Bioterrorism Defense Priorities

Since September 11, 2001, U.S. defense strategies to counter bioterrorism have largely centered on smallpox. That concentration of effort has diverted attention and resources away from more basic general public health considerations that are even more vital to bioterror defense. Without the capacity to implement response plans and to treat cases that were unanticipated before the event—capacities that depend on a strong public health infrastructure—our present preparations are little more than window-dressing. Perhaps most disturbing is the limited usefulness of programs directed at defense against smallpox. Given the wide diversity of potential biological agents that might be used in an attack, it would seem prudent first to strengthen the public health system overall, a strategy that serves defense aims whatever biological agent might be employed. The lessons learned in the United States should be helpful to other nations that are vulnerable to bioterrorism and even more helpful to the global effort to manage emerging infections of all kinds.

Significant resources have been devoted in the United States to smallpox defense preparation, including stockpiling vaccine and the initial relatively unsuccessful effort to vaccinate response teams. U.S. funding to strengthen the public health system overall, by contrast, has been relatively modest. Federal block grants made available to cities and states, intended to build up the neglected public health system to prepare for possible bioterror, total only about $1 billion distributed among all 50 states. Consider: The American Hospital Association has indicated that hospitals alone need at least $11.3 billion to purchase the equipment necessary to respond to a bioterror attack; and a RAND study released in 2002 found that before September 11, 2001, few state and local public health agencies even had written plans or policies for bioterror response.

The heavy needs of basic public health infrastructure contrast sharply with the relatively modest funding that any state or locality’s share of the federal $1 billion represents. As a result, plans developed in accordance with requirements for the block grant program are certain to encounter an inability on the part of state and local public health agencies to implement those plans. A recent survey released by the National Association of Counties and the National Association of County and City Health Officials shows that few states or counties have the necessary resources to establish the capacity to respond to bioterrorism without significant federal assistance.

Funding priorities, however, have focused on more “glamorous” projects. In his January State of the Union address, President Bush asked for $6 billion to fund “Project BioShield,” which focuses on the development of new treatments and vaccines for potential bioterror agents. But this project can only be effective after we build the capacity of the public health infrastructure to use the resulting vaccines and treatments effectively. Project BioShield also assumes that we can predict the nature of specific agents that might be used in a bioterror attack, but bioweapons often employ modified strains of biological agents that are specifically designed to thwart traditional vaccines and treatments. That raises the possibility that the vaccines and treatments developed will be less effective against such modified agents. In that case, there would be even greater dependence on the strength of basic public health care: Whether we have or lack effective vaccines and treatments, we will need strong public health capacity to care for infected individuals.

Another project of the U.S. Homeland Security Department, dubbed the “BioWatch Initiative,” will cost approximately $1 million per station to retrofit 3000 to 4000 pollution-monitoring stations with sensors, and an additional $1 million annually in a number of cities where these sensors are located. High-tech sensors may encourage a public perception that important steps are being taken to protect against bioterrorism. However, terror attacks are likely to be launched in enclosed facilities rather than in the open air. Would sensors located on pollution-monitoring stations be effective in detecting such releases?

A more prudent approach would be to emphasize providing the staff and capacities necessary for the public health system to monitor for potential outbreaks. Funding to support basic public health infrastructure has significant collateral benefits beyond bioterror defense. Strengthening the Centers for Disease Control’s ability to monitor disease outbreaks, for example, benefits the nation’s health and safety even in the absence of a bioterror threat. Likewise, strengthening the capacity of hospitals and emergency services promises benefits for our nation’s ability to respond to the kinds of emergencies that are now regular events in this era of emergent and reemergent infectious diseases.

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