

BREATHING EASIER?

In response to the anthrax attacks of fall 2001, the federal government increased public health funding for state and local governments to enhance preparedness for such emergencies. Thanks to the generous support of the Robert Wood Johnson Foundation, The Century Foundation embarked on a Public Health Preparedness and Bioterrorism Project examining how states and cities are using these new federal resources.

This effort is part of The Century Foundation's Homeland Security Project, a broader study aimed at informing the public and the policymaking community about the complex challenges related to preventing and responding to domestic terrorism. More information on the Homeland Security Project is available at www.tcf.org and www.homelandsec.org.

This report was prepared by Leif Wellington Haase, Century Foundation health care fellow and executive director of the foundation's Public Health Preparedness and Bioterrorism Project.

The author would like to thank Iain Ware, Anna Vinnik, Cari Reiner, Matthew Lippert, and Emily Parise for their assistance with the preparation of this report.

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REPORT OF THE CENTURY FOUNDATION
WORKING GROUP ON BIOTERRORISM PREPAREDNESS

THE CENTURY FOUNDATION PRESS ♦ NEW YORK

The Century Foundation sponsors and supervises timely analyses of economic policy, foreign affairs, and domestic political issues. Not-for-profit and nonpartisan, it was founded in 1919 and endowed by Edward A. Filene.

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Cover design and illustration: Claude Goodwin

MEMBERS OF THE WORKING GROUP

GEORGES C. BENJAMIN, M.D.

Executive Director, American Public Health Association

NEAL L. COHEN, M.D.

*Senior Vice President, AMDeC, and Executive Director,
AMDeC Center on Biodefense*

ARTHUR DAVIDSON, M.D.

*Director, Denver Center for Public Health Preparedness,
Denver Public Health Department*

ELIN A. GURSKY, SC.D.

*Principal Deputy for Biodefense, National Strategies Support
Directorate, ANSER*

NORMA GYLE, M.D.

Deputy Commissioner of Public Health, State of Connecticut

MARGARET HAMBURG, M.D.

Vice President, Nuclear Threat Initiative

GEORGE E. HARDY, JR., M.D.

*Executive Director, Association of State and Territorial Health
Officials (ASTHO)*

SHELLEY A. HEARNE, DR.P.H.

Executive Director, Trust for America's Health

BEN KELLEY

Board Member, Public Health Advocacy Institute

Affiliations are given for purposes of identification only.

PATRICK M. LIBBEY

Executive Director, National Association of County and City Health Officials (NACCHO)

KATHLEEN C. MILNE

Principal, Milne & Associates, L.L.C.

THOMAS L. MILNE

Principal, Milne & Associates, L.L.C.

STEPHEN S. MORSE

Director, Center for Public Health Preparedness, Columbia University, Mailman School of Public Health

IRWIN REDLENER, M.D.

Associate Dean and Director, The National Center for Disaster Preparedness, Columbia University, Mailman School of Public Health

EILEEN SALINSKY

Senior Research Associate, National Health Policy Forum

HARVEY I. SLOANE, M.D.

Director of Public Health, Eurasian Medical Education

BERNARD J. TURNOCK, M.D.

Clinical Professor of Community Health Services and Director, Center for Public Health Practice, School of Public Health, University of Illinois at Chicago

ISAAC B. WEISFUSE, M.D.

Deputy Commissioner, Department of Health & Mental Hygiene, The City of New York

The anthrax mailings that followed the September 11 terrorist attacks in 2001 were a watershed for America's public health system, which is dedicated to protecting citizens from disease, infection, and environmental contamination. The distribution of anthrax-filled envelopes through the postal system demonstrated shortcomings in the abilities of the Centers for Disease Control and Prevention and state and local health agencies to test samples quickly, contact hospitals and physicians rapidly, and communicate effectively with the broader public.¹ Though the death toll from the attacks was small, the disruption of daily routines was immense. That bioterrorism could have an uncertain, far-reaching, and potentially devastating impact became readily apparent.² And it was equally clear that the nation's public health network was not yet up to the challenge.

Even before the anthrax attacks, most informed observers agreed that the public health system had severe shortcomings. Public health leaders themselves had given their efforts a failing grade.³ Decades of federal and state cutbacks, combined with public inattention, led to dangerously low levels of funding, expertise, and capacity. The Institute of Medicine described a system hampered by "outdated and vulnerable technologies, lack of real-time surveillance and epidemiological systems, ineffective and fragmented communications networks, [and] incomplete domestic preparedness and emergency response capabilities." Some 80 percent of local public health departments lacked the information systems to communicate immediately with the central public health departments in their states, or with hospitals or medical practices. State health agencies employed fewer epidemiologists—specialists in infectious disease investigations—in 2002 than they had a decade earlier.

After the anthrax attacks, Congress quickly enacted the Public Health Security and Bioterrorism Preparedness and Response Act, which President Bush signed in June 2002. The legislation authorized

\$4.3 billion to develop new vaccines and other drugs, improve hospital capacity, and strengthen state and local public health departments, marking an unprecedented influx of money into the nation's public health system. The nearly \$1 billion slated for state and local governments in 2002 was fourteen times greater than the previous year's biodefense spending; it represented the single largest investment in public health infrastructure since World War II.⁴ Additional appropriations of close to \$1.5 billion have been made for the 2004 and 2005 fiscal years. Total spending on civilian biodefense—including scientific research, vaccine production, and food safety initiatives—is about \$14.5 billion through fiscal year 2004, with an additional \$7.6 billion requested in the president's fiscal year 2005 budget.⁵

While everyone agrees that the additional federal funding is essential, a number of significant questions have been raised: Are states, cities, and counties using the money for the purposes for which it was intended, at a reasonable speed, and with effective results? How is the stepped-up funding affecting the overall mission and structure of public health in the United States? Will the new resources make it easier to perform the routine tasks of public health—such as disease surveillance and response—or will focusing on bioterrorism detract from those goals?

