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Issue Brief

State Preparedness for Bioterrorism and Public Health Emergencies

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ABSTRACT: The nation's ability to prepare for and respond to an infectious disease or bioterrorist attack rests largely in states' public health systems. Early federal efforts to provide funding to help states and localities build their infrastructure have led to a great deal of activity in this area. Evaluations of progress in preparedness show both successes and shortcomings, and assessments of whether or not the nation is prepared vary depending on benchmarks used and perspectives on spending priorities. Future assessments will be needed for continuous monitoring of improvements and challenges.

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Introduction

The West Nile outbreak of 1999 and anthrax attacks of 2001 heightened awareness of the dangers of bioterrorism and public health emergencies.¹ Such emergencies can cause widespread illness and death, disrupt economic and government activities, create fear, cost billions of dollars, and can even escalate to an international crisis.² Many factors make current threats more salient than in the past. Previously unknown illnesses have emerged, known diseases thought to be nearly eradicated have reappeared, resistance to antimicrobial drugs to treat illnesses is rising, and the threat of terrorism persists.³ In addition, recent public statements about the safety of the nation's food supply have heightened public debate about the problem.⁴

The nation's ability to prepare for and respond to an infectious disease or bioterrorist attack rests largely in states' public health systems. To meet their responsibilities, states must rebuild many parts of the public health infrastructure, expand their traditional focus to incorporate the threat of biological and chemical terrorism, and coordinate efforts across multiple levels of government. To assist states with these challenges, Congress authorized grants to states for bioterrorism and public health preparedness activities

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under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002.⁵ As of summer 2004, funds to states have totaled over \$3.7 billion.⁶ These funds have helped states make progress in preparedness, but many gaps remain.

Background: The Public Health Infrastructure

The nation's public health system relies on an infrastructure of health departments and agencies, laws and regulations, public and private laboratories, hospitals and other health care providers, and data and communication programs. This system operates through interrelated activities at the local, state, and federal levels.

Preparedness activities in bioterrorism and public health emergencies fall into the broad categories of prevention, detection, and response.⁷

Examples of core capacities in these areas include:

- *Prevention:* regulating environmental and agricultural conditions to minimize threats, limiting access to certain biological agents, and improving intelligence to uncover plans for biological or chemical attacks
- *Detection:* health care provider training and education to improve diagnosis, enhanced surveillance and epidemiology to detect outbreaks, and improved laboratory capabilities
- *Response:* establishment of response plans, regular drills or exercises of those plans, regional and interagency coordination and communication, medical capacity for decontamination, immunization, and treatment

Most of these capacities are dual use, preparing for both bioterrorist attacks and naturally occurring disease outbreaks.

Local public health agencies are generally the front line in response to public health or bioterrorism crises.⁸ In response capacities, they typically facilitate coordination between traditional first responders, medical providers, and state services. Localities also often lead communicable disease control and sometimes directly provide treatment services. Responsibilities sometimes

extend into detection capacities such as surveillance, epidemiology, and basic laboratory services.

States hold primary responsibility for organizing public health and bioterrorism preparedness activities.⁹ Some states delegate authority to local health agencies, while others maintain a centralized approach. Generally, states take the lead in many detection activities. They provide advanced laboratory capacity and epidemiological expertise, coordinate and direct surveillance, lead planning and coordination efforts among localities, law enforcement, providers, and other state agencies, and advise on diagnosis, treatment, or remediation of hazardous conditions. States also provide and funnel funding to local efforts.

The federal government takes primary responsibility for preparedness activities related to biological research, pharmaceutical and food safety assurance, and intelligence activities. The federal government also provides support to local and state preparedness efforts for detection and response. This support includes training programs, national surveillance and early warning detection systems, funding and technical assistance for laboratories, development and maintenance of vaccine stockpiles, and provision of financial resources and technical assistance.

Physicians, hospitals, and other health care providers are central to detection of and response to a public health crisis. Providers treating victims often identify and report outbreaks. In the event of a crisis, providers also are called upon to help implement state and local preparedness plans and treat patients and victims. To fulfill this role, they participate in training to keep abreast of treatment guidelines, practice response through exercises, and maintain surge capacity to accommodate an influx of victims.

