

Department of Health and Human Services

**OFFICE OF
INSPECTOR GENERAL**

State and Local Bioterrorism Preparedness



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EXECUTIVE SUMMARY

PURPOSE

To assess State and local health departments' capacity to detect and respond to a bioterrorism event.

BACKGROUND

The Centers for Disease Control and Prevention (CDC) has funded State bioterrorism preparedness efforts through cooperative agreements since 1999. More recently, it has worked with State and local health departments to develop performance guidance, called the Core Capacity Project, for bioterrorism preparedness. The CDC asked the Office of Inspector General (OIG) to assess State and local health departments' bioterrorism detection and response capacity using these core capacities, which are performance measures for preparedness.

Although this inspection was initiated prior to the terrorism events of 2001, the data collection was conducted in the wake of those events. When we met with State and local health departments in December 2001 and January 2002, many jurisdictions were in the process of re-evaluating and upgrading their bioterrorism programs.

In conducting this inspection, we selected a purposive sample of 12 States and 36 local health departments (3 within each State). Using the core capacities as benchmarks, we assessed each health department's preparedness.

FINDINGS

The State and local public health infrastructure is under-prepared to detect and respond to bioterrorism

The capacity of a State, county, or city to detect and respond to bioterrorism depends both on the strength of its public health infrastructure and on the ability of its public health department to work with emergency response partners. Our review of 12 State and 36 local health departments identified vulnerabilities in their infrastructure that leave them not fully prepared for a bioterrorism event.

Surveillance and epidemiologic investigation. State and local health departments rely on surveillance systems and epidemiologic investigations to detect and define bioterrorism events. In 3 State and 10 local health departments, communicable disease reports used for surveillance are not always submitted timely or consistently by providers. Further, 9 State and 26 local health departments do not fully validate the reports they

receive and only 4 State and 17 local health departments say they have an active surveillance system in addition to disease reporting. In addition, 3 State and 15 local health departments lack the specialized staff and technology they would need to support epidemiologic investigations during an event; 17 local health departments do not have an epidemiologist on staff.

Identification. States also rely on laboratory testing to detect and define the scope of bioterrorism events. The Laboratory Response Network is designed to link local level A clinical labs with level B labs and the State's level C public health lab. However, it is not fully implemented. Five of 12 States have an incomplete list of level A laboratories, and 7 State laboratories lack support from external level B or C laboratories. In three-quarters of our sample States, at least one respondent reports that their State laboratory was overwhelmed by the many tests requested during recent, relatively small, anthrax events.

Communication. Responding to a bioterrorism event requires communicating with response partners. Five State and 17 local health departments have questionable capacity to communicate on a 24 hour, 7 day a week basis. Also, 9 State and 24 local health departments do not have complete risk communication plans.

Mobilization. Response also involves the mobilization of personnel and supplies. One quarter of State and local health departments acknowledge that they lack the equipment, supplies, and/or trained staff to independently respond to large-scale bioterrorism events. They say they will be dependent on the community, the State, and the National Pharmaceutical Stockpile. However, 5 State and 20 local health departments do not have complete plans for receipt and deployment of the Stockpile. Further, 4 State and 21 local health departments have not tested their response protocols.

Public health interventions. Lastly, responding to bioterrorism requires implementing public health interventions. Four State and 14 local health departments report that they do not have all the laws, rules, and regulations they may need to fully activate and enforce public health interventions that are necessary to control a disease outbreak. These interventions include quarantine, seizure of property, and restriction of travel.

In response to recent terrorism events, virtually all public health departments are strengthening their bioterrorism preparedness programs

Recent events have heightened awareness around bioterrorism preparedness. All State and 32 local health departments we visited have written or are writing a bioterrorism response plan. They have also integrated their preparedness activities with response partners in the community. Seven State and ten local health departments say they have received more decision-maker support for their bioterrorism programs since the events.

Recent funding provides an opportunity to strengthen public health infrastructure, but concerns remain

Since February 2002, CDC funding for bioterrorism preparedness increased from \$66.7 million to \$918 million, and the Health Resources and Services Administration (HRSA) implemented a new \$125 million program for hospital bioterrorism preparedness. Written guidance for these programs appears to address many of the vulnerabilities noted above. However, some issues remain unaddressed. Program guidance gives little or no support for addressing the mental health needs of first responders, victims and their families, and anxious members of the public, such as those seeking unnecessary medical attention. Further, some health departments raise concern about tactical decisions related to response, such as who receives limited equipment and supplies and whether or not first responders should be immunized. Some States also stress the need for sustained Federal funding to develop and maintain the public health infrastructure.