To help answer these questions, The Century Foundation, with the support of The Robert Wood Johnson Foundation, commissioned two reports and convened a working group of public health experts and state and local public health officials. The reports and the working group concluded that the new federal funding has indeed resulted in considerable improvements to the U.S. public health system, which comprises a fragmented and diverse collection of departments and agencies at various levels of government. But the working group also found that substantial vulnerabilities remain. Without clearer definitions of what constitutes preparedness and standards for achieving it, the infusion of funds may not succeed in enabling the public health system to respond effectively to a future bioterrorist attack. Indeed, the influx of new money may actually prove counterproductive. If it reinforces existing divisions between state, federal, and local health agencies or if it builds discrete capacities helpful only for bioterrorism-related tasks, to the detriment of broader public health goals, the United States will be less, not more, prepared. The recommendations set out below, and the rationale that follows, suggest how bioterrorism funding can strengthen the fabric of public health, rather than stretch it too thin.

RECOMMENDATIONS

1. *The government should define public health preparedness more clearly and develop minimum national standards.*
2. *Federal and state public health officials, in cooperation with experts in public health, should define what local public health capabilities should be.*
3. *Laws governing how responses to public health emergencies and public health investigations are conducted must be modernized.*
4. *The public health workforce needs to be enlarged and its skills upgraded.*
5. *To sustain improvements in the public health system, the flow of federal and state funding must continue without interruption.*
6. *A balance must be struck between preparing for a biological attack and maintaining and expanding other vital functions of the public health system.*

BACKGROUND

The federal bioterrorism funds have been disbursed through the Centers for Disease Control and Prevention (CDC) and the Health Resources Services Administration (HRSA), agencies within the Department of Health and Human Services (DHHS). States and several large cities (New York, Chicago, Los Angeles, and Washington, D.C.) are spending this money along the lines laid out in a cooperative agreement with the federal government. Over the past year, The Century Foundation published two reports—one a national survey of state and local health officials, the other an in-depth study of a single state, Illinois—analyzing the impact of that money on the public health system. Elin Gursky, the author of the national survey, reported that “new skills, equipment, and partnerships have been wrought from new federal investments in the public health system.” These upgrades included computers, laboratory improvements, and better coordination between local public health departments and the CDC for sharing vaccines and information. For instance, 89 percent of the U.S. population is now served by local health departments that are

connected to the CDC's emergency communications system, up from 66 percent just three years ago.⁶ In the past, public health officials reported that lack of contact with "first responders," such as firemen, policemen, and medical personnel dealing directly with patients affected by a health emergency, represented a significant obstacle to preparedness. But public health officials interviewed for The Century Foundation's survey now say they are "developing strong relationships with hospitals, law enforcement, fire departments, and traditional emergency responders."

Other reports confirm that some progress has been made. According to researchers using data from the Center for Studying Health System Change, which tracks the health care systems of twelve metropolitan areas on a continuous basis, "All twelve sites have made noteworthy progress in at least some [bioterrorism] focus areas."⁷ The Trust for America's Health, a nonprofit Washington-based health organization, found that 70 percent of states scored in the middle range on a variety of indicators of preparedness. These include whether states had spent or obligated most of their funds, and whether they had increased or maintained their levels of funding for public health services as a whole.

In April 2004, the U.S. General Accounting Office stated, "Although states have further developed many important aspects of public health preparedness, since April 2003, no state is fully prepared to respond to a major public health threat. States have improved their disease surveillance systems, laboratory capacity, communication capacity, and workforce needed to respond to public health threats, but gaps in each remain. Moreover, regional planning between states is lacking, and many states lack surge capacity—the capacity to evaluate, diagnose, and treat the large numbers of patients that would present during a public health emergency."⁸

BUILDING ON EARLY PROGRESS: RECOMMENDATIONS OF THE WORKING GROUP

The Century Foundation's working group believes that much more needs to be done to strengthen the nation's ability to respond to a public health crisis involving bioterrorism. Specifically:

1. *The government should define public health preparedness more clearly and develop minimum national standards.* In September 2002, the American Public Health Association regretted the lack of “a baseline set of performance goals and measures upon which to assess and improve preparedness. Without such national outcome measures in place to ensure that the states and localities use federal money for the purpose for which it is intended, we risk a divergence of priorities between the federal, state, and local governments. This may result in state and local governments supplanting their own previous levels of commitment in these areas with new federal resources.”⁹

Unfortunately, despite the infusion of federal funds, this absence of a baseline set of goals and minimum standards still holds true. Without such defined goals and standards, there is no assurance that the federal money is well spent and a basic level of preparedness for all communities achieved. Various public health officials and experts who were members of The Century Foundation’s working group commented on “the terrible diffusion or dispersal of responsibility for setting standards”; “a real lack of standards and leadership coming from the ‘feds’”; “the need for accountability and consistent standards”; and “the need to be going far more directly into setting standards at a national level.”