In 2002, the Institute of Medicine highlighted problems in the public health infrastructure, including:

- outdated technologies
- workforce lacking training and reinforcements
- antiquated lab capacity

- lack of real-time surveillance and epidemiological systems
- ineffective and fragmented communication networks
- incomplete emergency response capabilities¹⁰

Several other studies and simulations¹¹ also documented gaps in basic needs in state and local public health agencies. For example, many local health agencies did not have Internet access, and some state and local health department heads had no graduate training.¹² Hospital readiness also was a concern: many hospitals lacked adequate supplies of medical equipment, such as ventilators, isolation beds, or decontamination showers for a surge in patients.¹³ Recommendations for addressing the threat of infectious diseases largely agreed that efforts should focus on rebuilding and sustaining the public health capacity for surveillance, laboratory readiness, communication, and collaboration.¹⁴

Federal Programs to Support State and Local Preparedness

Many federal agencies have jurisdiction over activities related to bioterrorism or infectious diseases,¹⁵ but current efforts to support preparedness at the state and local levels are primarily based in the Department of Health and Human Services (see Table 1). The largest federal effort to support state preparedness stems from the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. This law directs the Secretary of the Department of Health and Human Services to “develop and implement a coordinated strategy to prepare for and respond to bioterrorism and other public health emergencies,” and specifies that the federal government coordinate its efforts with the states.¹⁶ The law authorizes the Secretary to award grants or cooperative agreements to states for emergency planning and assessment, infrastructure development (particularly laboratory readiness), surveillance and reporting improvements, education and training, and communication.

All 50 states, as well as the District of Columbia, New York City, Los Angeles, and

Chicago,¹⁷ receive funds through cooperative agreement programs.* The cooperative agreement programs are operated through the Centers for Disease Control and Prevention (CDC) and the Health Resources and Services Administration (HRSA). CDC’s Public Health Preparedness and Response for Bioterrorism Program focuses on public health preparedness.¹⁸ HRSA’s National Bioterrorism Hospital Preparedness Program addresses preparedness among hospitals, emergency medical services systems, and other health care facilities.

States and localities apply annually for funding by submitting detailed work plans to the agencies. Each state or locality receives a base allocation plus a per capita amount. Funding under these programs has totaled over \$3.7 billion since their inception.¹⁹ In FY2004, the CDC program provided \$849 million, and the HRSA program provided \$498 million (see Figure 1).

Both programs identify specific capacities that states are expected to build using federal funds. The CDC program groups capacities into seven focus areas and identifies critical capacities that states should develop within each:²⁰

1. Preparedness planning and readiness assessment
2. Surveillance and epidemiology capacity
3. Laboratory capacity for biologic agents
4. Laboratory capacity for chemical agents
5. Health alert network/communications and information technology
6. Communicating health risks and health information dissemination
7. Education and training²¹

HRSA similarly has identified priority issues for states. In FY2004, these priority areas included:

1. Administration
2. Regional surge capacity for care of victims of emergencies

* Through the use of a cooperative agreement (versus a grant), the federal agencies maintain programmatic collaboration with the states and cities.

Table 1. Major Federal Programs to Support State and Local Preparedness

Centers for Disease Control and Prevention (Department of Health and Human Services) Programs

Public Health Preparedness and Response for Bioterrorism Program	Provides funds to states to support planning, infrastructure development, workforce training and expansion, and communication
Laboratory Response Network	Aims to improve the public health laboratory infrastructure
Health Alert Network	Aims to improve and integrate public health communication capabilities
Public Health Information Network	Previously the National Electronic Disease Surveillance System, provides framework for early detection of emergencies
Strategic National Stockpile	Operated jointly with the Department of Homeland Security, aims to supplement state and local pharmaceutical and medical supplies

Health Resources Services Administration (Department of Health and Human Services) Programs

National Bioterrorism Hospital Preparedness Program	Provides funds to states to ready hospitals to care for victims of terrorism and other public health emergencies
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Federal Emergency Management Agency (Department of Homeland Security) Programs