CONCLUSION

The findings in this report show that our public health infrastructure has left us under-prepared to detect and respond to bioterrorism. Not all State and local health departments have sufficient staff, surveillance systems, technology, or laboratory capacity to quickly and accurately identify an attack. Some also lack the plans, partnerships, or authorities to adequately respond. Since the anthrax attacks in the Fall of 2001, health departments have started to reassess their preparedness and the Federal government has substantially increased funding to rebuild public health infrastructures. Based on these findings, we conclude that further work is needed at the Federal, State, and local levels to ensure that our country's public health system is fully prepared to respond to bioterrorism.

RECOMMENDATIONS

First and foremost, CDC should develop a monitoring system to ensure that the bioterrorism preparedness funds are being used as intended. In 2002, State and local health departments will receive \$918 million in cooperative agreement funds to bolster the public health infrastructure and improve their capacity to detect and respond to bioterrorism. Each of these cooperative agreements outlines a plan for reaching these goals. It is essential that CDC closely monitor the progress of State and local health departments in accomplishing the goals set forth in these plans.

The Assistant Secretary for Public Health Emergency Preparedness should work with States to develop strategies that sustain the public health infrastructure subsequent to the current influx of Federal funding. Although there will be a significant increase in Federal support to States, it is essential that infrastructure improvements be maintained in order to protect our nation from the effects of future bioterrorism attacks.

The CDC and the Substance Abuse and Mental Health Services Administration should work together to address community mental health needs in its future guidance to States. Our review of CDC's new program guidance reveals that it does not fully address the mental health components of bioterrorism preparedness. Should a bioterrorism event occur, first responders, victims and their families, and anxious members of the public would likely have significant mental health needs.

The CDC should work with States to help them address tactical decisions related to bioterrorism response. Respondents raise several of these issues, such as deciding which patients would receive limited treatment and immunizing first responders. The CDC should provide technical assistance to States to support them in discussing and planning to deal with these, and potentially other, tactical decisions.

AGENCY COMMENT

The Assistant Secretary for Public Health Emergency Preparedness (ASPHEP), who directs and coordinates the HHS activities related to bioterrorism and other public health emergencies, commented on the draft report on behalf of the pertinent HHS agencies and offices. In general, the ASPHEP concurs with our recommendations. It notes that financial and program monitoring systems are being developed for the cooperative agreements. The ASPHEP also notes that CDC will include mental health needs in future guidance, as well as provide technical assistance to States. Appendix B contains the full text of the comment.

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INTRODUCTION

PURPOSE

To assess State and local health departments' capacity to detect and respond to a bioterrorism event.

BACKGROUND

The Centers for Disease Control and Prevention (CDC) asked the Office of Inspector General (OIG) to assess State and local health departments' bioterrorism preparedness. At that time, CDC was funding State and local health departments through their Bioterrorism Preparedness and Response Cooperative Agreement Program and was participating in the Bioterrorism Preparedness and Response Core Capacity Project 2001. The CDC made this request prior to recent terrorism events.

Bioterrorism

The anthrax events of 2001 highlighted the important role the public health system plays in responding to bioterrorism, that is, the deliberate release of a biological disease agent for the purpose of killing or harming people. Unlike traditional terrorist attacks, a biological attack can be covert and, therefore, unnoticed for days, even weeks. The first responders will be health care providers and the public health system, not traditional emergency personnel. The recent anthrax events caused 18 people to contract the disease, 5 of whom died. The consequences of any future bioterrorism events could be far more widespread, resulting in life-threatening illness on a large-scale that could overwhelm the capacity of the current public health system.

It is the responsibility of State and local health departments to identify and to prepare their communities to respond to a bioterrorism event. They are reliant on both their partnership with each other, as well as their partnerships with other government and private entities. In fact, the National Association of County and City Health Officials (NACCHO) asserts that, at the local level, public health is reliant on the "shared responsibility of many entities, organizations, and interests in the community." These relationships become especially important during a bioterrorism event because public health departments are reliant on assistance from emergency response partners to effectively respond.

The Department's Role in Bioterrorism Preparedness

The Department of Health and Human Services (HHS) has several agencies involved in bioterrorism preparedness. However, the CDC, the Health Resources and Services Administration (HRSA), and the Office of Emergency Response (OER), formerly the Office of Emergency Preparedness, in the Office of the Assistant Secretary for Public Health Emergency Preparedness (ASPHEP) have the primary responsibility to support State and local preparedness efforts. In addition, the newly created ASPHEP directs the Department's efforts to prepare for, protect against, respond to, and recover from all acts of bioterrorism and other public health emergencies that effect the civilian population. It also serves as the focal point within the HHS for these activities.

The CDC is leading the effort to ensure the public health infrastructure is fully prepared to respond to bioterrorism. More specifically, it is leading several bioterrorism preparedness initiatives, including the State and Local Bioterrorism Preparedness and Response Cooperative Agreement Program, the National Pharmaceutical Stockpile, the Health Alert Network, the Laboratory Response Network, and the Bioterrorism Core Capacity Project.