Representatives of the National Health Policy Forum, who conducted an intensive site visit and interviews of public health and medical personnel in the Pittsburgh area, found similar shortcomings in planning and organization. “In the absence of a national strategy for preparedness and some gaps in state-level guidance and direction, preparedness goals are emanating from local jurisdictions and individual organizations in a bottom-up fashion. Participants expressed concerns that these goals are often narrowly defined and bound by the idiosyncratic nature, priorities, politics, and personalities of particular communities. This bottom-up approach has allowed for creativity but has also led to a fragmentation and duplication of efforts.”¹⁰

The cooperative agreement between the CDC and the states leads in the direction of setting performance measures, but it falls considerably short of this goal. Under the agreement’s terms, states undertake public health initiatives with CDC support in seven major “focus areas,” including preparedness planning and readiness assessment, surveillance and epidemiology capacity, laboratory capacity, communication technology, communicating with the public, and education and training for public health and emergency workers. HRSA, another

agency within the U.S. Department of Health and Human Services, supports parallel activities in the area of hospital preparedness.

Within each focus area, CDC has identified “critical capacities” and “critical benchmarks” for states. The term “capacities” refers to “the core expertise and infrastructure to enable a public health system to prepare for and respond to bioterrorism, other infectious disease outbreaks, and other public health threats and emergencies” while “benchmarks” are “those recipient activities that should be given priority.” Examples of critical capacities are having a comprehensive preparedness and response plan, building adequate laboratory capacity, and ensuring the capability to communicate between public health departments and law enforcement agencies. A typical critical benchmark is the development of a statewide response plan. The agency describes the critical benchmarks as “milestones on the road to public health preparedness. Although, by definition, attaining any particular benchmark does not guarantee preparedness, failure to achieve any one of them is a near-certain indicator that the jurisdiction is inadequately prepared.”¹¹

As noted, the cooperative agreement between CDC and the states has been immensely helpful to building public health capacities. But states are given considerable leeway and discretion in deciding which gaps to tackle, while the agency sets no priorities among the different focus areas. Even if states report widespread progress in establishing, say, communication links and statewide response plans, there is no certainty that local health departments are up to par. The agreement requires evidence of consensus over spending priorities between states and local health departments, but the success of this intended cooperation remains to be seen.¹² The CDC’s oversight, moreover, lacks teeth and is essentially hortatory in nature. Failing to reach the critical benchmarks for fiscal year 2002, for instance, the agency notes, may result in some funds being held back in the 2005 fiscal year. The agency’s long-range strategic plan for terrorism preparedness combines relatively vague strategic objectives (“timely, accurate, and coordinated communications”; “achieving shared goals through partnerships”) with immensely (and probably overly) specific directives.¹³

Such an approach may have made good sense for launching the preparedness initiative, when getting the program under way quickly was urgent and states were at very different levels in terms of preparedness, but it is inadequate to the future, either for demonstrating genuine preparedness or for making a claim on limited domestic security funds.

PROMISING MODELS?

Who would develop these measures and standards, and what would they look like? The working group agreed that the federal government would promulgate, disseminate, and enforce these standards, but they would be developed in consultation with the public health community at the state, local, and federal levels. In the process, the responsibilities of each level of government would be clarified.

Promising initiatives are under way to develop performance standards that would combine federal oversight with local input. Researchers at the RAND Corporation, to take one important example, found “no existing, agreed upon public health performance standards.” Using existing checklists and recommendations developed by government agencies and private organizations, they developed an interim set of measures and created a tabletop exercise that simulated many of the issues public health officials would face during a bioterrorist attack. The researchers then enlisted seven California public health jurisdictions to take part in this exercise for a daylong session. Through this collaboration, the participants identified numerous gaps in the system and reached substantial consensus on baseline needs, including the imperative for automated disease reporting systems.¹⁴

Several efforts to develop public health standards and measures are being supported by the CDC. By March 2004, Project Health Ready, cosponsored by the National Association of County and City Health Officials, Columbia University, and the CDC, had certified as “ready” eleven local public health departments based on their fulfillment of several criteria: putting an emergency response plan in place, having trained staff members, and demonstrating readiness through drills and simulations. A second round of sites began to be reviewed in summer 2004, with the aim of creating a standard process for local departments to achieve certification.¹⁵

Based on site visits to eight metropolitan areas, the CDC has developed detailed performance criteria for round-the-clock disease reporting, aimed at early detection of a bioterror attack. These criteria,

Continued

based on the “most promising practices and needs” observed by CDC staff in the field, are specific and unambiguous. They require, for example, that “all health departments should have the ability to receive a report 24/7 via telephone communication with a trained public health professional who is able to handle up to 80% of incoming queries.”¹⁶ Observation of best practices, reflected in such criteria, could form the basis for performance standards.