Metropolitan Medical Response System	Aims to develop or enhance existing emergency preparedness systems and first responders to respond to a public health or bioterrorism crisis
National Disaster Medical System	Provides coordination between federal and state agencies in providing medical teams, equipment, and supplies to respond to crises

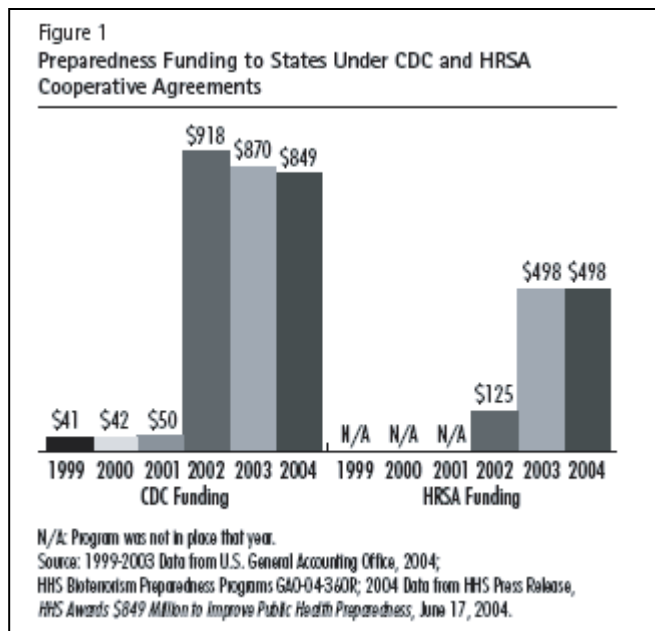
Office for Domestic Preparedness (Department of Homeland Security) Programs

Urban Area Security Initiative	Provides financial assistance to address the planning, equipment, training, and exercise needs of large urban areas
State Homeland Grant Program	Provides funding for specialized equipment, exercises, training, and planning costs associated with updating and implementing each state's Homeland Security Strategy

Science and Technology Division (Department of Homeland Security) Programs

BioWatch	Supports nationwide early warning system that can rapidly detect trace amounts of biological materials in the air
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Source: Compiled from agency websites; Carafano, J.J. "Improving the Federal Response to Catastrophic Bioterrorist Attacks: The Next Steps," Backgrounder No. 1705. The Heritage Foundation. November 13, 2003; and Koblentz, G. "Biological Terrorism: Understanding the Threat and America's Response." In Howitt, A.M. and R. L. Pang, eds. *Countering Terrorism: Dimensions of Preparedness* (Cambridge, MA: The MIT Press), 2003.



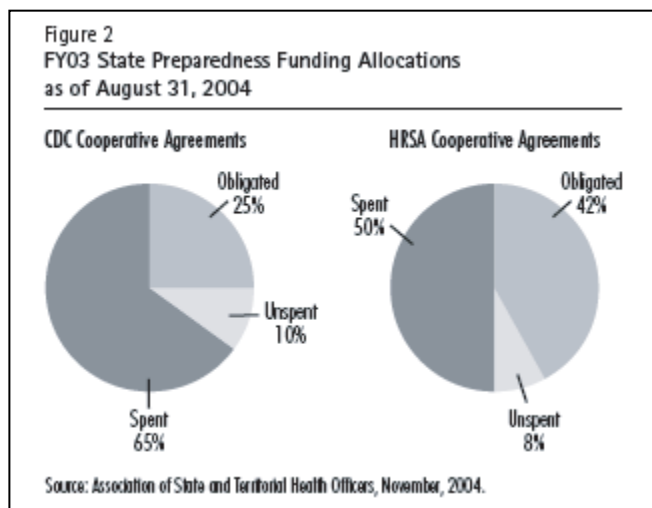
3. Emergency medical services
4. Linkages to public health departments
5. Education and preparedness training
6. Terrorism preparedness exercises²²

Both programs establish critical benchmarks for states to meet to show progress in preparedness, as well as deadlines and reporting guidelines.²³ Benchmarks differ slightly from one funding year to the next, as states reach previous benchmarks and new goals are established. States have flexibility in deciding the exact activities they undertake to fulfill the requirements.