The HRSA began funding State health departments to improve their bioterrorism hospital preparedness programs in February 2002. The purpose of this cooperative agreement program is for States to upgrade hospital preparedness by identifying and implementing preparedness plans for hospitals. The cooperative agreements are available to all 50 States, the District of Columbia, New York City, Los Angeles County, Chicago, and the territories.

The OER is responsible for managing the medical and public health consequences during public health emergencies, including bioterrorism. Specifically, the OER provides start-up funds for a planning process, basic equipment, and a pharmaceutical cache for local and regional emergency response systems through the Metropolitan Medical Response System Program (MMRS) to improve our largest metropolitan areas capacities to provide integrated, unified response to a mass casualty event, including bioterrorism. There are currently 122 municipalities receiving MMRS funding.

CDC's Role in Bioterrorism Preparedness

Bioterrorism Preparedness and Response Cooperative Agreement Program. One of the primary initiatives CDC has undertaken to improve the public health infrastructure's ability to respond to bioterrorism is the Bioterrorism Preparedness and Response Program. This program, directed by the Office of Terrorism Preparedness and Response, is a cooperative agreement program between CDC and each of the 50 States plus the District of Columbia, New York City, Los Angeles, Chicago, and the territories. It is intended to upgrade State and local health department preparedness and response

capabilities relative to bioterrorism. The program started in 1999, but all of the States did not begin participating until 2001. The awards totaled \$66.7 million in FY 2001 and increased to \$918 million in FY 2002. In addition to the funds, CDC provides ongoing technical assistance and planning guidance.

The cooperative agreements are divided into seven focus areas. Areas A through E have been funded since 1999, but few awardees received funding in all five areas until 2002. Focus areas F and G are new in 2002. The seven areas are:

- A. Preparedness Planning and Readiness Assessment** funds the development and implementation of State-specific plans to address public health issues following a biologic or chemical terrorist attack.
- B. Surveillance and Epidemiology Capacity** enables States to enhance, design, or develop systems to rapidly detect unusual disease outbreaks.
- C. Laboratory Capacity - Biologic Agents** enables State and a few city public health laboratories to have the core diagnostic capabilities for bioterrorism agents.
- D. Laboratory Capacity - Chemical Agents** enables States to acquire and maintain state-of-the-art diagnostic capabilities for chemical agents.
- E. Health Alert Network/Communications and Information Technology** assists States and local health departments to develop a communication network (internet or fax) that will be used to broadcast and receive key information, such as public health alerts and distance-learning offerings. Further, it is intended to ensure electronic data exchange and the protection of data, information, and systems.
- F. Communicating Health Risks and Health Information Dissemination** ensures that State and local public health organizations develop an effective risk communications capacity that will provide timely information to the public during a bioterrorism event.
- G. Education and Training** ensures that State and local health agencies have the capacity to (a) assess the training needs of key public health professionals, infectious disease specialists, emergency department personnel, and other health care providers related to preparedness for the detection of and response to bioterrorism, and (b) ensure effective provision of needed education and training to key target audiences.

National Pharmaceutical Stockpile (NPS) Program. This program, run by CDC's National Center for Environmental Health, is a national repository of antibiotics, chemical antidotes, antitoxins, life-support medications, intravenous administration and airway maintenance supplies, and medical/surgical items. The stockpile consists of "12-

hour push packages” and the Vendor Managed Inventory. The “12-hour push packages” consist of preassembled sets of supplies, pharmaceuticals, and medical equipment ready for quick delivery. The Vendor Managed Inventory consists of additional pharmaceuticals and/or medical supplies that can be tailored to a specific event and shipped within 24 to 36 hours.

Health Alert Network (HAN). The Health Alert Network is a nationwide program established to facilitate communication, information, and distance-learning related to health threats, including bioterrorism. When fully established, the network, through a high-speed, continuous, and secure connection to the Internet, will link local health departments to one another as well as to other components of bioterrorism preparedness and response, such as laboratories and State health departments.

Laboratory Response Network (LRN). The CDC is establishing a network that will link laboratories throughout the country to public health laboratories and state-of-the art facilities that can analyze biological agents. The LRN divides laboratories into four levels according to their capacity to test biological and chemical terrorism agents. The CDC laboratory is level D, the highest level in the network. Next are laboratories at levels B and C with the capacity to test for certain biological agents, such as anthrax. Level A will consist of local clinical laboratories that conduct rule-out testing and refer specimens to higher level laboratories. For each level, the network describes laboratory responsibilities, and outlines how to access the State Public Health Laboratory, CDC, and the FBI to refer or report suspected agents.