Strategic planning exercises, drills, and training will play an important role in exposing gaps in preparation and developing performance standards, especially when such drills involve multiple responders and jurisdictions.¹⁷ Public health officials have indicated repeatedly their desire to conduct more training and drills, tempered only by limited resources. The most comprehensive terrorism response exercise, TOPOFF 2, took place in May 2003 in two metropolitan areas, Chicago and Seattle. In Chicago, where public health departments and sixty-four hospitals took part in the exercise, officials simulated the release of pneumonic plague in several locations. A major finding, according to the publicly available summary of the exercise, was “the lack of a robust and efficient emergency communications infrastructure.” Calls and faxes overloaded some of the systems, forcing medical workers, in one case, to turn to ham radios to make contact with their peers.¹⁸

The Department of Homeland Security also is getting involved in this process. With input from state and city governments, it reports that “a biological response annex is being drafted as part of our National Response Plan (NRP). We are catalyzing the development of state and local plans that are consistent with the NRP and ensure a seamless, coordinated effort.”¹⁹

2. Federal and state public health officials, in cooperation with experts in public health, should define what local public health capabilities should be.* Performance standards will differ between large metropolitan public health systems and small local public health departments. Preparedness obviously means something different for New York City than for a small rural community in North Dakota. A principal obstacle to setting performance standards for public

*See Comment by George E. Hardy, Jr., and Patrick M. Libbey on page 19.

health preparedness is the variability within the existing public health system. Public health in the United States is a highly localized activity. Of some three thousand local health departments, two-thirds serve populations of less than fifty thousand people.²⁰ Smaller departments are simply unable to implement many precautions that may protect the health of their citizens, against either naturally occurring or deliberately spread disease. Even among counties of similar size, the lack of agreed-upon standards means that the state of public health protections differs greatly. The RAND researchers, for example, found “widespread variation among local health jurisdictions with respect to their ability to respond to infectious disease outbreaks and other public health threats. . . . California residents do not enjoy an equal level of protection against a wide array of public health threats, even after accounting for real or perceived differences in health risks faced by residents of different locales.”²¹

Without prior consensus on what is a reasonable expectation for public health system capabilities in communities of different sizes, setting and enforcing federally mandated performance standards is problematic. Bioterrorism funding represents an opportunity, and an urgent need, to define what a basic local public health presence must consist of. To be sure, any efforts to standardize and upgrade local public health capabilities run head-on into fundamental issues of federalism: To what extent should federal standards limit local autonomy in setting the bar for public health spending? While members of The Century Foundation’s working group expressed different opinions about how strongly local priorities should weigh in the distribution of funds, they agreed that establishing consistent, though not necessarily uniform, standards is critical.²²

Absent common standards, resolving the dilemmas associated with disbursing bioterrorism funding becomes much more difficult. Consider the question of whether these funds, and federal homeland security dollars more generally, should be distributed on a “targeted” or “fair-share” basis—concentrated in areas where the largest threat appears to exist or distributed through a formula based on population or other criteria.²³ With standards in place, making distinctions in accordance with a “targeted” approach would be more feasible, though politically fraught. Without them, it would be arbitrary.

The working group agreed that moving toward making public health a regional responsibility was a promising step for combining local autonomy and knowledge with the benefits of scale. As one member noted, “We need a plan for how we’re going to address a set

of critical issues, on a regional basis.” The federal Agency for Healthcare Research and Quality found that regionalization in public health is important for augmenting local response capacities, which quickly can be overwhelmed in disasters. Regional backup services could include specialized emergency response teams, such as members of the CDC’s Epidemic Intelligence Services, and surge capacity for laboratory procedures and hospital beds. The report cautioned, however, that “few evaluations [exist] of whether regionalization has benefited a particular response organization or task.”²⁴ Though some places have made headway, developing a regional response plan is one of the CDC’s critical benchmarks that has been met by few states.²⁵

Including hospitals within regional plans is vital since hospitals usually serve a regional population. Many hospitals would have to cope with casualties that would likely overwhelm any local capacity, and many cases would probably require specialized treatment. As one expert puts it, “Hospital preparedness must be part of a regional approach to health systems and general preparedness across agency, jurisdictional, and corporate boundaries. Hospitals are part of a greater whole, but each hospital must also have a degree of self-sufficiency to enable independent operations should regional assistance be unavailable.”²⁶ If this is true for hospitals, the same can be said for public health departments.

3. Laws governing how responses to public health emergencies and public health investigations are conducted must be modernized.

Many state public health laws date from the early twentieth century or before and would be ill suited to the management of a bioterrorist attack. The Model Health Emergency State Powers Act, a draft for proposed state legislation, is one effort to update these laws in accordance with jurisprudential traditions recognizing the authority of states to take extraordinary measures in order to contain infectious diseases. As of July 2004, thirty-three states and Washington, D.C., had passed bills or resolutions based in whole or in part on the Model Act.

The Model Act would permit public health officials, following a gubernatorial declaration of a state of emergency, to close, decontaminate, or procure facilities and materials; to require that people submit to medical examinations; to waive licensing requirements for health professionals and require them to assist in vaccinations, testing, and examinations; to use and appropriate private property; to quarantine

individuals; and to charge noncompliant persons with misdemeanors. All of these powers are designed to permit the rapid containment of an outbreak without bureaucratic restraints.

However, the Model Act has confronted two main sets of criticisms. The first of these, from civil libertarians, notes that it vests a great deal of authority in the executive branch to interfere with private property and individuals' freedom of movement (and even, arguably, bodily integrity) with little to no opportunity for individual redress or outside oversight. The second major criticism, lodged mostly by public health experts, is that the Model Act's very specificity undermines its utility in a real emergency, which may require a different kind of response than the one it foresees.