Progress Toward Preparedness

Spending

As of August 2004, states had spent or obligated most (91%) of the FY2003 funds under the CDC and HRSA programs (see Figure 2). However, the distribution of funding allocations varied widely, with some states spending or obligating nearly all of their funds and others having 20 percent or more unspent.* States may request approval to carry over a portion of unobligated funds from one funding year to the next.²⁴



The CDC and HRSA programs allow states to determine whether and how funds are distributed to local public health agencies or hospital associations, though they also direct states to work with localities in planning and to use funds in a manner that benefits localities. States varied in how much funding had been directly passed on to cities or hospitals.²⁵ Seventeen states provided at least 50 percent of FY2002 federal funds directly to cities.²⁶

Program Benchmarks

According to the CDC, many states made progress in meeting the benchmarks for the cooperative agreements in FY2002 (see Table 2). Areas of particularly strong progress included:

- Designation of executive directors of preparedness programs
- Establishment of bioterrorism advisory committees
- Development of interim plans to receive and manage the Strategic National Stockpile
- Expanded coverage of epidemiologists
- Development of plans to improve relationships and communication between laboratories

Half of states met benchmarks of development of statewide or interstate preparedness plans and risk plans for communication, and 17 met the benchmark for training needs assessment. Some groups assessing state progress also note that many states not meeting benchmarks have taken steps toward fulfilling these goals. For example, the CDC reported that some states had made progress in preparedness for specific risks, such as smallpox or plague, but had not yet generalized their plans to an “all-hazards” approach.[†] Another evaluation found that while only 18 percent of respondents had completed their risk communication plans as of that survey, 71 percent reported progress.²⁷

For the HRSA program, the Government Accountability Office (GAO) reported that as of summer 2003,²⁸ most states had met critical benchmarks of designating a coordinator for hospital planning and establishing a preparedness committee (see Table 3). However, no state had fully developed a plan for hospital response to a large-scale epidemic. For example, many states had not met the specific task of establishing systems to ensure access to medically appropriate care to children, pregnant women, the elderly, and individuals with disabilities. There are indications of progress toward meeting benchmarks that have not been fully met. In January 2004, HRSA reported that a majority of hospitals either had in place or were developing procedures to increase hospital capacity and education and training.²⁹ A survey on progress through 2002 found that 86 percent of states had

* States spending or obligating nearly all their funds were: Alaska, Illinois, Indiana, Kansas, Maryland, Nebraska, New York, Oklahoma, Oregon, Rhode Island, and Virginia. States with 20 percent or more unspent were: Arizona, Arkansas, Delaware, Louisiana, Mississippi, and Pennsylvania.

† “All-hazards” refers to preparedness for bioterrorist attacks, major public health disasters, and other such emergencies.

Table 2. State Progress in Meeting FY2002 CDC Critical Benchmarks, August 2003

Focus Area	Benchmark	Number of States Meeting Benchmark ^a
Preparedness Planning and Readiness Assessment	Designation of executive director of preparedness program	50
	Establishment of bioterrorism advisory committee	49
	Assessment of emergency preparedness and response capabilities	29
	Assessment of statutes, regulations, and ordinances that provide for credentialing, licensure, and delegation of authority for executing emergency public health measures	41
	Development of statewide response plan and provisions for exercising the plan	25
	Development of regional response plan across state borders	25
	Development of interim plan to receive and manage items from the Strategic National Stockpile	50
Surveillance and Epidemiology Capacity	Development of system to receive and evaluate urgent disease reports at all times	32
	Assessment of epidemiologic capacity and achievement of at least one epidemiologist per MSA	34 ^b
Laboratory Capacity for Biologic Agents	Development of plan to improve working relationships and communication between clinical and public health labs	49
Health Alert Network/ Communications and Information Technology	Coverage of 90 percent of the population by the Health Alert Network	44
	Development of communications system that provides for flow of critical health information at all times	42
Communicating Health Risks and Health Information Dissemination	Development of interim plan for risk communication	25
Education and Training	Assessment of training needs	17

^a Does not include cities or territories.