The Bioterrorism Core Capacity Project

In an effort to further help State and local health departments improve their public health systems’ ability to detect and respond to bioterrorism, the CDC is leading a joint local, State, and Federal effort called the Bioterrorism Preparedness and Response Core Capacity Project 2001 (Core Capacity Project). The primary organizations involved are the National Association of County and City Health Officials (NACCHO) and the Association of State and Territorial Health Officials (ASTHO). The mission of the project is to develop the capacities of State and local public health systems to prepare for and respond to a bioterrorism event. During four working sessions, this group developed a document that is intended to provide guidance on the highest priority capacities.

The Core Capacity Project draft document sets forth five goals for a public health system. These goals are as follows:

1. Surveillance and epidemiologic investigation: The public health system monitors community health status to detect the presence of critical bioterrorism agents and, through epidemiological investigations, characterizes the public health emergency.

2. Identification: The Laboratory Response Network for bioterrorism can rule-out, refer, identify, confirm, and characterize biological threat agents.

3. Communication: The public health system assures that information is collected, analyzed, and communicated effectively among the response community, decision-makers, and the general public.

4. Mobilization: The public health system identifies, coordinates, and deploys public health assets to assure an effective emergency response.

5. Public Health Interventions: The public health system implements emergency health measures to control and contain an outbreak.

METHODOLOGY

We combined three methods for this inspection, including in-person interviews, self-administered questionnaires, and document reviews. We limited our review to 12 States in order to obtain detailed and comprehensive data on State and local bioterrorism programs.

Sample

We selected a purposive sample of 12 States and 3 local health departments in each of these States, for a total of 48 sites. We chose the States based on four criteria:

1) geographic location; 2) population; 3) the amount of funding the State received from 1999 to 2001 through CDC's Bioterrorism Preparedness and Response Cooperative Agreement Program (excluding funding for laboratory capacity for chemical agents); and 4) the relationship between the State and the local health departments (decentralized, centralized, mixed, or shared). In decentralized States, the local government runs the local health department. In centralized States, local health departments function directly under the State's authority. Mixed States have some decentralized localities and some localities are run by the State. In States with a shared system, State and local governments share authority over the local health departments.

The three local health departments we selected in each of the States included: the one serving the capital city, the one serving the highest populated city (unless the capital city is the highest populated city; in that case we chose another populous city), and one in a suburban or rural area. For the purposes of this report, we define local health department as a city, county, regional, or municipal level health department, even in centralized States where these agencies are part of the State department of health.

State Health Department Site Visits

We conducted an on-site interview with State health department officials in each State and discussed their capacity to respond to a bioterrorism event. These interviews were conducted during December 2001 and January 2002. We interviewed various officials responsible for preparedness, such as the State epidemiologist, public health laboratory director, bioterrorism preparedness coordinator, the Health Alert Network director, and in some cases, staff from emergency response agencies. In seven States the director of the department of health was present. We designed the interview questionnaire based on the goals of the Core Capacity Project's guidance. Specifically, we reviewed each State health department's level of bioterrorism preparedness in the following areas: surveillance and epidemiology, identification, communication, mobilization, and intervention.

Local Health Department Site Visits

We conducted an interview with officials in each of the local health departments about their capacity to respond to a bioterrorism event. All but one of these interviews were conducted on-site during the same week as the State health department visit. We interviewed the officials responsible for the public health response to bioterrorism, which generally included the director of public health. We again designed the interview questionnaire based on the Core Capacity Project's guidance to State and local health departments. We asked about the local health department's capacity in each of the following areas: surveillance and epidemiology, identification, communication, mobilization, and intervention.

Core Capacity Self-Assessment

We asked respondents at each State and local health department to complete a self-assessment of their bioterrorism preparedness. All 12 State and 36 local health departments responded between December 2001 and March 2002. The assessment was based on the most detailed level of the Core Capacity Project's guidance. It asked health departments to rate their capacity on 277 specific tasks related to bioterrorism preparedness. For each item, we asked the health departments to indicate if they had full capacity, partial capacity, or no capacity. (See "State and Local Bioterrorism Preparedness: Report Card," OEI-02-01-00552, for more information on the results.)

Review of Bioterrorism Response Plans

We also asked each State and local health department to submit a copy of their bioterrorism emergency response plan, if one existed. We received and reviewed 28 plans. We assessed the plans' overall structure and content. Specifically, we reviewed each plan's organizational chart, response procedures, including plan activation procedures, response partner list, and NPS plan.

LIMITATIONS

There were several limitations to our methodology. First, due to health departments' response to recent terrorism events, we evaluated a system in transition. Bioterrorism preparedness activities are moving swiftly and will have changed from the time of the interviews to the time this report is released. Further, the recently approved increases in funding and new initiatives related to bioterrorism preparedness will undoubtedly change the systems we evaluated. Second, because we selected a purposive sample of 12 States and 36 local health departments, our findings cannot be projected to the entire population of States or local health departments. Third, we did not assess State and local health departments' capacity to respond to chemical attacks or other forms of terrorism, nor did we look at State or local law enforcement agencies' ability to respond to bioterrorism. Finally, the data we collected were self-reported, and we have not independently verified their accuracy.

