United States General Accounting Office

GAO

Testimony

Before the Subcommittee on Emergency Preparedness and Response, Select Committee on Homeland Security, House of Representatives

For Release on Delivery
Expected at 2:30 p.m.
Wednesday, September 24, 2003

INFECTIOUS DISEASES

Gaps Remain in Surveillance Capabilities of State and Local Agencies

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GAO-03-1176T

September 24, 2003

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Highlights

Highlights of GAO-03-1176T, testimony before the Subcommittee on Emergency Preparedness and Response, Select Committee on Homeland Security, House of Representatives

INFECTIOUS DISEASES

Gaps Remain in Surveillance Capabilities of State and Local Agencies

Why GAO Did This Study

Recent challenges, such as the SARS outbreak and the anthrax incidents in the fall of 2001, have raised concerns about the nation's preparedness for a large-scale infectious disease outbreak or bioterrorism event. In order to be adequately prepared for such a major public health threat, state and local public health agencies need to have several basic capabilities, including disease surveillance systems, laboratory facilities, communication systems and a sufficient workforce.

GAO was asked to examine the capacity of state and local public health agencies and hospitals to detect and report illnesses or conditions that may result from a large-scale infectious disease outbreak or bioterrorism event.

This testimony is based largely on recent work, including a report on state and local preparedness for a bioterrorist attack; preliminary findings from current work on updates of bioterrorism preparedness at the state and local levels; and findings from a survey GAO conducted on hospital emergency department capacity and emergency preparedness.

www.gao.gov/cgi-bin/getrpt?GAO-03-1176T.

To view the full testimony, including the scope and methodology, click on the link above. For more information, contact Janet Heinrich at (202) 512-7119.

What GAO Found

The efforts of public health agencies and health care organizations to increase their preparedness for infectious disease outbreaks and bioterrorism have improved the nation's ability to recognize such events. However, gaps remain in state and local disease surveillance systems, which are essential to public health efforts to respond to disease outbreaks or bioterrorist attacks. Other essential elements of preparedness include laboratory facilities, workforce, and communication systems. State and local officials report that they are addressing gaps in communication systems. However, there are still significant workforce shortages in state and local health departments. GAO also found that while contingency plans are being developed at the state and local levels, planning for regional coordination for disease outbreaks or bioterrorist events was lacking between states.

The disease surveillance capacities of many state and local pubic health systems depend, in part, on the surveillance capabilities of hospitals. Whether a disease outbreak occurs naturally or due to the intentional release of a harmful biological agent by a terrorist, much of the initial response would occur at the local level, particularly at hospitals and their emergency departments. Therefore, hospital personnel would be some of the first healthcare workers with the opportunity to identify an infectious disease outbreak or a bioterrorist event. Most hospitals reported training their staff on biological agents and planning coordination efforts with public health entities; however, preparedness limitations may impact hospitals' ability to conduct disease surveillance. In addition, hospitals still lack the capacity to respond to large-scale infectious disease outbreaks. Also, most emergency departments across the country have experienced some degree of overcrowding, which could be exacerbated during a disease outbreak or bioterrorist event if persons with symptoms go to emergency departments for treatment.

Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to be here today to discuss the work we have done on state and local preparedness to manage outbreaks of infectious diseases, which may be naturally occurring or the product of bioterrorism. In order to be adequately prepared for such a major public health threat, state and local public health agencies need to have several basic capabilities, including disease surveillance systems.[1] Surveillance is public health officials' most important tool for detecting and monitoring both existing and emerging infections. Effective surveillance can facilitate timely action to control outbreaks and inform allocation of resources to meet changing disease conditions. Without adequate surveillance, local, state, and federal officials cannot know the true scope of existing health problems and may not recognize new diseases until many people have been affected.

Recent challenges, such as the SARS[2] outbreak and the anthrax incidents in the fall of 2001, have raised concerns about the nation's preparedness to manage a disease outbreak or a bioterrorist event should it reach large-scale proportions. Existing surveillance systems have weaknesses, such as chronic underreporting and outdated laboratory facilities, which raise concerns about the ability of state and local agencies to detect emerging diseases or a bioterrorist event. As a result, state and local response agencies and organizations have recognized the need to strengthen their public health infrastructure and capacity. The improvements they are making are intended to strengthen their ability to identify and respond to major public health threats, including naturally occurring infectious disease outbreaks and acts of bioterrorism.