Several states have implemented legislation that incorporates precautions against these potential abuses. The Delaware Emergency Health Powers Act, which took effect in July 2002, incorporates many of the provisions of the Model Act, while strengthening the due process afforded to quarantined individuals. Under the Model Act, a person may be isolated or quarantined for up to ten days without a chance to be heard by a judge. In Delaware, public health authorities must petition a court within twenty-four hours of isolating or quarantining a person, and that person must be heard within seventy-two hours of the filing of the petition. Delaware's version of the Model Act also adds a section protecting the privacy of personal health information. Tennessee, like a number of states, has proceeded more cautiously. In May 2002, the governor signed a bill requiring that the Model Act be studied for a period of time in order to discover if any amendments may be necessary.

4. *The public health workforce needs to be enlarged and its skills upgraded.* During the anthrax attacks, perhaps for the first time, public health officials were perceived as essential emergency responders, along with policemen, firefighters, paramedics, and federal law enforcement officers. However, this workforce is aging and retiring. Qualified replacements are hard to find. Unless the depletion of the public health corps is reversed, the response to a future bioterrorist attack will be weakened, perhaps imperiled. As Mary Selecky, the Washington secretary of state, told a congressional hearing, "The greatest obstacle in our efforts to combat SARS and future threats like this is the serious work force shortage facing health agencies at the local, state, and federal levels, both public and private."²⁷

A 2003 survey of the public health workforce undertaken by the Association of State and Territorial Health Officials (ASTHO), released in June 2004, suggests the dimensions of this problem. The average age of the public health workforce is nearly forty-seven, compared to forty-four for all state employees, and more than a quarter of this group is eligible for retirement by 2006. Thanks largely to low salaries and poor prospects for advancement, the annual turnover (in the twenty-eight states that answered the survey question) averaged 14 percent annually. The training of many employees is substandard. For instance, 42 percent of state-employed epidemiologists, specialists in disease investigation, lacked formal academic training in their discipline.²⁸

One member of The Century Foundation's working group, a public health official in a large metropolitan department, summarized concerns about the quality of the existing workforce: "The vast majority of our workforce are not Masters, they're not RNs, and not PhDs: they are people with BAs. It's a big group. They are scandalously underpaid. You're not going to attract good BAs with that kind of salary. They don't have any real track that offers any kind of career advancement. The reality is, if you're really any good, you quickly figure out you've got to move on to something, some other business essentially."

The group discussed numerous ways to avert these shortages and to improve the caliber of the workforce, noting that few if any resources exist to support students and mid-career workers interested in pursuing public health as a calling. They proposed new funding directed at upgrading the skills of the existing workforce. For example, schools of public health could offer accelerated programs that include a curriculum in bioterrorism and emergency training, and certification and retraining programs for existing workers. The overall intent, assuming funding could be mustered, would be to make public health careers more attractive through higher salaries and various routes to entry, combined with a considerable increase in opportunities for professional development.²⁹

5. To sustain improvements in the public health system, the flow of federal and state funding must continue without interruption. The federal government needs to maintain a high level of public health funding under its agreement with the states. The investment in personnel, communication and surveillance systems, and laboratory

upgrades will be undermined if support is gradually withdrawn as these resources are developed. Given the persistent federal underinvestment in public health in prior years, spending must remain high for several years, though not necessarily at the level of the initial federal grants.

Either winding down or redirecting the current flow of federal funds to public health would be premature. In June 2004, HHS proposed shifting about \$55 million from the state 2004 fiscal year preparedness grants to fund a “Cities Readiness Initiative Pilot Program,” under which cities would receive direct financial assistance toward receiving and dispensing medicine and medical supplies and building a network of biological sensors. While these are sensible goals, withdrawing the funds from the state grants would set a bad precedent at the very least. Given that each state would lose roughly \$1 million that it would have used toward other initiatives, the cutbacks also may hamper ongoing state preparedness efforts.³⁰

The largest danger to continuity of funding is “supplantation,” the substitution by states of the large infusion of federal dollars for state public health spending. Such budgetary shifts would have been especially tempting over the past several years, when many states faced their worst fiscal crises since World War II. The terms of the federal agreement expressly prohibit such shifting of funds. However, some de facto supplantation may have occurred. For instance, in Connecticut, the state proposed cutting \$2.3 million in state funding for local public health departments—the same amount that was pledged to these departments under federal bioterrorism grants.³¹ Residents of Boston and Seattle, cities that are part of a continuous health tracking survey, “expressed concern that proposed [public health] budget cuts would impair local health department activities such as tuberculosis and West Nile virus prevention, cancer screening, and childhood immunization.” In King County, which includes Seattle, per capita public health spending had dropped in 2003 from six years earlier.³²

Although the worst of the fiscal crises facing many states seems to be subsiding as of late 2004, the temptation for shifting state dollars away from public health, either with or without the inducement of federal dollars to replace them, remains.³³ For this reason, as Shelley Hearne, director of the Trust for America’s Health, testified before Congress, “CDC must be required to track state and local funding and expenditures on critical public health functions, particularly those involving federal support.”³⁴

6. A balance must be struck between preparing for a biological attack and maintaining and expanding other vital functions of the public health system. In the words of medical historian Jane Smith, “To public health practitioners, the best programs are continuous, inclusive, and preventive. To much of the public at large, the only really noticeable public-health programs are extraordinary reactions to a specific crisis, whether it be epidemic disease, toxic cloud, tainted food, or contaminated water. The principal benefit of a strong public-health infrastructure, the continuing practice of preventive medicine, is invisible, since its triumphs consist of bad things that do not happen.”³⁵

Smith captures nicely the dangers of steering public health spending toward what are perceived to be immediate threats while neglecting ongoing programs. According to The Century Foundation’s working group, the most critical point is that federal bioterrorism funding should improve the public health infrastructure as a whole, not weaken its ability to carry out other essential programs and duties. In other words, the emphasis should be on programs, systems, and policies that encourage “dual use,” not narrow applications.

