

Roundtable on Public Health Preparedness in the 21st Century

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I. Introduction

The capacity to mitigate the consequences of a large-scale, naturally occurring epidemic or bioterrorist attack is a pressing national defense need. Since passage of the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, the US has achieved important, though limited, progress towards this goal. Viewed from the perspective of 2006, the aims and architecture of the 2002 Act still appear sound and quite comprehensive. But as the experience of the past four years has demonstrated the project of creating the institutional capabilities to care for the sick, protect the well and minimize economic and social disruption during lethal epidemics must overcome some fundamental obstacles.

This paper focuses on three fundamental aspects of epidemic preparedness:

- How to build a strong and competent public health workforce;
- How to create information systems and information exchange process that ensure decision-makers and the public have sufficient situational awareness to make informed decisions during public health emergencies, especially large-scale epidemics; and
- How to establish an ethos and institutional capacity that engages the American public as partners in the response to and recovery from public health emergencies.

II. Strengthening the Public Health Workforce

Background

Building a 21st century US public health system that is capable of managing potentially destabilizing epidemics cannot happen without a competent public health workforce. There are smart, committed people working their hearts out in public health agencies at the federal, state and local level. But there are too few of them, and in most instances, the agencies assigned to implement the 2002 Act lack the necessary skill mix, experience and authority. Efforts to hire more people have been frustrated by the small pool of qualified candidates, cumbersome state and federal hiring procedures, and non-competitive salaries, especially for state government positions.

The failure to achieve more significant progress towards public health preparedness in the past four years is largely due to inadequate program management – i.e. insufficient leadership; poor project design and execution, including inadequate

consultation and communication; implementation failures; and failure to assess progress and to redirect efforts based on such assessments. These shortcomings are largely the direct result of too few people, many with limited experience, trying to do a great deal under ferocious time pressures. Efforts to improve accountability for program results by demanding progress towards poorly conceived “metrics” will not fix this problem; it will merely further burden overtaxed officials.

The nation must make significant investments in building the public health workforce. This will require a long-term commitment to creating the educational opportunities, curricula and career paths needed to attract smart, committed people. We must take immediate steps to bring qualified health professionals into government service. And we must construct efficient organizational mechanisms to catalyze a continuous dialogue between policy makers at HHS and medical and public health practitioners in the field.

Recommendation

HHS Needs More Staff, More Robust Management Structure. The problem of agencies having too few people with appropriate skills and authority to achieve critical public health preparedness goals is highly apparent within HHS and CDC. After the terrorist attacks of 2001, HHS was tasked to take on a welter of new missions related to homeland security; the management structure and staffing of HHS has not kept pace with these assignments. HHS is larger in dollar terms than the Department of Defense – and yet HHS does not have a single undersecretary. Secretary Leavitt has noted that he has 27 direct reports – a situation he recognizes as “not at all an ideal organizational structure”.

Cabinet Secretaries should have broad discretion in how their agencies are organized, but I believe that Congress should approve at least one – or better, two or three -Undersecretary positions to HHS. This would provide the agency with increased senior managers capable of coordinating HHS’ vast programmatic span of control. In the realm of public health preparedness, an Undersecretary for Public Health (which could be combined with the present Assistant Secretary for Health or the position of Surgeon General) could better coordinate the varying HHS programs now spread among the Assistant Secretary for OPHEP, CDC, HRSA, NIH, AHRQ, and ONCHIT. In addition, an Undersecretary would be better able to represent HHS in the interagency process.

III. Build a Public Health Workforce with Necessary Educational Background and Project Management Skills

There is considerable evidence that there are too few people trained in public health practice to meet current needs of federal, state and local agencies. As long ago as 1999, the National Commission on National Security in the 21st Century (the so-called “Hart Rudman Report”) warned of a “crisis in competency” within the Federal government due to a generation-long failure to recruit promising young people into government service and the accelerating retirement of today’s senior civil servants. One study by an independent non-governmental organization estimated that half of federal employees now working on biodefense related issues will be eligible for retirement in the next 3 years. Moreover, biosecurity issues and management of destabilizing public health emergencies have not until recently been a focus of government efforts. Hence the workforce available to lead and manage biosecurity programs in particular, but homeland security issues generally has been quite small. This must change.