To assist the Subcommittee in its consideration of our nation's capacity to detect and monitor an outbreak of an infectious disease, my remarks today will focus on (1) the preparedness of state and local public health agencies for responding to an infectious disease outbreak, and (2) the contributions of hospitals to preparedness for an infectious disease outbreak.

[1]Disease surveillance uses systems that provide for the ongoing collection, analysis, and dissemination of health-related data to identify, prevent, and control disease.

[2]SARS is the abbreviation for severe acute respiratory syndrome.

My testimony today is based largely on our recent work, including a report on state and local preparedness for a bioterrorist attack.[3] For that report, we conducted site visits in December 2001 through March 2002 to seven cities and their respective state governments. We also reviewed each state's spring 2002 applications for bioterrorism preparedness funding to the Department of Health and Human Services' (HHS) Centers for Disease Control and Prevention (CDC) and Health Resources and Services Administration (HRSA), and each state's fall 2002 progress report on the use of that funding. In addition, I will discuss some preliminary findings from our current work that provides updated information on the preparedness of state and local public health agencies. For that work, we are reviewing the summer 2003 applications and progress reports and interviewing public health officials from 10 states and two major municipalities. I also will present some findings from a survey we conducted in 2002 on hospital emergency department capacity and emergency preparedness.[4] We conducted our work in accordance with generally accepted government auditing standards.

In summary, state and local officials in the cities we visited reported varying levels of public health preparedness to respond to outbreaks of emerging infectious diseases such as SARS. They recognized gaps in preparedness elements that have been difficult to address, including the disease surveillance and laboratory systems and the response capacity of the workforce. They also were beginning to address gaps in preparedness elements such as communication. We found that planning for regional coordination was lacking between states.

Because those with symptoms of an infectious disease might go to emergency departments for treatment, hospital personnel would likely be some of the first healthcare workers with the opportunity to identify an infectious disease outbreak. Therefore, the disease surveillance capacities of many state and local public health systems may depend, in part, on the

[3]U.S. General Accounting Office, *Bioterrorism: Preparedness Varied across State and Local Jurisdictions*, GAO-03-373 (Washington, D.C.: Apr. 7, 2003).

[4]Findings from the survey include those related to emergency department capacity, which we reported in U.S. General Accounting Office, *Hospital Emergency Departments: Crowded Conditions Vary among Hospitals and Communities*, GAO-03-460 (Washington, D.C.: Mar. 14, 2003) and to hospital emergency preparedness for mass casualty incidents, which we reported in U.S. General Accounting Office, *Hospital Preparedness: Most Urban Hospitals Have Emergency Plans but Lack Certain Capacities for Bioterrorism Response*, GAO-03-924 (Washington, D.C.: Aug. 6, 2003).

surveillance capabilities of hospitals. Most hospitals reported training their staff and planning coordination efforts with other public health entities. However, even with these preparations in place, hospitals lacked the capacity to respond to large-scale infectious disease outbreaks.