^b Only applicable in 36 states.

Source: Henderson, J.M. "State and Local Preparedness—Progress in Achieving Critical Benchmarks." Presentation to the Secretary's Council on Public Health Preparedness, January 22, 2004, available at: <http://www.hhs.gov/asphep/presentation/J.HendersonPM.pdf>.

Table 3. State Progress in Meeting FY2002 HRSA Critical Benchmarks, August 2003

Benchmark	Share of States Meeting
Designation of coordinator for hospital preparedness planning	Majority
Establishment of hospital preparedness planning committee	Majority
Development of plan for hospitals to respond to an epidemic involving at least 500 patients	None

Source: U.S. General Accounting Office. 2004. HHS Bioterrorism Preparedness Programs. GAO-04-360R.

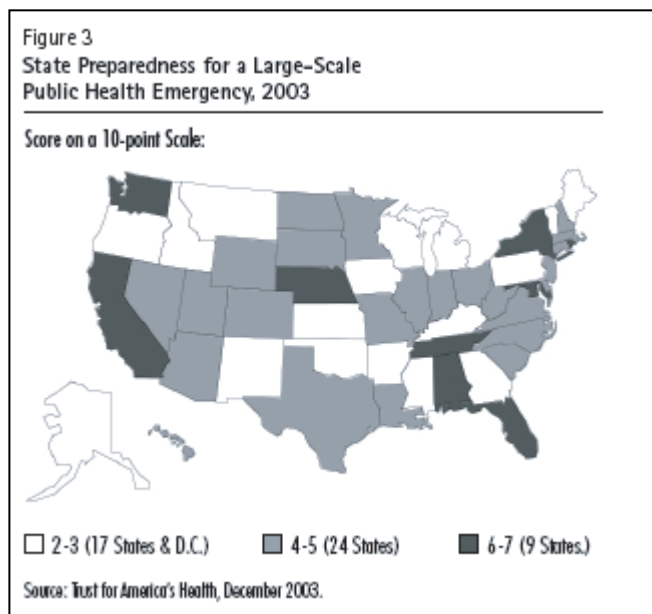
made progress in assessing hospital preparedness and 79 percent had progressed in their hospital response plans.³⁰

Other Measures

Interviews and surveys of administrators and health officials highlight additional areas of progress using

federal funds, such as general accomplishments in planning, staffing, and communication.³¹ Several evaluations comment on stronger relationships and collaboration between public health and other emergency response partners.³² Evaluations also note advances in building laboratory capacity, building disease-reporting systems, and training hospital workforce.³³

Recurrent themes of problem areas in preparedness include hiring trained laboratory and epidemiological personnel, hospital capacity for large-scale emergencies or vaccination programs, and regional coordination. Some evaluations note shortcomings in staffing to handle the Strategic National Stockpile,³⁴ laboratory capacity,³⁵ testing preparedness plans,³⁶ communication across levels of government,³⁷ and training private physicians and health plans.³⁸ One report concluded that, despite early progress, more work remained than had already been achieved: 75 percent of states met five or fewer of the ten indicators chosen by a panel to represent a fundamental level of preparedness (see Figure 3).[★]



[★] This report used a 10-point scale that was developed by a panel of state and local officials and public health experts. Three indicators relate to funding levels and spending; four relate to infrastructure investments similar to those in the program benchmarks; two relate to specific capacities for influenza and SARS. The report notes that the scale does not present a full measure of preparedness, but rather reflects fundamental capacities. Data on indicators were drawn from a variety of sources.