This inspection was conducted in accordance with the **Quality Standards for Inspections** issued by the President's Council on Integrity and Efficiency.

FINDINGS

Our review of 12 State and 36 local health departments' bioterrorism preparedness is based on in-depth discussions with public health officials, reviews of their emergency response plans, and an analysis of their comprehensive self-assessments. Our review revealed that their public health infrastructure is under-prepared to detect and respond to bioterrorism. However, almost all health departments are currently strengthening their bioterrorism preparedness programs. Recent increases in HHS funding, while not addressing all concerns, do provide an opportunity to strengthen the public health infrastructure. These findings are evidence that further work is needed at the Federal, State, and local level to ensure that our country's public health system is fully prepared to respond to bioterrorism.

State and local public health infrastructure is under-prepared to detect and respond to bioterrorism

The capacity of a State, county, or city to detect and respond to bioterrorism depends both on the strength of its public health infrastructure and on the ability of its public health department to work with emergency response partners. All of the health departments in our sample report vulnerabilities in their public health infrastructure that leave them less than fully prepared for a bioterrorism event. Table 1 (on the following page) lists key vulnerabilities based on the bioterrorism core capacities.

The public health infrastructure's capacity to detect bioterrorism is weak

In order for a health department to effectively detect a bioterrorism event, its infrastructure must include a strong surveillance system that monitors community health in a timely and accurate manner. It must also include sufficient resources to conduct thorough epidemiologic investigations and a robust laboratory capacity that can test for bioterrorism agents.

Surveillance systems are weak. We found that surveillance systems used by State and local health departments to identify and define the scope of bioterrorism events are often weak. These systems rely on data that are not always timely or submitted consistently by providers. A strong surveillance system is particularly important to identify a covert bioterrorism attack, as opposed to the announced anthrax events of 2001.

Table 1
Key Vulnerabilities in State and Local Bioterrorism Preparedness
 (12 State & 36 local health departments)

Surveillance and Epidemiologic Investigation	Surveillance systems are weak: • 3 States and 10 locals volunteer that communicable disease reports are not always submitted or timely • 9 States and 26 locals do not fully validate the completeness or appropriateness of surveillance data • Only 4 States and 17 locals have an active surveillance system, in addition to disease reporting
	Epidemiologic capacity is limited by lack of resources: • 17 local health departments have no epidemiologist on staff • 3 States and 15 locals lack adequate response staff or equipment • 22 locals will rely on State for assistance with investigations
Identification	Laboratory capacity is vulnerable: • Laboratory Response Network not fully implemented ▸ 5 States have an incomplete list of level A labs ▸ No States hold regular meetings with level A labs ▸ In 7 States the State laboratories conduct all level B and C testing • States struggled to meet demand during recent anthrax events ▸ In 9 of 12 States respondents report State Lab was overwhelmed
Communication	Not all necessary communication protocols are in place: • 5 States and 17 locals do not have a complete current roster of 24-hour contact information • 9 States and 24 locals do not have complete risk communication plans
Mobilization	States and locals have limited ability to mobilize response: • 3 States and 9 locals volunteer that they have inadequate resources • 4 States and 21 locals have done no testing of response protocols • 5 States and 20 locals do not have complete plans for using the NPS
Public Health Interventions	States and locals do not have all legal authority they may need: • 4 States and 14 locals do not have all needed laws, rules, regulations • Only 7 States can fully activate and enforce quarantine • Only 5 States can fully activate and enforce the seizure of property • Only 6 States can fully activate and enforce the restriction of travel

Sources: OEI State and Local Health Department Interviews, December 2001 through January 2002 and
 OEI State and Local Health Department Core Capacity Self-Assessment, December 2001 through March 2002

While communicable disease reporting is the most common system that our sample health departments use to monitor community health, this system has several limitations. In general, communicable disease reporting requires physicians and laboratories to report communicable disease cases to either the State or local health department. Although five local health departments use an electronic reporting system, it is more common for local health departments to require health care providers to call, fax, or mail their reports. Respondents in 3 States and 10 local health departments also volunteer that disease reports are not always timely or submitted consistently by providers. Further, 9 State and 26 local health departments do not fully validate the reports they receive by periodically evaluating their completeness or appropriateness. Lastly, some health departments do not appear to have adequate methods to analyze disease reports. In fact, several respondents told us that they only look at reports weekly and a few say they do not have the capacity to do any analysis. For example, one local health department says they cannot do any trend analysis because they do not have access to historical data maintained by the State.