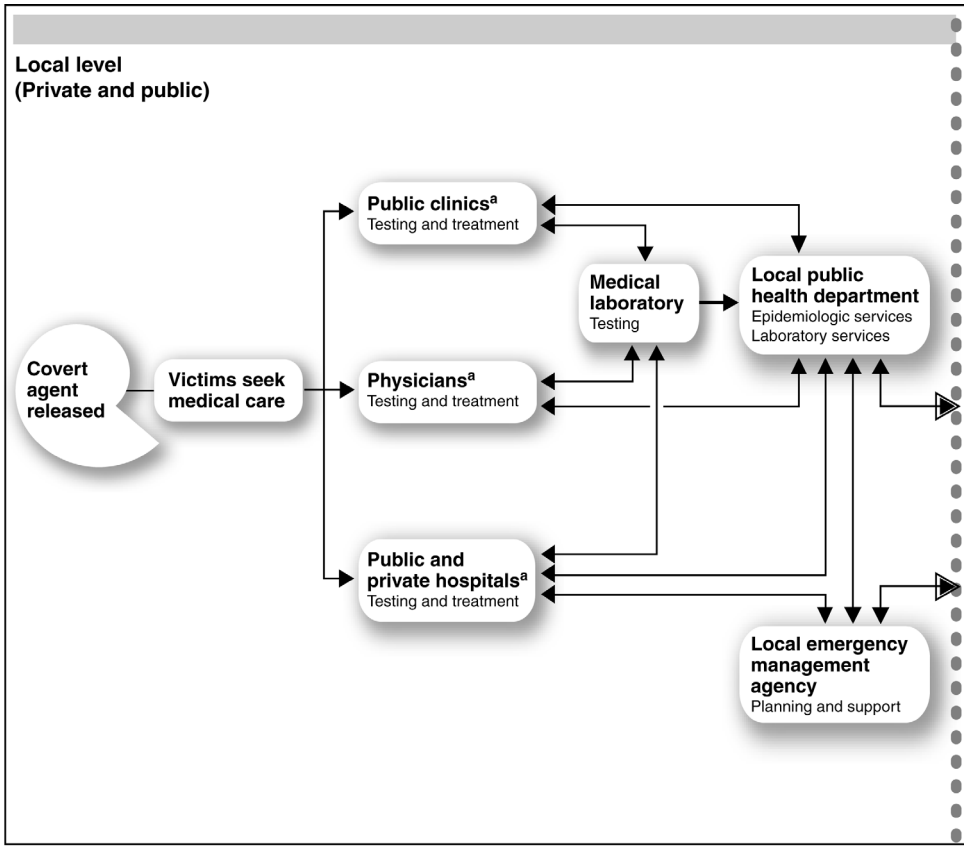
Background

Infectious diseases include naturally occurring outbreaks, such as SARS, as well as diseases from biological agents that are intentionally released by a terrorist, such as smallpox.[5] An infectious disease outbreak, either naturally occurring or from an intentional release, may not be recognized for a week or more because symptoms may not appear for several days after the initial exposure, during which time a communicable disease could be spread to those who were not initially exposed.

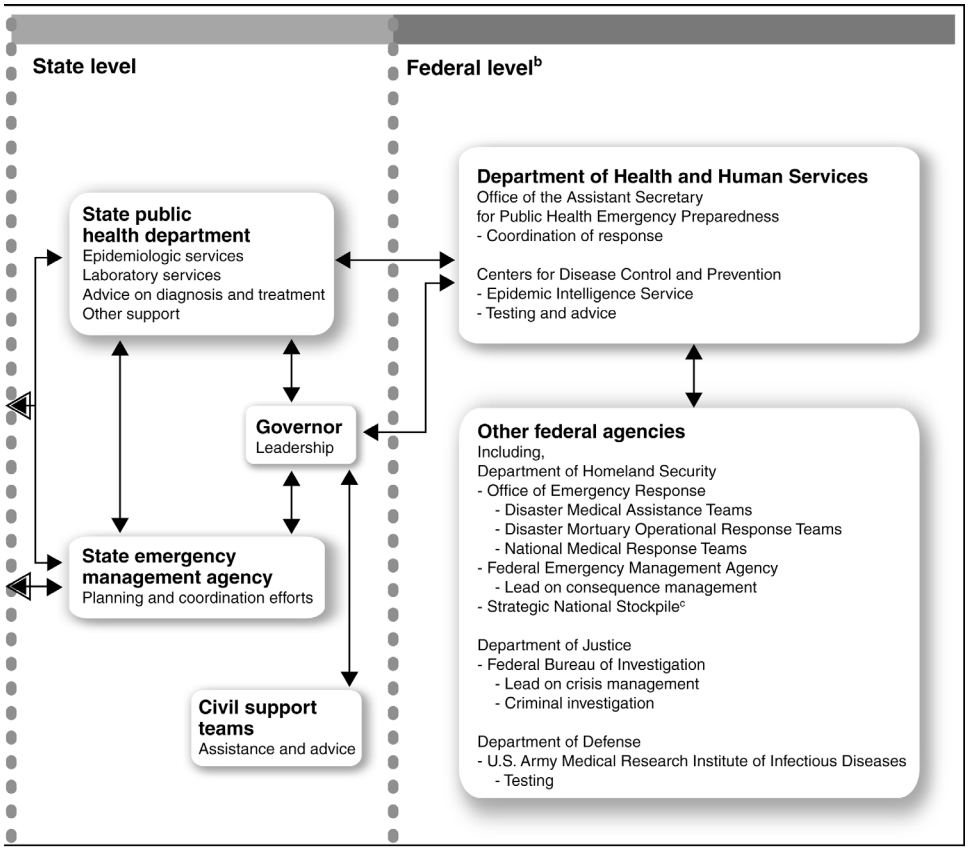
The initial response to an infectious disease of any type, including a bioterrorist attack, is generally a local responsibility that could involve multiple jurisdictions in a region, with states providing additional support when needed. Figure 1 presents the probable series of responses to a covert release of a biological agent. Just as in a naturally occurring outbreak, exposed individuals would seek out local health care providers, such as private physicians or medical staff in hospital emergency departments or public clinics. Health care providers would report any illness patterns or diagnostic clues that might indicate an unusual infectious disease outbreak associated with the intentional release of a biologic agent to their state or local health departments.

