Addressing Bioterrorist Threats: Where Do We Go from Here?

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In discussing the threat of bioterrorism, planning, coordination, and preparedness are recurrent themes. State and local planning are of particular concern to me, having served as a local health officer and as health commissioner in New York City during the World Trade Center bombing. I have no doubts that the threat of terrorism within our borders is real. And several years later, when the sarin attack occurred in the Tokyo subway system, it was hard not to imagine what such an event would have meant in the New York subway system. A fundamental step toward addressing the threat of bioterrorism is comprehensive planning that focuses first and foremost on local preparedness and response capacity—integrating the role of state, regional, and federal governments, as well as state, regional, and national assets. To plan effectively, we have to think through the different types of scenarios that may confront us, including the announced release of a biological agent, the silent release of a biological agent, or some kind of hybrid event, such as having a bomb go off, that is followed by the release of a biological or chemical agent. In addition, we have to think about the scenarios where person-to-person transmission can occur or those with noncommunicable infectious diseases. Bioterrorism covers a very broad spectrum of concerns, from catastrophic terrorism with mass casualties, to microevents using low technology but producing civil unrest, disruption, disease, disabilities, and death. All these scenarios must be considered. We need to identify the assets and capabilities at all different levels and identify the gaps, critical players, policymakers, and stakeholders, and we must forge working relationships within the public health and health-care community as well as with outside partners. We need to develop shared understandings and mechanisms of communication. All of these efforts are best undertaken before an emergency or crisis.

We need to strengthen our nation's public-health infrastructure. This means enhancing our surveillance and epidemiologic capacity; our laboratory capacity to support surveillance efforts; and our communications systems to collect, analyze, and share data. A strong and robust public health system requires effective working partnerships with the medical care community. For a host of reasons over many years, the worlds of public health and medicine have existed too far apart, even though they share a common set of goals and the mission of promoting health and preventing disease. We need to build linkages and understanding.

We also need to make sure that the public health community works with medical providers to give them the kind of information they need to respond to infectious disease threats in the community, understand emerging disease trends, and implement appropriate prevention and control strategies. Improvements to health can be achieved through more effective daily working relationships and even through a crisis. In addition, we have to link with other partners beyond the public health and medical community, particularly law enforcement and intelligence. Through working together, we learn to share common understanding and language. Federal Bureau of Investigation surveillance is different from public health surveillance; yet, if we are going to be able to rapidly detect, diagnose, and control a bioterrorist event, we need to use both types of surveillance to inform our activities and ensure adequate preparedness.

Communication is vital. We must learn how to educate and communicate with policymakers. We should define policies to support our

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preparedness efforts, the true needs for new resources, and the places in which to invest.

Legal and regulatory issues dealing with quarantine laws and jurisdictional concerns, as well as with the availability or use of certain drugs or vaccines not licensed by the U.S. Food and Drug Administration for use in certain populations in an epidemic context, need to be addressed.

And lastly, we must address the challenge of informing the public and educating them about the reality of bioterrorism. We must develop the framework of understanding and support required to both put in place the systems to respond effectively in a crisis and to achieve a level of understanding that can form the foundation for sharing information and developing knowledge when a crisis occurs.

Hoaxes, a growing problem, offer an opportunity to examine our coordination and response. Thinking through the different types of hoaxes helps us develop protocols and strategies that lead to recognition of a true event.

Medical consequence management is an area to be explored. The conventional bomb—where something blows up, you come in, respond, take care of the injured, clean up, and then return, more or less, to life as it was before—is not going to be the case in a bioterrorist attack, particularly in a scenario with human-to-human transmission. Instead, cases will initially appear in a scattered, sporadic manner, but rapidly increasing and overwhelming the capacity of the health-care system and continuing in concentric circles of infection and disease. We cannot address consequence management in the way emergency plans traditionally have for earthquakes, fires, or bomb blasts. We need to build a system that brings together local, state, and national capacities in an ongoing way. We also must recognize the need to supplement our health-care delivery capacity with nonmedical support that may come in the form of police, National Guard, or possibly military support, both to assist in the provision of services and for crowd control and the maintenance of order. New systems of delivering care and treating patients will be needed. For example, how are we going to deliver off-site care? How are we going to ensure proper infection-control measures in that context and provide ancillary support services for medical care?

Another crucial aspect of effective medical consequence management requires access to necessary therapeutic products. We are in the process of creating a national stockpile of drugs and pharmaceutical products for civilian use. Given that a bioterrorist event is low probability and high consequence for any given locality, the federal government can step in and provide the leadership for creating and administering a national stockpile.

A related concern is the need to develop new tools for the medical management of bioterrorist threats. The research and development agenda needs to be addressed both through governmental efforts, including the National Institutes of Health, the Centers for Disease Control and Prevention, and the U.S. Army Medical Research Institute of Infectious Diseases, but also through private industry and other research institutions. Improved and more rapid diagnostic methods, new and better drugs for treatment or prophylaxis, and new vaccines, especially against anthrax and smallpox, are needed. In addition to biomedical research, further research into such diverse concerns as defining appropriate personal protective gear or decontamination procedures is fundamental to our overall preparedness for a bioterrorist attack.

The public health and medical community must look to the issue of prevention in terms of how to reduce access to dangerous pathogens. Are there strategies to prevent these often-frightening microbes from getting into the hands of those who might want to misuse them, and how can we reduce the likelihood that they will be misused? This means being concerned on an international level about such issues as the need to support the strengthening and enforcement of the Biological Weapons Convention. Finally, as a scientific community we should play a proactive role in scientific research. We need to shape policies against the nefarious use of biological agents, while safeguarding legitimate research. We need to ensure that research institutions and individual researchers keep track of the whereabouts of dangerous pathogens, handle them safely, and store them securely.

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