Four State and 17 local health departments we visited have surveillance methods in addition to communicable disease reporting. The majority of these local health departments are in large cities and some receive special funding from CDC. Their active surveillance methods involve collecting and analyzing data from sources such as emergency rooms or 911 calls on a regular basis. For example, several health departments monitor emergency room diversions, since more than one emergency room reaching full capacity may indicate a problem. One health department with no active surveillance reports that it is too costly to implement. Specifically, an official says, “We haven’t had the resources to develop [surveillance] algorithms or technologies.” Active surveillance also requires the cooperation of outside entities, such as hospitals. One health department reports that the only local hospital with the ability to provide surveillance data refused to do so without reimbursement.

Epidemiologic capacity is limited by lack of resources. After identifying an unusual disease outbreak through surveillance, a health department must conduct epidemiologic investigations to determine the incidence and distribution of the outbreak. We found that sample State and local health departments’ ability to conduct these investigations is limited. Many lack the specialized staff or technology they need. In fact, 3 States and 15 local health departments volunteer that they lack adequate staff or equipment.

Of the 36 local health departments we visited, 17 do not have an epidemiologist on staff. Nearly all of the local health departments that do have their own epidemiologist serve large urban areas. The smaller localities that do not employ their own epidemiologist appear to be the most vulnerable. They routinely rely on local public health nurses to investigate disease outbreaks.

Many local health departments, even those with their own epidemiologist, say they may not have enough trained staff or technology to conduct increased numbers of investigations during an event. Seventeen say they would rely on the State to assist their own epidemiologist or cross-trained staff to conduct investigations. Five others say they

would have to rely exclusively on the State to conduct investigations. A few local health departments say having adequate staff for data entry is also a particular concern, especially since specialized epidemiology software packages require specific skills. One local health department faced difficulty in finding enough staff to do data entry for all of their recent anthrax investigations. A respondent from another local health department says, “Data entry personnel is where we are weakest.”

Some State and local health departments have initiatives to strengthen their epidemiologic capacity. In one State, they are planning an epidemiologic interview training class for their staff. Another local health department has developed diagnostic algorithms to assist with these investigations. Further, 12 local health departments have mutual aid agreements with other agencies, such as local universities or other health departments, to assist with epidemiologic investigations during public health emergencies.

Laboratory capacity is vulnerable. The capacity of the laboratory system that State and local health departments rely on to identify bioterrorism agents is limited. This was particularly evident when a number of States could not meet the demand for anthrax testing this past fall. While the CDC has outlined a Laboratory Response Network (LRN) to strengthen the nation’s ability to identify bioterrorism, it is not fully implemented. The LRN divides laboratories into four levels (A, B, C, and D) according to their capacity to test bioterrorism agents.

To begin with, not all of our sample States have identified or communicated with the level A laboratories in their State. These are local clinical laboratories that conduct rule-out testing and if necessary refer specimens to a higher level. Five States have an incomplete list of level A laboratories. One State respondent reports that they are still “working with CDC to identify potential A level labs and approaching them.” Another State reports, “No labs are currently level A.” Further, States are not consistently communicating with level A laboratories. None conduct regular meetings with level A laboratories and only about half offer formal training. One State relies on a secure website to communicate with level A laboratories about protocols. They report there is “no assurance [level A laboratories] are complying with these protocols.”

In seven of the sample States, State laboratories do not have support from an external B or C level laboratory. Level B and C laboratories are generally State or city public health laboratories that have the capacity to test for certain bioterrorism agents, such as anthrax. In the States without level B and C support, the State public health laboratory is the only laboratory with the ability to conduct higher level testing. For example, one respondent reports that the lack of a public health laboratory in a large metropolitan area “greatly hampers our response to a bioterrorism event.” A large city also says that they are “completely dependent on the State lab.” They report difficulty adding level B laboratories to their networks. A few say local private laboratories refuse to perform bioterrorism testing. For example, one respondent says “the (private) laboratory we outsourced our other clinical lab tests to said no (to our request to test for bioterrorism.)”

A few others say that their laboratories are willing to upgrade to level B but have been unable to because of a lack of funding or reagents.

Most States struggled to meet the demand for laboratory testing during the recent anthrax events and scares. In 9 of our 12 sample States, at least one respondent volunteers that the State laboratory was overwhelmed by the testing. In fact, three States and one large local health department sent anthrax specimens out of the State to be tested because of a backlog in their own laboratory. Further, a State respondent reports, “During anthrax we were backlogged. The counties wanted to send (their specimens) elsewhere.” Some health departments had to stop other public health testing in order to conduct their anthrax testing. A respondent at one State says, “Right now, we do all the testing, including rule-out. We had to divert normal testing, such as HIV and e-coli, during the anthrax crisis.” A different State explains, “The number of people in labs dedicated to bioterrorism is limited. Although people are cross-trained, it doesn’t scale up rapidly. The rest of the work was put on hold.”