[5]CDC developed a critical agent list that focuses on the biological agents that would have the greatest impact on public health. This list includes a category of agents identified by CDC as most likely to be used in a bioterrorist attack and includes communicable diseases such as smallpox and pneumonic plague.

Figure 1: Local, State, and Federal Entities Involved in Response to the Covert Release of a Biological Agent



Source: GAO.



[a]Health care providers can also contact state entities directly.

[b]Federal departments and agencies can also respond directly to local and state entities.

[c]The Strategic National Stockpile, formerly the National Pharmaceutical Stockpile, is a repository of pharmaceuticals, antidotes, and medical supplies that can be delivered to the site of a biological (or other) attack.

In order to be adequately prepared for emerging infectious diseases in the United States, state and local public health agencies need to have several basic capabilities, whether they possess them directly or have access to them through regional agreements. Public health departments need to have disease surveillance systems and epidemiologists to detect clusters of suspicious symptoms or diseases in order to facilitate early detection of disease and treatment of victims. Laboratories need to have adequate capacity and necessary staff to test clinical and environmental samples in order to identify an agent promptly so that proper treatment can be started

and infectious diseases prevented from spreading. All organizations involved in the response must be able to communicate easily with one another as events unfold and critical information is acquired, especially in a large-scale infectious disease outbreak.

In the event of an outbreak, hospitals and their emergency departments would be on the front line, and their personnel would take on the role of first responders. Because hospital emergency departments are open 24 hours a day, 7 days a week, exposed individuals would be likely to seek treatment from the medical staff on duty. Staff would need to be able to recognize and report any illness patterns or diagnostic clues that might indicate an unusual infectious disease outbreak to their state or local health department. Hospitals would need to have the capacity and staff necessary to treat severely ill patients and limit the spread of infectious disease.

The federal government also has a role in preparedness for and response to major public health threats. It becomes involved in investigating the cause of a disease, as it did with SARS. In addition, the federal government provides funding and resources to state and local entities to support preparedness and response efforts. CDC's Public Health Preparedness and Response for Bioterrorism program provided funding through cooperative agreements in fiscal year 2002 totaling $918 million to states and municipalities to improve bioterrorism preparedness and response, as well as other public health emergency preparedness activities. The funding supported development and improvements in a number of areas CDC considers critical to preparedness and response, including surveillance capacity to rapidly detect outbreaks of illness that may be the result of bioterrorism or other public health threats.

HRSA's Bioterrorism Hospital Preparedness Program provided funding through cooperative agreements in fiscal year 2002 of approximately $125 million to states and municipalities to enhance the capacity of hospitals and associated health care entities to respond to bioterrorist attacks. Earlier this month, HHS announced that approximately $870 million and $498 million have been provided for fiscal year 2003 through the CDC and HRSA programs, respectively, to states and municipalities to continue these efforts.

Despite Improvements, Gaps Remain in Disease Surveillance Capabilities of State and Local Public Health Agencies

In the cities we visited, state and local officials reported varying levels of public health preparedness to respond to outbreaks of emerging infectious diseases such as SARS. They recognized gaps in preparedness elements that have been difficult to address, including the disease surveillance and laboratory systems and the response capacity of the workforce. They also were beginning to address gaps in preparedness elements such as communication. We found that planning for regional coordination was lacking between states.

Progress Has Been Made in Elements of Public Health Preparedness, but Gaps Remain

States and local areas had weaknesses in some public health preparedness elements, including the disease surveillance and laboratory systems and the response capacity of the workforce. Gaps in capacity often are not amenable to solution in the short term because either they require additional resources or the solution takes time to implement. States and local areas were addressing gaps in communication.

Surveillance Systems

State and local officials for the cities we visited in early 2002 recognized and were attempting to address inadequacies in their surveillance systems. Local officials were concerned that their surveillance systems were inadequate to detect a bioterrorist event, and all of the states we visited were making efforts to improve their disease surveillance systems. Six of the cities we visited used a passive surveillance system[6] to detect infectious disease outbreaks.[7] However, passive systems may be inadequate to identify a rapidly spreading outbreak in its earliest and most manageable stage because, as officials in three states noted, there is chronic underreporting and a time lag between diagnosis of a condition and the health department's receipt of the report. To improve disease surveillance, six of the states and two of the cities we visited were developing surveillance systems using electronic databases. Several cities

[6]Passive surveillance systems rely on laboratory and hospital staff, physicians, and other relevant sources to take the initiative to provide data on illnesses to the health department, where officials analyze and interpret the information as it arrives. In contrast, in an active disease surveillance system, public health officials contact sources, such as laboratories, hospitals, and physicians, to obtain information on conditions or diseases in order to identify cases. Active surveillance can provide more complete detection of disease patterns than a system that is wholly dependent on voluntary reporting.