1. Long term – Create a program to provide tuition for students of medicine, public health and nursing in exchange for commitments to serve in government public health post. Past experience has shown that the most efficient and effective way for the nation to induce young people to study public health and related disciplines and to enlist them in critical government positions is to establish tuition pay-back programs. Students in medicine, nursing or public health would have their full or partial tuition paid by the government in exchange for a commitment to serve in public health positions at the local, state or federal agencies. Students who know they are going to serve in such jobs upon graduation will act to drive schools of public health in particular to offer relevant training in public health practice.
2. Mid-term – Double the current size of the CDC’s Epidemic Intelligence Service, and ensure that at least two

thirds of all EIS assignments are to state and local health departments. The CDC's Epidemic Intelligence Service (EIS) was established during the Korean War as an early warning system against biological warfare. It has now expanded into surveillance and response for all types of epidemics including chronic diseases, but provides hands-on postgraduate training in epidemiology and public health practice. Approximately 70 health professionals per year enter this two year program, including 15 officers from countries other than the US. Importantly, 70% of EIS officers continue in public health careers. Currently however, only 25% of incoming EIS officers are assigned directly to state and local health agencies; the great majority work at CDC headquarters in Atlanta on a wide range of issues. [ref: accessed at <http://www.cdc.gov/eis/applyeis/applyeis.htm>, 3/24/06].

3. Near term – Create a special senior EIS fellows program that would provide up to 3 year assignments under IPA agreements for experienced, talented individuals from academia and the private sector who could serve as mentors and provide a stimulus for documentation of experiences in epidemic preparedness program building. Such a program would create an opportunity for experienced medical and public health professionals and seasoned program managers to work in government posts.
4. Provide funds to state and local public health practitioners to write up and share experiences with epidemic preparedness program building. Such officials are currently too busy to document what works and what does not; consequently many localities are repeating mistakes made elsewhere and failing to benefit from others' successes. It would be useful to have both publications and a CDC website that could provide detailed information about program design and implementation. Expanding the annual meeting of bioterrorism directors to include program managers and frank exchange would also be most useful.
5. Reconstitute the Secretary's Advisory Council on Public Health Preparedness. This Council provided the Secretary with advice from a wide spectrum of experts with interest in different aspects of biopreparedness and organized the successful HHS effort to refine the use of disease modeling in epidemic planning. The Council was formed in accordance with the Federal Advisory Committee Act (FACA) and as such operated in full public view. It is possible to create working groups or subcommittees that report to FACA committees, thereby ensuring transparency, but such subcommittees, which are themselves not subject to FACA, can be rapidly assembled to respond to issues as the need arises. The working groups could not make decisions themselves but reported back to the Committee for final resolution and recommendations, thereby ensuring transparency. This mechanism could provide an efficient way for HHS to link to outside expertise in a variety of disciplines and across panoply of topics such as biosurveillance, hospital preparedness, countermeasure selection, etc.

IV. Improving Situational Awareness During Public Health Emergencies

Background

Maintaining situational awareness during public health emergencies – i.e. an accurate, real-time understanding of what is happening on the ground and what options for intervention are feasible – is a critical function of public health. For example, during an epidemic, public health officials must be able to determine the scope of a disease outbreak, how many are sick, who and where they are, who is at risk, whether the situation is worsening or improving, what interventions to care for the sick or protect the well are viable, etc., as well maintain real-time logistical knowledge regarding available resources, their location, etc.

The 2002 Act implicitly recognized the importance of situational awareness by mandating the creation of an array of surveillance programs, including syndromic surveillance, aimed at disease detection, sharing of information among public health, the medical community and emergency response agencies, and communication with the public. A large amount of money and effort has been lavished on various electronic “surveillance systems” to unknown effect. Most such systems have focused on initial detection of disease outbreaks or bioterrorist attacks, not on collection or analyses of information essential epidemic management.