The early evidence shows that bioterrorism preparedness funding in some locales may in fact be jeopardizing other public health functions. The RAND researchers in California found “substantial evidence that reassignments of staff to accomplish preparedness functions, coupled with pre-existing workforce shortages and county-level cuts in public health budgets, are compromising other public health functions. Multiple examples of retrenchments in essential programs (such as sexually transmitted disease and tuberculosis contact tracing, or teen pregnancy prevention programs) were provided. . . . Investments in public health preparedness should serve to bolster improvements in other vital areas of public health concern because many functions have dual- or multi-use applications.”³⁶

“Syndromic surveillance” and the smallpox vaccination initiative are two examples of how a narrow focus on bioterrorism preparedness may detract from other public health functions. Syndromic surveillance seeks out clusters of symptoms, in advance of diagnoses of diseases, to attempt to identify and pinpoint the source of outbreaks before affected individuals present themselves at doctor’s offices and emergency rooms. These symptoms might include lab test requests, 911 calls, ambulance run sheets, over-the-counter drug use, or work and school absenteeism.³⁷ Especially

since a fatal outbreak of cryptosporidium, a bacterial infection, in the Milwaukee water supply in 1993, public health specialists have been seeking ways to pinpoint outbreaks earlier. Faster computer servers and networks have made it possible to monitor clusters of symptoms as early warning signs.

The problem with syndromic surveillance is its substantial cost and need for staff backup. New York City's syndromic surveillance system, inaugurated in 1999, is generally considered the state of the art. It costs \$1.5 million annually, or about \$4,000 a day, putting it out of reach of all but major metropolitan health systems. Moreover, even if this system works well on paper, without a process for investigating alarms and responding, it is likely to be ineffective. If it is sensitive enough to catch the few additional cases that may be the harbinger of a bioterrorist attack, it is likely to generate many false alarms as well and to command scarce resources.³⁸ Consequently, health officials in cities such as Pittsburgh and others have questioned CDC's interest in expanding syndromic surveillance, preferring to rely on simpler and less expensive forms of monitoring for disease.³⁹

The federal smallpox vaccination program, likewise, diverted time and resources from other public health activities while yielding disappointing results in terms of the number of frontline responders who were vaccinated. As Elin Gursky sums up her findings from the national survey, "According to most respondents, the Phase I Smallpox Vaccination Initiative, which was not a component of the six focus areas enumerated in the federal guidelines, delayed many state and local bioterrorism programs and required substantial, unbudgeted time and resources. Some participants found the smallpox initiative so time-consuming that labor had to be diverted from routine but important work such as outbreak investigation and reporting, planning for pandemic influenza, and even taking hurricane precautions."⁴⁰

On the whole, however, federal preparedness funding has had a positive impact on building up the public health infrastructure and encouraging dual use. Gursky, in her conclusion, strikes the proper balance between acknowledging the progress that has been made and pointing out the dangers to avoid:

Respondents emphasized that since the skills and resources required to detect and respond to bioterrorism are the same as those required to fulfill many traditional public health responsibilities, reductions in

basic public health capacities render biodefense efforts less effective. Moreover, many commented that a categorical approach to bioterrorism preparedness limits the funding and skilled personnel available. Despite concerns that the accountability requirements associated with the use of the federal bioterrorism preparedness funds may have deprived the “dual-benefit” paradigm of its full potential, monies clearly have infused public health departments, both state and local, with the tools and capabilities needed to conduct “core” business—computers to collect and analyze data, surveillance systems to detect unusual disease activity, and cell phones and Internet connectivity to report and alert other essential personnel and services. “Dual use,” or building biodefense as an outgrowth of more basic and essential capacities, should be considered a fundamental strategy for tackling both natural and deliberate health threats.⁴¹

The public has a sketchy knowledge of how federal bioterrorism dollars are being spent. It expects, however, that preparedness will increase. Making visible improvements to the public health system—for instance, by refining the system’s ability to track and respond to a flu outbreak—should reassure people that money is being spent wisely. Building a dual-use public health system, much like the other recommendations in this report, will help to avoid the twin dangers of public complacency and contempt.

SARS

A PREPAREDNESS WAKE-UP CALL

SARS, or Severe Acute Respiratory Syndrome, is a viral disease that first appeared in Asia in February 2003. Shortly thereafter, the disease spread to countries elsewhere in Asia and to Europe and the Americas. During the 2003 outbreak, 8,098 people contracted SARS, and 774 died from the disease. In the United States, just eight cases of SARS were confirmed.

Fortunately, the consequences of SARS for the U.S. population were minimal. However, Congress, alarmed at what might have occurred, held hearings on public health before a House subcommittee in May of 2003. The testimony at these hearings pointed

out challenges for the federal government's preparedness focus areas, including those of preparedness planning, surveillance, laboratory capacity, hospital preparedness, and education and training.