[7]Officials in one city told us that although it had no local disease surveillance, its state maintained a passive disease surveillance system.

were also evaluating the use of nontraditional data sources, such as pharmacy sales, to conduct surveillance.[8] Three of the cities we visited were attempting to improve their surveillance capabilities by incorporating active surveillance components into their systems. For our ongoing work, state and local officials told us that their surveillance systems had improved somewhat. The officials reported that CDC funds have enabled them make some of these improvements in their surveillance systems, including the development of Web-based disease reporting and active surveillance systems.

Laboratory Facilities

Officials from all of the states we visited in early 2002 reported problems with their public health laboratory systems and said that they needed to be upgraded. All states were planning to purchase the equipment necessary for rapidly identifying a biological agent. State and local officials in most of the areas that we visited told us that the public health laboratory systems in their states were stressed, in some cases severely, by the sudden and significant increases in workload during the anthrax incidents in the fall of 2001. During these incidents, the demand for laboratory testing was significant even in states where no anthrax was found and affected the ability of the laboratories to perform their routine public health functions. Following the incidents, over 70,000 suspected anthrax samples were tested in laboratories across the country. According to preliminary data from our interviews and review of 2003 progress reports, officials reported that CDC funds enabled them to make improvements to their laboratory infrastructure, including upgrading their laboratory facilities, purchasing reagents and equipment, and improving their capability to test for select biologic agents.

Officials in the states we visited in 2002 were working on other solutions to their laboratory problems. States were examining various ways to manage peak loads, including entering into agreements with other states to provide surge capacity, incorporating clinical laboratories into cooperative laboratory systems, and purchasing new equipment. One state was working to alleviate its laboratory problems by upgrading two local

[8]This type of active surveillance system in which the public health department obtains information from such sources as hospitals and pharmacies and conducts ongoing analysis of the data to search for certain combinations of signs and symptoms, is sometimes referred to as a syndromic surveillance system. A senior HHS official stated that research examining the usefulness of syndromic surveillance needs to continue. See S. Lillibridge, *Disease Surveillance, Bioterrorism, and Homeland Security*, Conference Summary and Proceedings Prepared by the Annapolis Center for Science-Based Public Policy (Annapolis, Md.: U.S. Medicine Institute for Health Studies, Dec. 4, 2001).

public health laboratories to enable them to process samples of more dangerous pathogens and by establishing agreements with other states to provide backup capacity. Another state reported that it was using the funding from CDC to increase the number of pathogens the state laboratory could diagnose. The state also reported that it has worked to identify laboratories in adjacent states that are capable of being reached within 3 hours over surface roads. In addition, all of the states reported that their laboratory response plans had been revised to cover reporting and sharing laboratory results with local public health and law enforcement agencies.

Workforce

At the time of our early 2002 site visits, shortages in personnel existed in state and local public health departments and laboratories and were difficult to remedy. Officials from state and local health departments told us that staffing shortages were a major concern. Two of the states and cities that we visited were particularly concerned that they did not have enough epidemiologists to do the appropriate investigations in an emergency. Officials at one state department of public health we visited said that the department had lost approximately one-third of its staff because of budget cuts over the past decade. This department had been attempting to hire more epidemiologists. Barriers to finding and hiring epidemiologists included noncompetitive salaries and a general shortage of people with the necessary skills.

Workforce capacity issues may also hinder implementation of infectious disease control measures. For example, the shortage of epidemiologists could grow worse if, in the event of a severe outbreak, existing health care workers became infected as a result of their more frequent exposure to a contaminated environment or became exhausted working longer hours. Workforce shortages could be further exacerbated because of the need to conduct contact tracing.[9] According to World Health Organization officials, an individual infected with SARS came in contact with, on average, 30 to 40 people in Asian countries—all of whom had to be contacted and informed of their possible exposure.

