

DEVELOPING A NATIONAL BIOSURVEILLANCE PROGRAM

HOMELAND SECURITY PRESIDENTIAL DIRECTIVE 21 (HSPD-21) and other policies have underscored the strategic importance of developing and maintaining a national biosurveillance program in order to maintain situational awareness during catastrophic health events. The federal government has made considerable investments in deploying biosurveillance systems across the country, but it has done so without a clear overarching federal strategy for designing or testing these systems or a strategy for funding, staffing, or maintaining them. The absence of clear national biosurveillance objectives and implementation plans has contributed to several problems:

- The creation of hundreds of separate surveillance programs that serve a range of purposes, many of which are duplicative or have overlapping missions, and most of which are not interoperable.
- An inability for agencies or programs to assess or prioritize information from existing systems or to pursue the addition of new data streams. Agencies are struggling to figure out whether it is better to engage in a “more data, faster is better” approach or whether it would be more effective to pursue fewer, more meaningful data streams.
- A lack of understanding of the specific “mission space” and objectives of state and federal agencies that are involved in biosurveillance.

Recommendations

► **It is critical that the ongoing internal and external reviews of federal biosurveillance programs lead to a more systems-based approach to implementation and continuous improvement.**

Both the National Academy of Sciences (NAS) and the Centers for Disease Control and Prevention (CDC) have assembled advisory committees to review U.S. biosurveillance activities. The NAS review was mandated by Congress; the CDC Committee was mandated by HSPD-21.

U.S. biosurveillance strategy needs to define the missions, goals, and priorities of federal investments in biosur-

veillance activities, and the government must periodically assess the effectiveness of different biosurveillance activities and systems in serving these goals and priorities. Key elements of this assessment should be:

- Clear performance objectives for biosurveillance systems must be devised. There is no straightforward consensus on what specific information or activities are needed to detect and manage catastrophic public health events at state and federal levels, in part because the information required differs from one emergency to the next. Ways of judging the comparative effectiveness of different surveillance systems should also be developed.
- There is a need for a strategic plan to achieve some degree of interoperability among different surveillance systems or at least interpretive transparency of these different systems where needed.
- The government must create a prioritized approach (including budgetary needs) for building and maintaining surveillance systems over time.

One approach to assessing the effectiveness of existing surveillance systems and to helping identify what information will be most critical during mass casualty events would be to use rigorous and comprehensive after-action reports of past events and exercises. Reports from these events should be shared across agencies and state health departments. If events reveal gaps in existing biosurveillance capacity, federal agencies should work together to figure out how necessary information should be obtained to avoid developing duplicative programs.

► **The Office of Management and Budget should conduct a cross-agency analysis of federal budget outlays for biosurveillance programs to prioritize the funding of critical programs and to eliminate ineffective or redundant programs.**

To date, there have been no reliable analyses of how much the federal government has invested in biosurveillance nor has there been a comprehensive accounting of all the federal

programs that pertain to biosurveillance. Without such a review, it is difficult to assess whether critical programs are adequately funded or to eliminate ineffective or redundant activities. To that end, OMB should undertake a cross-agency review of biosurveillance programs in the federal government. The processes for establishing biosurveillance goals and priorities and for evaluating programs should be as open and objective as is feasible and consistent with national security.

► **As a central goal of its effort to improve health information technology across the nation, HHS should support the development of robust, interoperable linkages between public health and healthcare delivery institutions such as hospitals at the state and local levels. These connections should serve as the foundation of the national biosurveillance enterprise.**

State and local surveillance programs are the foundation for an integrated national biosurveillance system. The federal government's capacity to detect and maintain situational awareness during catastrophic events depends on the ability of state and local agencies (particularly health departments) to build and maintain robust and flexible linkages to the healthcare system. However, this bottom-up strategy is threatened by the variability in state and local financial resources. The significant state budget deficits being caused by the economic downturn are already making it difficult for agencies to maintain information systems and analytical staff.

The CDC public health emergency preparedness cooperative agreements have enabled state and local health departments to begin to develop basic biosurveillance capabilities. While these investments have been an important first step, the level of federal and state funding for biosurveillance appropriated to date is not commensurate with the strategic importance of these systems. As the nation builds a national framework for clinical electronic health records—the Health Information Exchange architecture—federal agencies should not lose the opportunity to develop critical connections between health care and public health. A portion of the federal funds being spent on the Health Information Exchange should be used to build and maintain digital connections between public health agencies and healthcare entities. To support these efforts, HHS must provide these funds on a long-term and continuous basis.

While continued federal funding is critical to building and sustaining a national biosurveillance enterprise, some

biosurveillance systems should be reevaluated. In the past few years, federal and state governments have used federal biosurveillance funds to develop environmental detection (such as BioWatch) and/or syndromic surveillance systems that are intended to provide an early warning of a catastrophic event. However, there are few rigorous assessments of the efficacy or cost-effectiveness of these types of systems. In particular, the extent to which these systems provide actionable data is not clear. There should be clear and objective evaluation of existing environmental detection and syndromic surveillance systems to determine if these systems warrant continued investment.

► **The federal government should invest in efforts to develop rapid, point-of-care diagnostic tests that can be used to quickly identify people who are ill and to help isolate contagious people from those who are well.**

Rapid access to accurate and reliable diagnostic data will be of the highest strategic importance in a catastrophic health event. Clinical laboratory data is very specific and reliable—much more so than syndromic data or physicians' clinical assessments. Technologies to develop rapid, reliable, and cheap diagnostic tests exist, but they have not been developed because of market failures. The Biomedical Research and Development Authority (BARDA) is authorized to develop and purchase the diagnostic tools that will be necessary to manage public health emergencies, but appropriations needed to pursue this priority have not been forthcoming.

► **The federal government, along with the states, should develop a cadre of highly skilled and competent analysts to build and maintain biosurveillance systems at the federal, state, and local levels.**

State budget deficits and layoffs threaten to exacerbate existing shortages in skilled personnel to manage critical public health programs. The federal government must make a sustained and committed effort to ensure that adequate funds are available to hire and retain competent personnel to run biosurveillance programs at all levels of government. To attract the highly skilled, highly sought-after technical experts who will be needed to manage biosurveillance systems, the federal government should consider offering tuition-for-service programs and short-term Intergovernmental Personnel Act assignments (IPAs).

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