Problems in Achieving Preparedness

States indicate they face several challenges in preparedness:

- *Fiscal Conditions:* Efforts to improve preparedness coincided with the worst state fiscal crisis in 60 years.³⁹ However, states are beginning to emerge from their fiscal problems.⁴⁰ Though federal preparedness funds cannot supplant state funds provided for benchmark activities, during states' fiscal crises, some other state-funded public health efforts faced budget cuts.⁴¹ Insufficient levels of funds were cited at the local and hospital levels as barriers to preparedness efforts. This challenge was particularly important in building up capital-intensive areas like surveillance systems. Many evaluations also note that uncertainty over stability in funds made planning difficult.⁴²
- *Workforce Issues:* Building a qualified public health workforce and staffing needed positions are central challenges to preparedness.⁴³ Problems in building the workforce stem from a lack of supply of qualified workers, low salary levels relative to private positions, and lengthy bureaucratic procedures for funding and filling positions.⁴⁴ States and localities report that recent budget deficits and hiring freezes, layoffs, or salary limits exacerbated the staffing shortage. Deficiencies cited most often were in the number of epidemiologists and laboratory personnel.⁴⁵ States and cities also report vacancies in positions within public health departments, such as personnel to conduct training and carry out public communication tasks.⁴⁶ Legislation to address workforce challenges in state and local preparedness, introduced in the Senate in July 2004, was referred to the Committee on Health, Education, Labor, and Pensions.[†] No companion bill was introduced in

[†] The Public Health Preparedness Workforce Development Act of 2004 (S.2613) would have established a public health preparedness workforce loan repayment program and a public health preparedness scholarship program for individuals pursuing health profession degrees or certificates preparing them for public health service.

the House, and there was no further action on this legislation in the 108th Congress.

- *Competing Priorities:* Many activities funded through the federal cooperative agreements support both public health and bioterrorism preparedness. However, some recent reports of capacity-building note challenges in allocating funding and attention between bioterrorism, naturally occurring disease, and traditional public health problems.⁴⁷ Many note that these threats are equally salient, and differences of opinion over which areas should be top priority complicate allocation. Further, many reports note that the required diversion of resources to address the smallpox vaccination campaign temporarily pulled funds, personnel, and attention away from other preparedness activities.⁴⁸
- *Other Challenges:* Some states have noted that delays in distributing funds were linked to state appropriations calendars or slow state personnel hiring processes.⁴⁹ Others commented that state departments and initiatives needed to be restructured to meet federal program goals. Different views among local government officers, state public health professionals, and medical providers regarding how funds should be appropriated sometimes created delays as options were debated.⁵⁰

Recent Actions

Funding Level

For FY2005, the President’s budget requested funding the HRSA program at \$476 million and the CDC program at \$829 million (Table 4).⁵¹ The Consolidated Appropriations Act, 2005 (P.L. 108-447) funds the HRSA program at \$495 million and the CDC program at \$934 million.⁵²

Program Initiatives

In 2004, the CDC redirected some funds available under the cooperative agreement to other initiatives.⁵³ As part of this redirection, the Cities Readiness Initiative was established as a joint effort between the Department of Homeland Security and the Department of Health and Human Services. This program provides \$27 million in direct assistance to 21 cities to be used for preparedness related to receiving and dispensing the Strategic National Stockpile.⁵⁴ The initiative was praised for its response to local governments’ requests for more direct funding, but caused debate among public health advocates in its use of redirected existing funds (versus new funds) that were to go to states.

The cooperative agreement programs are developing additional measures for evaluating progress. The CDC has announced that in the future “critical capacities” will be transitioned to “evidence-based performance goals and measures” to improve the ability to document achievements. Similarly, HRSA announced the establishment of “minimal levels of readiness” and “sentinel indicators” to assess progress. These measures will allow assessment of readiness activities that are a means to meeting critical benchmarks.⁵⁵ CDC and HRSA will undertake exercises in funding areas to further evaluate performance.