During our site visits in early 2002, shortages in laboratory personnel were also cited. Officials in one city noted that they had difficulty filling and maintaining laboratory positions and that people that accepted the

[9]Contact tracing is the identification and tracking of individuals who may have been exposed to a person with a specific disease.

positions often left the health department for better-paying positions. Increased funding for hiring staff cannot necessarily solve these shortages in the near term because for many types of laboratory positions there are not enough trained individuals in the workforce. According to the Association of Public Health Laboratories, training laboratory personnel to provide them with the necessary skills will take time and require a strategy for building the needed workforce.[10] For our current work updating these findings, many of the state and local officials we interviewed cited shortages in trained epidemiologists or laboratory personnel as persistent.

In 2002, state and local officials told us that sustained funding would be necessary to address one important need—hiring and retaining needed staff. They told us they would be reluctant to hire additional staff unless they were confident that the funding would be sustained and staff could be retained. These statements are consistent with the findings of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, which recommended that federal support for state and local public health preparedness and infrastructure building be sustained at an annual rate of $1 billion for the next 5 years to have a material impact on state and local governments' preparedness for a bioterrorist event.[11] We have noted previously that federal, state, and local governments have a shared responsibility in preparing for terrorist attacks and other disasters.[12] However, prior to the infusion of federal funds, few states were investing in their public health infrastructure.

[10]Association of Public Health Laboratories, "State Public Health Laboratory Bioterrorism Capacity," *Public Health Laboratory Issues in Brief: Bioterrorism Capacity* (Washington, D.C.: October 2002).

[11]Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *Fourth Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction* (Arlington, Va.: RAND, Dec. 15, 2002). The Advisory Panel was established to assess federal agency efforts to enhance domestic preparedness, the progress of federal training programs for local emergency responses, and deficiencies in federal programs for response to incidents involving weapons of mass destruction; to recommend strategies for ensuring effective coordination of federal agency response efforts and for ensuring fully effective local response capabilities for weapons of mass destruction incidents; and to assess appropriate state and local roles in funding effective local response capabilities. The Advisory Panel issues annual reports to the President and to the Congress and has submitted four annuals reports to date.

[12]See U.S. General Accounting Office, *Homeland Security: Effective Intergovernmental Coordination Is Key to Success*, GAO-02-1013T (Washington, D.C.: Aug. 23, 2002).

Communication

We found that officials were beginning to address communication problems. For example, six of the seven cities we visited in early 2002 were examining how communication would take place in a public health emergency. Many cities had purchased communication systems that allow officials from different organizations to communicate with one another in real time. In addition, state and local health agencies were working with CDC to build the Health Alert Network (HAN), an information and communication system. The nationwide HAN program has provided funding to establish infrastructure at the local level to improve the collection and transmission of information related to public health preparedness. Goals of the HAN program include providing high-speed Internet connectivity, broadcast capacity for emergency communication, and distance-learning infrastructure for training. For our current work, our preliminary review of the 2003 progress reports from 12 jurisdictions shows that 11 reported that over 90 percent of their population was covered by HAN.

Some State and Local Contingency Planning Underway, but Regional Coordination Is Lacking

As part of the effort to prepare for a possible outbreak of an infectious disease, there is contingency planning at the state and local levels. Health departments, for instance, are in the process of developing contingency response plans for SARS. The SARS preparations have been modeled after a checklist designed for pandemic influenza. To facilitate these preparations, the Association of State and Territorial Health Officials and the National Association of County and City Health Officials, in collaboration with CDC, published a checklist for state and local health officials to use in the event of a SARS resurgence. The checklist encompasses a broad spectrum of preparedness activities, such as legal issues related to isolation and quarantine, strategies for communicating information to health care providers, and suggestions for ensuring other community partners such as law enforcement and school officials are prepared.

During our 2002 site visits, however, we found that response organization officials were concerned about a lack of planning for regional coordination between states during an infectious disease outbreak. As called for by the guidance for the CDC and HRSA funding, all of the states we visited in 2002 organized their planning on the basis of regions within their states, assigning local areas to particular regions for planning purposes. A concern for response organization officials was the lack of planning for regional coordination between states. A hospital official in one city we visited said that state lines presented a “real wall” for planning purposes. Hospital officials in one state reported that they had no

agreements with other states to share physicians. However, one local official reported that he had been discussing these issues and had drafted mutual aid agreements for hospitals and emergency medical services. Public health officials from several states reported developing working relationships with officials from other states to provide backup laboratory capacity.