Several health departments we interviewed discovered other vulnerabilities in their own laboratory procedures while responding to the anthrax testing. First, eight local respondents mention that there was some confusion regarding the chain of custody of specimens. One respondent says, “We didn’t know where [the specimens] were collected from or who needed to be called.” Second, others report experiencing delays reporting the results of anthrax testing. Another State says that reporting results “was a concern. Clients complained that we didn’t contact them.” Third, a few health departments mention that working with the Federal Bureau of Investigations (FBI) and law enforcement was not always a smooth process. One respondent states, “The FBI was hesitant to share information, even though we were told that public health was the first priority. In practice, this was not the case.” Lastly, several respondents report that the environmental samples submitted during the events needed to be handled differently from human specimens. As one explains, environmental specimens require a higher safety level during testing and are often more difficult to label than human specimens.

The public health system’s capacity to respond to bioterrorism is limited

Once a health department has identified a disease outbreak, it must take additional steps to effectively respond. Specifically, the health department must 1) continuously communicate with response partners and the public, 2) identify and mobilize the local, State, and national resources available to them, and 3) provide the public health measures necessary to control the spread of the disease, such as giving vaccinations.

Not all necessary communication protocols are in place. Although all State and local health departments appear to have some ability to communicate with their emergency response partners during a bioterrorism event, the current system is vulnerable. The majority have redundant communication equipment, such as radios, pagers, and cell phones that will enable them to communicate with response partners during an emergency. Although all but one State uses the Health Alert Network (HAN) to send

alerts to local health departments, only half of the States have a HAN that allows two-way communication. Further, several State health departments are concerned that not all of their local health departments have the capacity to receive and review communications on a 24 hour, 7 day a week basis. In fact, 5 State and 17 local health departments do not have a complete call-down roster with current 24-hour contact information.

Accurately and effectively communicating with the public and media is crucial during a bioterrorism event. Public health departments use “risk communication” to prevent inaccurate information from being released to the public, therefore preventing a potentially dangerous public response. In addition, appropriate risk communication can foster the public trust that may be necessary to effectively control the spread of disease. Although 9 State and 24 local health departments do not have complete written risk communication plans, most of the health departments report they expect to follow the basic principles of risk communication. These include having a central point of contact, such as a public information officer, and conveying a single consistent message across response partners.

States and locals have limited ability to mobilize response. State and local health departments expressed concerns about their ability to identify, coordinate, and deploy public health assets to assure an effective emergency response. In particular, 3 State and 9 local health departments say they will not have the trained staff, equipment, and supplies they need to respond to a bioterrorism emergency; others say sustaining a response to a large-scale or long term event would be difficult. Further, 4 State and 21 local health departments report that they have not tested their response protocols. A few health departments volunteer that they would need to rely on Federal support for an adequate response. One local respondent says, “No one has the ability to respond to a bioterrorism event. We need to get the rapid response from the national level.”

To compensate for these limitations, health departments are taking several steps. Four State and six local health departments plan to rely on cross-trained staff. Six State and 14 local health departments will rely on resources and volunteers from the community or response partners. However, only 3 State and 14 local health departments have conducted training for volunteers. In addition, two State and eight local health departments have begun stockpiling a limited number of supplies and pharmaceuticals. Other initiatives include surveying the community to identify available resources and forming mutual aid agreements with potential public health response partners or other organizations within the community.

While State health departments are expecting to receive Federal aid in the form of the National Pharmaceutical Stockpile (NPS), they do not all have plans for handling the NPS when it arrives. The NPS push package contains equipment, supplies, and pharmaceuticals that can be delivered within the first few hours of an event. However, 5 State and 20 local health departments we interviewed do not have complete plans for receiving, organizing, repackaging, securing, and distributing the NPS.

States and locals do not have all legal authority they may need. To effectively respond to bioterrorism, a health department must have the legal authority to implement the necessary public health measures to control the spread of disease. Four State and 14 local health departments report not having all of the laws, rules, and regulations that clearly specify the authorities they may need to activate and enforce emergency public health and infection control measures. These measures, or interventions, could include closure or quarantine of public places, isolation of infected persons, restrictions on travel, or seizure of personal belongings or property. Further, some of the departments say they may not have the capacity to enforce their legal authority. For example, only seven States have the capacity to fully activate and enforce quarantine. Only five States report that they can fully activate and enforce the seizure of personal property and only six States can fully restrict travel. Several respondents say they need to rely on local law enforcement to implement these public health measures. As one explains, “[The] relationship between public health and law enforcement is key to moving effectively and efficiently.”