Washington State's secretary of health referred to the example of a cargo ship arriving from Asia with several sick crew members. She stated, "We had questions about symptoms, who had the authority, would we isolate, would we quarantine, who is it that would address the issue? Calls for assistance and questions quickly overwhelmed CDC's Division of Global Migration and Quarantine."

The CEO of Loudoun Hospital Center, a health system in northern Virginia, also testified about preparedness issues. Upon reviewing his organization's handling of a probable SARS case, he found a lack of testing supplies in the northern Virginia area. Materials had to be sent from Richmond, the state capital, by courier. There were no procedures in place for quickly sending samples to Atlanta, where CDC is headquartered, during a weekend.

The health director of the General Accounting Office reported surveillance problems to the House Subcommittee on Oversight and Investigations. "Six of the cities we visited used a passive surveillance system to detect infectious disease outbreaks. However, passive systems may be inadequate to identify a rapidly spreading outbreak in its earliest and most manageable stages. . . ." According to the director, local authorities "considered event detection to be a weakness in their system."

Lack of laboratory capacity also poses dangers. New York City's health commissioner called this gap the "first and most urgent [one]. This is true at the national, many state, and certainly our local and many other local levels." The gap is in fact closing, though perhaps not fast enough. According to DHHS, the CDC's Laboratory Response Network had expanded to 120 member labs in all fifty states by late 2003, up from 80 in 2001, and was expected to grow to 145 by the end of fiscal year 2004. The commissioner also singled out hospital preparedness, remarking that "our hospitals still have large numbers of critical benchmarks to reach." He noted that hospitals need assistance

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“building additional airborne isolation rooms, stockpiling and maintaining inventory for a three-day supply of pharmaceutical supplies, conducting internal tabletop drills, and increasing security at hospitals.”

SARS, thankfully, has not (as of yet) presented a great problem for the American public health system. However, the outbreak highlighted the remaining challenges and the need for sustained funding and better coordination and planning at all levels of government.

COMMENT BY GEORGE E. HARDY, JR.,
AND PATRICK M. LIBBEY

While we fully support the goals and the majority of the recommendations of this report, we cannot endorse, as written, either Recommendation Two or the language in the body of the text that supports that recommendation. Specifically, the definition of local public health preparedness capabilities is work that necessitates both the leadership and the full and equal participation of local public health officials in consort with their federal and state colleagues. While there is an argument to be made that state and/or federal governments do have a certain authority to hold local public health agencies accountable for their actions and performance in relation to any established standard or definition of capabilities, the distinction between defining the capabilities and ensuring accountability for their performance is significant and critical. Local public health agencies, those closest to that actual work, are in the best position to inform a process of defining required local capabilities. This process must be fully informed from the point of view of public health practice.

NOTES

1. Patricia Thomas, “The Anthrax Attacks,” The Century Foundation, New York, 2002.

2. For the purposes of this report, bioterrorism is defined as “the use of biologic agents (bacterial, viral, or parasitic) to intentionally produce disease or intoxication in a susceptible population to meet terrorist aims.” This definition is used by the Los Angeles County Department of Health Services, Acute Communicable Disease Control Unit, available online at <http://www.lapublichealth.org/phcommon/public/faqs/faqdisprec.cfc?&faqid=285&ou=ph&prog=dcp&unit=bt>. The definition of public health is adapted from “To Protect and Prevent: Rebuilding California’s Public Health System,” Executive Summary, Little Hoover Commission, Sacramento, April 10, 2003, p. ii.

3. Laurie Garrett, *Betrayal of Trust* (New York, Hyperion, 2000), p. 484.

4. John R. Lumpkin and Margaret S. Richards, “Transforming the Public Health Information Infrastructure,” *Health Affairs* 21, no. 6 (November/December 2002): 45.

5. Ari Schuler, “Billions for Biodefense: Federal Agency Biodefense Funding, FY2001–FY2005,” *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science* 2, no. 2 (2004): 86. On the exact dollar figures for spending on state and local preparedness, see Janet Heinrich, “Public Health Preparedness: Response Capacity Improving, but Much Remains to be Accomplished,” testimony before the House Committee on Government Reform, GAO-04-458T, General Accounting Office, Washington, D.C., February 12, 2004, available online at <http://www.gao.gov/atext/d04458t.txt>.

6. Shelley A. Hearne et al., “Ready or Not? Protecting the Public’s Health in an Age of Bioterrorism,” Trust for America’s Health, Washington, D.C., December 2003, p. 20, available online at <http://healthyamericans.org/state/bioterror/Bioterror.pdf>.

7. Megan McHugh, Andrea B. Staiti, and Laurie E. Felland, “How Prepared Are Americans for Public Health Emergencies? Twelve Communities Weigh In,” *Health Affairs* 23, no. 3 (2004): 204.

8. Heinrich, “Public Health Preparedness.”

9. American Public Health Association, “One Year After the Terrorist Attacks: Is Public Health Prepared? A Report Card from the American Public Health Association,” p. 3, available online at <http://www.apha.org/united/Sept11ReportCard.pdf>.

10. National Health Policy Forum, “Medical Response for Terrorism and Public Health Threats: One Region’s Experience,” Site Visit Report, Pittsburgh, September 22–23, 2003.