Flu Preparation and Response

Responding to the threat of a pandemic flu epidemic, which some believe is inevitable⁵⁶ and could be more deadly and demanding on resources than a bioterrorism attack,⁵⁷ the Bush Administration announced the first national response plan for a

Table 4. Federal Funding to Cooperative Agreements for State and Local Preparedness

	FY 2004 (Actual)	FY 2005 Budget Request	FY 2005 Appropriation
CDC (State and Local Capacity)	\$934	\$829	\$934
HRSA (Hospital Preparedness)	\$515	\$476	\$495

Source: Department of Health and Human Services; House Report 108-792.

pandemic flu outbreak in August 2004. The plan, released as a draft for public comment, outlines a broad strategy for preparation and response and provides guidance to states and localities. Planning for pandemic flu is also one of the cross-cutting benchmarks in the FY2004 CDC and HRSA cooperative agreements.⁵⁸ In the wake of the flu vaccine shortage following the contamination of doses in October 2004, the CDC announced a plan for allocating available doses across states. Each state receives doses to fulfill orders placed before the shortage, and about 7 million additional doses are allocated to states based on need.⁵⁹

Conclusion

With the heightened risk of infectious diseases and the diminished capacity to address them, as well as the growing threat of bioterrorism, the United States faces a significant challenge in its public health and bioterrorism preparedness. Early federal efforts to provide funding to help states and localities build their infrastructure have led to a great deal of activity in this area. Evaluations of progress in preparedness show both successes and shortcomings, and assessments of whether or not the nation is prepared vary depending on benchmarks used and perspectives on priorities in spending. Future assessments will be needed to continue to monitor improvements and challenges.

NOTES

¹ Koblentz, G. 2003. Biological Terrorism: Understanding the Threat and America's Response. In *Countering Terrorism: Dimensions of Preparedness*. Edited by A.M. Howitt and R. L. Pang. Cambridge: The MIT Press.

² Hamburg, M.A. April 9, 2003. Testimony to the Government Reform Committee, U.S. House of Representatives.

³ Institute of Medicine. 2003. *Microbial Threats to Health: Emergence, Detection, and Response*. Washington, DC: National Academies Press.

⁴ Henry J. Kaiser Family Foundation. 2004. HHS Secretary Thompson Announces Resignation, Raises Concerns About Safety of U.S. Food, Water Supply. *Kaiser Daily Health Policy Report*, December 6.

⁵ P.L.107188, June 12, 2002. This law authorizes funds under Section 319C1 of the Public Health Service Act (42 U.S.C. 247d-3a) to build capacity to identify, detect, monitor, and respond to threats to the public health.

⁶ U.S. Department of Health and Human Services. 2004. HHS Awards \$849 Million to Improve Public Health Preparedness. Available at: <http://www.hhs.gov/news/press/2004pres/20040617.html>.

⁷ See, for example: Koblentz, G. 2003. Biological Terrorism: Understanding the Threat and America's Response. In *Countering Terrorism: Dimensions of Preparedness*. Edited by A.M. Howitt and R. L. Pang. Cambridge: The MIT Press; Salinsky, E. 2002. *Public Health Emergency Preparedness: Fundamentals of the "System."* Washington, DC: National Health Policy Forum; Hamburg, M.A. June 28, 2002. Testimony to the Senate Committee on Governmental Affairs.

⁸ Heinrich, J. September 24, 2003. Testimony to the Subcommittee on Emergency Preparedness and Response, Select Committee on Homeland Security, U.S. House of Representatives.

⁹ Salinsky, E. 2002. *Public Health Emergency Preparedness: Fundamentals of the "System."* Washington, DC: National Health Policy Forum.

¹⁰ Institute of Medicine. 2002. *The Future of the Public's Health in the 21st Century*. Washington, DC: National Academies Press.

¹¹ For example, "Dark Winter" (a test of the nation's readiness for a smallpox attack) and TOPOFF (a test of response to pneumonic plague) both showed that the system could be quickly overwhelmed in a crisis.

¹² Markowitz, G., and D. Rosner. 2004. *Emergency Preparedness, Bioterrorism, and the States: The First Two Years after September 11*. New York: Milbank Memorial Fund.

¹³ U.S. General Accounting Office. 2003. *Hospital Preparedness: Most Urban Hospitals Have Emergency Plans but Lack Certain Capacities for Bioterrorism Response*. GAO-03-924.

¹⁴ These recommendations were included in the Institute of Medicine's comprehensive assessment of the threat of emerging infectious disease (Institute of Medicine. 2003. *Microbial Threats to Health: Emergence, Detection, and Response*. Washington, DC: National Academies Press) and were reiterated in many other reports and statements.