Hospital Preparedness Improved, but Limitations in Response Capacity Remain

Because those with symptoms of an infectious disease might go to emergency departments for treatment, hospital personnel would likely be some of the first healthcare workers with the opportunity to identify an emerging infectious disease outbreak. Therefore, the disease surveillance capacities of many state and local public health systems may depend, in part, on the surveillance capabilities of hospitals. Most hospitals reported training their staff and planning coordination efforts with other public health entities. However, even with these preparations in place, hospitals lacked the capacity to respond to large-scale infectious disease outbreaks.

Hospitals Provide Vital Disease Surveillance Capacity

The disease surveillance capacities of many state and local public health systems may depend, in part, on the surveillance capabilities of hospitals. During the recent SARS outbreak in North America, for instance, hospital emergency rooms played an important role in identifying those who had the disease. According to hospital officials in California and New York, hospital emergency room or other waiting room staff routinely used questionnaires to screen incoming patients for fever, cough, and travel to a country with active cases of SARS. They said that hospitals' signs in various locations generally used by incoming patients and visitors also asked individuals to identify themselves to hospital staff if they met these criteria. In Toronto, which experienced a much greater prevalence of SARS than the United States, everyone entering a hospital was required to answer screening questions and to have their temperature checked before they were allowed to enter.

Most Hospitals Reported Planning and Training Efforts, but Fewer Than Half Have Participated in Drills or Exercises

In our survey of over 2,000 metropolitan hospitals,[13] most reported that they have provided training to staff on biological agents, but fewer than half have participated in drills or exercises related to bioterrorism. Most hospitals we surveyed reported providing training about identifying and diagnosing symptoms for the six biological agents identified by the CDC as most likely to be used in a bioterrorist attack. At least 90 percent of hospitals reported providing training for two of these agents—smallpox and anthrax—and approximately three-fourths of hospitals reported providing training about the other four—plague, botulism, tularemia, and hemorrhagic fever viruses.

Our hospital survey found that 4 out of 5 hospitals reported having a written emergency response plan for large-scale infectious disease outbreaks. Of the hospitals with emergency response plans, most include a description of how to achieve surge capacity for obtaining additional pharmaceuticals, other supplies, and staff. In addition, almost all hospitals reported participating in community interagency disaster preparedness committees.

At the time of our site visits between December 2001 and March 2002, we found that hospitals were beginning to coordinate with other local response organizations and collaborate with each other in local planning efforts. Hospital officials in one city we visited told us that until September 11, 2001, hospitals were not seen as part of a response to a terrorist event but that city officials had come to realize that the first responders to a bioterrorism incident could be a hospital's medical staff. Officials from the state began to emphasize the need for a local approach to hospital preparedness. They said, however, that it was difficult to impress the importance of cooperation on hospitals because hospitals had not seen themselves as part of a local response system. The local government officials were asking them to create plans that integrated the city's hospitals and addressed such issues as off-site triage of patients and off-site acute care.

[13]Between May and September 2002, we surveyed over 2,000 short-term, nonfederal general medical and surgical hospitals with emergency departments located in metropolitan statistical areas. (See U.S. General Accounting Office, *Hospital Emergency Departments: Crowded Conditions Vary among Hospitals and Communities*, GAO-03-460 (Washington, D.C.: Mar. 14, 2003) for information on the survey universe and development of the survey.) For the part of the survey that specifically addressed hospital preparedness for mass casualty incidents, we obtained responses from 1,482 hospitals, a response rate of about 73 percent.

Most Emergency Departments Have Experienced Some Degree of Crowding

Our survey of metropolitan hospitals found that most emergency departments have experienced some degree of overcrowding.[14] Persons with symptoms of infectious disease would potentially go to emergency departments for treatment, further stressing these facilities. The problem of overcrowding is much more pronounced in some hospitals and areas than in others. In general, hospitals that reported the most problems with crowding were in the largest metropolitan statistical areas (MSA) and in the MSAs with high population growth. For example, in fiscal year 2001, hospitals in MSAs with populations of 2.5 million or more had about 162 hours of diversion (an indicator of crowding),[15] compared with about 9 hours for hospitals in MSAs with populations of less than 1 million. Also, the median number of hours of diversion in fiscal year 2001 for hospitals in MSAs with a high percentage population growth was about five times that for hospitals in MSAs with lower percentage population growth.

Hospitals in the largest MSAs and in MSAs with high population growth that have reported crowding in emergency departments may have difficulty handling a large influx of patients during a potential infectious disease outbreak, especially if this outbreak occurred in the winter months when the incidence of influenza is quite high. For example, public health officials with whom we spoke said that in the event of a large-scale SARS outbreak, entire hospital wards may need to be used as separate SARS isolation facilities. Moreover, certain hospitals within a community may need to be designated as SARS hospitals.