11. “Continuation Guidance for Cooperative Agreement on Public Health Preparedness and Response for Bioterrorism—Budget Year Five,” Program Announcement 99051, June 14, 2004, available online at http://www.bt.cdc.gov/planning/continuationguidance/pdf/guidance_intro.pdf. For a complete description of the focus areas in the cooperative agreements, see Bernard J. Turnock, “Public Health Preparedness at a Price: Illinois,” The Century Foundation, New York, 2004, pp. 10–14. The CDC also distinguishes between “critical” and “enhanced” capacities, the latter referring to the additional expertise and infrastructure, beyond the critical capacities, that allow performance above the core level of preparedness.

12. Turnock, “Public Health Preparedness at a Price,” p. 30.

13. Centers for Disease Control and Prevention, Agency for Toxic Substances and Disease Registry, Department of Health and Human Services, “A National Public Health Strategy for Terrorism Preparedness and Response 2003–2008,” Washington, D.C., March 2004. At the time of publication, CDC officials reported that work was well advanced on developing national standards and performance goals in partnership with states and localities.

14. Nicole Lurie, “Public Health Preparedness in California: Lessons from Seven Jurisdictions,” testimony presented to the California Senate Committee on Health and Human Services, June 2, 2004, available online at <http://www.rand.org/publications/CT/CT227/CT227.pdf>.

15. National Association of County and City Health Officials, “Project Public Health Ready: A National Public Health Workforce Development Initiative,” Washington, D.C., available online at <http://archive.naccho.org/documents/Project-Public-Health-Ready-Fact-Sheet.pdf>.

16. Centers for Disease Control and Prevention, Division of Public Health Surveillance and Informatics, “Performance Criteria for Public Health Disease Reporting Systems Operating Twenty-four Hours per Day, Seven Days per Week,” available online at <http://www.cdc.gov/epo/dphsi/8city.htm>. For a similar set of best practices in a specific area of preparedness, see National Governor’s Association, “State Strategies for Accelerating Enhanced 9-1-1 Implementation,” NGA Center for Best Practices, Washington, D.C., April 28, 2004, available online at <http://www.nga.org/cda/files/0404E911.pdf>.

17. Elin Gursky, "Progress and Peril: Bioterrorism Preparedness Dollars and Public Health," The Century Foundation, 2003, New York, p. 48.

18. Department of Homeland Security, "Top Officials (TOPOFF) Exercise Series: TOPOFF 2: After Action Summary Report for Public Release," December 19, 2003, available online at http://www.dhs.gov/interweb/assetlibrary/T2_Report_Final_Public.doc.

19. White House, "Biodefense for the 21st Century," Homeland Security Release, April 28, 2004, available online at <http://www.whitehouse.gov/homeland/20040430.html>.

20. Gursky, "Progress and Peril," pp. 18–19.

21. Lurie, "Public Health Preparedness in California," p. 4.

22. Gursky, "Progress and Peril," p. 49.

23. Anne M. Khademan, "Strengthening State and Local Terrorism Prevention and Response," in *The Department of Homeland Security's First Year: A Report Card*, ed. Donald F. Kettl (New York: Century Foundation Press, 2004), pp. 119–151.

24. Agency for Healthcare Research and Quality, "Regionalization of Bioterrorism Preparedness and Response: Summary," Evidence Report/Technology Assessment, no. 96, Department of Health and Human Services, Public Health Service, Washington, D.C., April 2004.

25. McHugh, Staiti, and Felland, "How Prepared Are Americans for Public Health Emergencies?" 203. "While preparedness generally is a county-level activity, six CTS [Community Tracking Study] states also created intermediate regional planning structures. These planning regions were created for organizational purposes; for example, they parallel state police regions in Michigan and the Federal Emergency Management Agency regions in Florida. Because CTS communities tend to be the largest communities in their regions, they often serve as regional leaders. The regions also help foster collaboration among neighboring jurisdictions where it was previously lacking."

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27. Mary C. Selecky, testimony before the Senate Permanent Subcommittee on Investigations, May 21, 2003, available online at http://govt-aff.senate.gov/_files/052103selecky.pdf.

28. Association of State and Territorial Health Officials, "State Public Health Employee Worker Shortage Report: A Civil Service Recruitment and Retention Crisis," June 2004, available online at <http://www.astho.org/pubs/Workforce-Survey-Report-2.pdf>.

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30. Centers for Disease Control and Prevention, "Key Facts About the Cities Readiness Initiative Pilot Program," fact sheet, June 14, 2004, available online at <http://www.bt.cdc.gov/cri/pdf/facts.pdf>; Association of State and Territorial Health Officials, "ASTHO Opposes Plan to Divert Bioterrorism Funds," May 21, 2004, available online at http://www.astho.org/templates/display_pub.php?pub_id=1131; Robert Roos, "HHS to Shift Some Biodefense Funds from States to Cities," Center for Infectious Disease Research and Policy, Minneapolis, June 7, 2004, available online at <http://www.cidrap.umn.edu/cidrap/content/bt/bioprep/news/jun0704btfunds.html>.
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36. Lurie, "Public Health Preparedness in California," p. 6.
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38. Michael A. Stoto, Matthias Schonlau, and Louis T. Mariano, "Syndromic Surveillance: Is It Worth the Effort?" *Chance* 17, no. 1 (2004), pp. 19–24.
39. National Health Policy Forum, "Medical Response for Terrorism and Public Health Threats," Site Visit Report, Pittsburgh.
40. Gursky, "Progress and Peril," pp. 35–36.
41. *Ibid.*, p. 45.