¹⁵ For example, agencies with responsibilities related to bioterrorism and public health include the Department of Homeland Security, the Department of Defense, Department of Justice, Department of Veterans Affairs, and the Department of Health and Human Services.

¹⁶ The law also includes several other provisions not directly linked to state preparedness, such as the Strategic National Stockpile of vaccines, biological products, and other medical devices and supplies needed in bioterrorism and public health emergencies; enhancing controls on dangerous biological agents and toxins; and protecting the food and water supply.

- ¹⁷ Territories also receive funding.
- ¹⁸ State preparedness funds have actually been available through the CDC since 1999, though the 2002 law provided a substantial increase in the preparedness funds available through the agency. Schable, C.A. May 3, 2004. Testimony to the Committee on Science, U.S. House of Representatives.
- ¹⁹ U.S. Department of Health and Human Services. 2004. HHS Awards \$849 Million to Improve Public Health Preparedness. Available at: <http://www.hhs.gov/news/press/2004pres/20040617.html>.
- ²⁰ CDC also identifies “enhanced capacities” that states may develop “over and beyond” critical capacities.
- ²¹ Centers for Disease Control and Prevention and Agency for Toxic Substances and Disease Registry. 2004. A National Public Health Strategy for Terrorism Preparedness and Response, 2003–2008.
- ²² Health Resources Services Administration. 2004. *National Bioterrorism Hospital Preparedness Program, FY2004 Continuation Guidance*, CFSA93.0003.
- ²³ Beginning in FY2003, the two programs also established “cross-cutting critical benchmarks” that are high-priority milestones common across the programs. Centers for Disease Control and Prevention. 2004. *Continuation Guidance for Cooperative Agreement on Public Health Preparedness and Response for Bioterrorism-Budget Year Five, Program Announcement 99051*. Health Resources Services Administration. 2004. *National Bioterrorism Hospital Preparedness Program, FY2004 Continuation Guidance*, CFSA93.0003.
- ²⁴ Department of Health and Human Services Office of Inspector General. 2004. *Nationwide Audit of State and Local Government Efforts to Record and Monitor Subrecipients’ Use of Public Health Preparedness and Bioterrorism Program Funds*. A-05-04-00027, available at: <http://oig.hhs.gov/oas/reports/region5/50400027.pdf>.
- ²⁵ McHugh, M., A.B. Staiti, and L.E. Felland. May/June 2004. How Prepared Are Americans for Public Health Emergencies? Twelve Communities Weigh In. *Health Affairs* 23(3):201.
- ²⁶ Hearne, S.A. et al. 2003. *Ready or Not: Protecting the Public’s Health in the Age of Terrorism*. Washington, DC: Trust for America’s Health.
- ²⁷ This survey examined progress through December 2002. Association of State and Territorial Health Officers. 2003. *Public Health Preparedness: A Progress Report, The First Six Months*. Washington, DC: Association of State and Territorial Health Officers.
- ²⁸ The GAO study was conducted prior to the deadline for states to meet many of the HRSA benchmarks.
- ²⁹ Smith, R. January 22, 2004. *National Bioterrorism Hospital Preparedness Program: Progress Toward Meeting Critical Benchmarks*. Presentation to the Secretary’s Council on Public Health Preparedness. Available at: <http://www.hhs.gov/asphep/presentation/RickSmith.pdf>.
- ³⁰ Association of State and Territorial Health Officers. 2003. *Public Health Preparedness: A Progress Report, The First Six Months*. Washington, DC: Association of State and Territorial Health Officers.
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- ³³ Hearne, S.A. et al. 2003. *Ready or Not: Protecting the Public’s Health in the Age of Terrorism*. Washington, DC: Trust for America’s Health; Staiti, A.B., A. Katz, and J.F. Hoadley. 2003. *Has Bioterrorism Preparedness Improved Public Health?* Washington, DC: Center for Studying Health System Change; Markowitz, G. and D. Rosner. 2004. *Emergency Preparedness, Bioterrorism, and the States: The First Two Years after September 11*. New York: Milbank Memorial Fund.
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