Concluding Observations

Efforts at the state and local level have improved the ability to identify and respond to infectious disease outbreaks and bioterrorism. These improvements have included upgrades to laboratory facilities and communication systems. Hospitals have also begun planning and training efforts to respond to large-scale infectious disease outbreaks. Despite these improvements, gaps in preparedness remain. We found that some disease surveillance systems may be inadequate, that there are shortages of key personnel in some localities, and that most hospital emergency departments across the country have experienced some degree of overcrowding, which could be exacerbated during a disease outbreak.

[14] GAO-03-460.

[15] Diversions occur when hospitals request that en route ambulances bypass their emergency departments and transport patients that would have otherwise been taken to those emergency departments to other medical facilities.

Mr. Chairman, this completes my prepared statement. I would be happy to respond to any questions you or other Members of the Subcommittee may have at this time.

Contact and Staff Acknowledgments

For further information about this testimony, please contact Janet Heinrich at (202) 512-7119. Angela Choy, Krister Friday, Martin T. Gahart, Gay Hee Lee, and Deborah Miller also made key contributions to this statement.

Related GAO Products

Hospital Preparedness: Most Urban Hospitals Have Emergency Plans but Lack Certain Capacities for Bioterrorism Response. GAO-03-924. Washington, D.C.: August 6, 2003.

Severe Acute Respiratory Syndrome: Established Infectious Disease Control Measures Helped Contain Spread, But a Large-Scale Resurgence May Pose Challenges. GAO-03-1058T. Washington, D.C.: July 30, 2003.

Bioterrorism: Information Technology Strategy Could Strengthen Federal Agencies' Abilities to Respond to Public Health Emergencies. GAO-03-139. Washington, D.C.: May 30, 2003.

SARS Outbreak: Improvements to Public Health Capacity are Needed for Responding to Bioterrorism and Emerging Infectious Diseases. GAO-03-769T. Washington, D.C.: May 7, 2003.

Smallpox Vaccination: Implementation of National Program Faces Challenges. GAO-03-578. Washington, D.C.: April 30, 2003.

Infectious Disease Outbreaks: Bioterrorism Preparedness Efforts Have Improved Public Health Response Capacity, but Gaps Remain. GAO-03-654T. Washington, D.C.: April 9, 2003.

Bioterrorism: Preparedness Varied across State and Local Jurisdictions. GAO-03-373. Washington, D.C.: April 7, 2003.

Hospital Emergency Departments: Crowded Conditions Vary among Hospitals and Communities. GAO-03-460. Washington, D.C.: March 14, 2003.

Homeland Security: New Department Could Improve Coordination but Transferring Control of Certain Public Health Programs Raises Concerns. GAO-02-954T. Washington, D.C.: July 16, 2002.

Homeland Security: New Department Could Improve Biomedical R&D Coordination but May Disrupt Dual-Purpose Efforts. GAO-02-924T. Washington, D.C.: July 9, 2002.

Homeland Security: New Department Could Improve Coordination but May Complicate Priority Setting. GAO-02-893T. Washington, D.C.: June 28, 2002.

Homeland Security: New Department Could Improve Coordination but May Complicate Public Health Priority Setting. GAO-02-883T. Washington, D.C.: June 25, 2002.

Bioterrorism: The Centers for Disease Control and Prevention's Role in Public Health Protection. GAO-02-235T. Washington, D.C.: November 15, 2001.

Bioterrorism: Review of Public Health Preparedness Programs. GAO-02-149T. Washington, D.C.: October 10, 2001.

Bioterrorism: Public Health and Medical Preparedness. GAO-02-141T. Washington, D.C.: October 9, 2001.

Bioterrorism: Coordination and Preparedness. GAO-02-129T. Washington, D.C.: October 5, 2001.

Bioterrorism: Federal Research and Preparedness Activities. GAO-01-915. Washington, D.C.: September 28, 2001.

West Nile Virus Outbreak: Lessons for Public Health Preparedness. GAO/HEHS-00-180. Washington, D.C.: September 11, 2000.

Combating Terrorism: Need for Comprehensive Threat and Risk Assessments of Chemical and Biological Attacks. GAO/NSIAD-99-163. Washington, D.C.: September 14, 1999.

Combating Terrorism: Observations on Biological Terrorism and Public Health Initiatives. GAO/T-NSIAD-99-112. Washington, D.C.: March 16, 1999.

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