital and the University of Nebraska Medical Center.

2. Develop a system of regional collaborative projects. Each project would focus on 1 or 2 specific threats, such as large-scale trauma, burns, or infectious disease outbreaks. One current example is the National Ebola Training and Education Center, comprising 10 regional training centers led by the University of Nebraska Medical Center, Emory University, and Bellevue Hospital.

3. Develop metrics. A strategic planning process that includes national, regional, and institutional leaders would be convened to specify goals and metrics of readiness for hospitals, regional coalitions, and the national system.

4. Engage partnerships among regional coalitions and health systems and hospitals to identify needs and mechanisms for training. This would occur in advance and in real time, to enhance decision-making and coordinated incident management.

5. Engage and collaborate with professional organizations and other nongovernmental groups to identify and secure the resources needed to strengthen

Corresponding

Author: Donald M. Berwick, MD, Institute for Healthcare Improvement (IHI), 53 State St, 19th Floor, Boston, MA 02109 (donberwick@gmail.com).

preparedness, in public-private partnership. Those limited federal funds that are available should be used to support these regional efforts most effectively.

Barriers

Two technical elements of preparedness seem especially difficult given the current environment in most health care markets: data sharing and supply chain management.

A region well prepared for managing large-scale disaster would need real-time information on what idle, fungible resources are available and where. Yet data sharing—such as pooling information on bed availability or staffing levels—runs counter to prevailing habits in many regions. Hospitals, for example, may resist revealing detailed information on occupancy levels because of concern about harming their competitive position. During disasters, this will not be acceptable or appropriate.

Beyond data sharing, it would be essential in a major regional disaster for a central coordinator to manage an integrated supply chain for medications, equipment, staff, and other resources. Yet the nation now has limitations and interruptions in the supply of medicines even in the absence of surge needs. For example, some essential cancer chemotherapy agents, such as vincristine, have become unavailable for substantial periods of time.⁶ Hospitals' stockpiling and hoarding supplies defensively may make the problem worse, especially under conditions of disaster. Such habits need to change.

Next Steps

Participants converged on 2 distinct, but related, additional approaches. First, the United States needs continued progress toward a strategic and sustainable national system of health care preparedness. This effort should be coordinated by HHS/ASPR and should engage leading organizations, not only in the private sector, but also in government, professional disciplines, and communities. The departments of Defense and Homeland Security also would have key roles.

To facilitate this progress, ASPR should continue and increase its current efforts to stimulate and facilitate an inclusive, evidence-based, national dialogue around preparedness, emphasizing public-private partnerships. In the current resource-constrained environment, independently organized regional coalitions appear to be a feasible, incremental step. ASPR, through its management of the Hospital Preparedness Program,⁷ should continue to support the efforts of regional coalitions. Current programs, such as the Hospital

Preparedness Program and the RDHRS pilots, should be carefully and continually evaluated. ASPR should charge an independent panel of experts to evaluate the current practices for hospital and health system preparedness, identify ways to address long-term resource needs, and recommend a research agenda.

Second, most participants favored the development and implementation of an accreditation or certification program for hospitals and health systems to encourage and recognize them for progress toward specific, measurable, regional objectives in strengthening their readiness for disasters. Hospital and health system leaders identified this initiative as perhaps the most viable, single private sector-based systemic initiative for enhancing preparedness, beyond preparing individual hospitals.

A certification program should be grounded in evidence and supported by a broad cross-section of stakeholders. To that end, professional associations such as the American Hospital Association, American Medical Association, Association of American Medical Colleges, and the Federation of American Hospitals, as well as medical and nursing training and accreditation organizations, should work together to agree on an appropriate certifying organization, from among those approved by the Centers for Medicare & Medicaid Services,⁸ to manage the program.

Conclusions

Both the federal government and many localities in the United States have made substantial progress in preparing for some local forms of mass casualty events, such as infectious disease outbreaks and multiple-victim shootings. However, at this point, the US health care system is wholly unprepared for a wide range of 21st-century health threats. It lacks the will, coordinative mechanisms, habits of cooperation, governance agreements, and shared resource investments essential to preparedness. Progress will require unprecedented participation and contribution from an enormous range of stakeholders, including government, the nonprofit and private sectors, and professionals involved in nearly all facets of health care. How hospitals, health systems, and government agencies manage and share information before, during, and after disasters will need to change, and investments by both the public and private sectors will need to expand. The best way forward is making parallel progress toward both a national system and regionally focused projects and developing and implementing a recognized standard for excellence in preparedness at the facility and system level.

ARTICLE INFORMATION

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