Recommendations

1. HHS must develop a strategy for ensuring situational awareness. The Department of Health and Human Services (HHS) should establish a national strategy for ensuring situational awareness during public health emergencies, including epidemics. Such a strategy should include explicit goals and performance specifications to ensure rapid integration of data from different localities, including government health agencies, hospitals and other large health care delivery organizations.
2. HHS should explicitly assign responsibility for designing and executing such a strategy. HHS should establish an Office of Public Health Information Technologies within either Office of Public Health Emergency Preparedness (OPHEP) or Office of the National Coordinator for Health Information Technology (ONCHIT) to oversee the design and implementation of disease surveillance systems and other public health data flows and to establish performance expectations for such systems and share lessons learned. Given that hundreds of millions of dollars have already been spent on such systems, and even larger expenditures are planned, HHS should establish a single office with clear accountability for ensuring situational awareness, perhaps within the ONCHIT.
3. HHS should explicitly and consistently seek input and feedback from users (federal, state and local health agencies, health care institutions) of electronic surveillance systems and should consult and employ appropriate technical experts (bioinformatics and information technology scientists) in system design and testing. Because these systems are so complex and costly, and because their success depends critically on local users and data inputs (e.g. hospitals) a national advisory body, perhaps reporting to the Secretary's Council on Public Health Preparedness, should be formed to provide counsel on strategic direction, user needs and means of assessing these systems.
4. Regularly monitor surveillance systems' performance. All surveillance systems maintained or funded by the federal government should be subject to independent assessment by objective evaluators. State-based systems should be periodically assessed for efficacy and cost-effectiveness as a condition of federal support.
5. Urgently establish mandatory, minimum electronic communication links between hospitals and local public health agencies. At minimum, and as a matter of great urgency, public health agencies at the local and state level and hospitals within respective regions should collaborate to establish robust electronic communications that include disease reporting, laboratory reports and emergency department surveillance data as well as logistical information related to available bed capacity, ventilator supply, etc. Creating and maintaining such linkages between public health agencies and hospitals should be a condition of federal grant awards related to any aspect of homeland security. Most of the fundamental information pertinent to epidemic management originates in hospitals or other large health care delivery organizations. Few health agencies currently have electronic links to hospital in a region. The creation of a truly efficient information flows between public health and health care entities must await the development of a secure, nationally integrated electronic health record such as now exists in France, Britain, Singapore, Hong Kong, Taiwan and elsewhere.
6. Obtain independent evaluation of Biosense goals and cost-effectiveness. The CDC Biosense Program, which now connects 30 hospitals in 10 cities directly to CDC, acknowledges the importance of the exchange of information between public health and hospitals. Before additional funds are invested in this stopgap system (there are plans to connect to 100 hospitals nationwide), the specific goals of Biosense need to be spelled out and examined in light of the actual operational capabilities. Connecting more hospitals to more state and local health agencies – i.e. linking the local response network which will actually respond to emergencies – may be a better use of funds in the near term.
7. Establish redundant communication links between hospitals and public health authorities. Hospitals should have redundant communication systems that provide the capability to communicate with other regional hospitals and with public health authorities via non-electronic means. The importance of such systems was dramatically demonstrated during Hurricane Katrina. Competitive grants should be established to demonstrate innovative approaches to the design and implementation of communication links between hospitals and

public health.

V. Encouraging and Enabling Public Engagement in Public Health Disaster Preparedness, Response, and Recovery

Background

Recent disasters such as the Asian Tsunami and Hurricanes Katrina and Rita have made clear that in large-scale disasters community members are a mainstay of immediate response and are critical to community recovery and resilience. HHS should translate this well-documented reality into practice and establish a strategy for and administrative focal point for Citizen Engagement in Public Health Preparedness. HHS should collaborate with DHS to better coordinate and emphasize the efficient recruitment and coordination of volunteers for disaster preparedness and response.

Recommendations

1. Create an Office of Citizen Engagement within the OPHEP of HHS. The Director of this office must have experience in disaster volunteer management, community organizing, and/or health risk and crisis communications. Functions of the Office of Citizen Engagement will include, but not necessarily be limited to:
 - Develop a national strategy for, and evidence-based policies regarding the integration of individual citizens and community-based organizations in preparing for, responding to, and recovering from a public health emergency. Programmatic options that would contribute to an informed and involved citizenry could include but not be limited to pre-event public education and outreach, influential public participation in emergency planning, volunteer training and mobilization, and health risk and crisis communications;
 - Serve as inter-agency coordinator for all federal health agency programs that bear upon citizen engagement in health emergencies, with special attention upon integrating the diverse efforts at recruiting, registering, training, credentialing, and mobilizing volunteers for public health emergencies.
 - Act as liaison between HHS, DHS, the American Red Cross and other disaster-interested NGOs (e.g., Voluntary Organizations Active in Disaster), broadening the scope of work of organizations that have a disaster preparedness, response and recovery mission to include large-scale outbreaks of infectious disease and other health emergencies;
 - Provide guidance to DHS in equipping State, county, local, and Tribal Citizen Corps Councils to play a larger role in community preparations for a public health emergency.
 - Serve as clearinghouse for best practices and principles regarding citizen engagement in public health emergencies and “lessons learned” from demonstration projects administered by the Office.
 - Develop and offer – in collaboration with CDC, FEMA, and other relevant agencies – a training curriculum for emergency response and health officials in best principles and practices of public involvement
2. The Office of Citizen Engagement – in consultation and collaboration with DHS – will establish and administer competitive state and local grants for demonstration projects that provide “proof of principle” for active participation of citizens in public health preparedness. Grants will require joint application from health departments, local and regional hospitals, emergency management offices, and Citizen Corps Councils. Grant recipients must devise a communications and outreach strategy for publicizing, and accepting public commentary upon, the innovative activities supported by this federal program. Initially, HHS should fund pilot projects in 10 geographically and demographically diverse locales, funded \$1 million annually for 3 years.

Priority areas include:

- Deliberative processes that solicit the public's input into the ethical and rational distribution of scarce vaccines, antibiotics, and other life-saving medical resources;
- Innovative partnerships between health agencies, hospitals, community-based organizations and businesses to handle the complex logistics of prompt, mass prophylaxis among large, diverse populations including hard-to-reach individuals and groups;
- Local and regional volunteer management systems that mobilize both medically and non-medically trained individuals to enhance the response capacity of medical, public health, mental health, and social service institutions.