In response to recent terrorism events, virtually all public health departments are strengthening their bioterrorism preparedness programs

Recent events have heightened awareness around bioterrorism preparedness. In fact, all sample States and 32 of the 36 local public health departments have written or are currently writing a bioterrorism response plan. A review of these plans reveals that most are integrated into a wider emergency management plan. While they typically include an organizational chart showing the emergency command structure, a list of response partners, and an outline or summary of emergency response procedures, their level of detail varies. Some are more comprehensive, such as one plan that includes a detailed algorithm for responding to bioterrorism and discusses the legal authorities for public health interventions. Conversely, other plans are very broad, with few specific bioterrorism features.

Four local health departments we interviewed do not have a plan and are not currently writing one. One respondent says they “need guidance from the Federal” government about what to write. Another says, “Planning for bioterrorism is not a priority for this health department.”

The local health departments we visited have begun to integrate their public health preparedness activities with response partners in their community. These partners include traditional emergency response partners, such as local law enforcement, hospitals, health care providers and associations, laboratories, and fire departments. Health departments have also increasingly reached out to form relationships with other entities, such as the Red Cross, schools, medical examiners, and amateur radio operators. Most health departments are part of terrorism taskforces, workgroups, or committees and some also have formal mutual aid agreements.

Seven State and ten local health departments also say they have received more support from decision-makers and other stakeholders for their bioterrorism preparedness programs since the recent terrorism events. Several report new staff positions were funded to integrate bioterrorism preparedness with other activities. Respondents in 5 States and 12 local health departments report that political leaders have been attending emergency response planning meetings or have started their own taskforce. Three local health departments have also received more funding for bioterrorism.

Recent funding provides an opportunity to strengthen public health, but concerns remain

Guidance from recent funding requires States to address most vulnerabilities

In 2002, the Department significantly increased funding to State and local health departments through two cooperative agreement programs. First, CDC's Bioterrorism Preparedness and Response Cooperative Agreement Program has increased from \$66.7 million in 2001 to \$918 million in 2002. Second, in February 2002, HRSA announced a new \$125 million cooperative agreement program with State health departments to upgrade hospital preparedness.

Detection. Recent funding appears to target a number of the weaknesses in disease surveillance and epidemiology. As noted earlier, health departments are relying on communicable disease reports that are not always timely or submitted consistently by providers. Further, almost half of the local health departments do not have an epidemiologist to investigate these reports. As shown in Appendix A, CDC's cooperative agreement guidance provides State health departments with opportunity to improve their capacity to detect bioterrorism by strengthening their disease reporting system and requiring one epidemiologist in each Metropolitan Statistical Area with a population over 500,000.

Recent funding also addresses several weaknesses in laboratory capacity. As we noted above, about half of the States have not identified all level A clinical laboratories and some have concerns about their relationship with law enforcement. As discussed in Appendix A, CDC's new cooperative agreement funding gives State health departments an opportunity to improve these weaknesses by writing plans and procedures that include all laboratories in their jurisdiction and by improving relations with the FBI and level A laboratories.

Response. Recent funding also presents several opportunities for State health departments to improve their response and communication capacity, as illustrated in Appendix A. First, health departments will be funded to plan for the use of the NPS. Second, States will enhance their communication capacity by expanding the Health Alert Network, developing a risk communication plan, and helping local health departments to have 24 hours per day, 7 days per week communication systems. Third, States are

required to examine their statutes, regulations, and ordinances to determine whether they provide authority to perform emergency public health measures. Lastly, recent funding also requires States to improve their ability to protect the personal safety of responders, including health care providers. This concern has been raised by several of our respondents, especially regarding vaccinating first responders.

Some concerns remain

Some respondents raise concerns that go beyond the scope of recent funding. To begin with, some health departments noted that sustained Federal funding for both bioterrorism preparedness and the public health infrastructure is critical. For example, some respondents believe they cannot hire and maintain professional staff, such as epidemiologists and laboratory technicians, without a commitment of sustained funding. Others comment that bioterrorism preparedness initiatives will be less effective without the support of a strong public health infrastructure. For example, one respondent states, “Money to do specific things such as laboratory capacity won’t help us respond without public health nurses.”

The mental health component of response is not adequately addressed by CDC’s recent funding guidance. One respondent, stressing the importance of mental health services, says, “Mental health services should be better prioritized.” Several respondents believe that the public, first responders, and victims and their families will have significant mental health needs during a bioterrorism event. Further, anxious members of the public seeking unnecessary medical attention could quickly overwhelm the health care system during a bioterrorism event. Although HRSA funding guidance discusses mental health, the CDC cooperative agreement guidance does not address mental health issues. For example, while CDC requires States to establish a bioterrorism advisory committee with representation from other State and local agencies, it does not identify mental health agencies as required members.

Additionally, some health departments report that difficult tactical decisions may complicate their ability to respond to bioterrorism. Several officials note that during a large-scale event resources would be limited, meaning that difficult ethical decisions will need to be made, such as deciding which patients receive treatment and which do not. For instance, one respondent is concerned that there are only a small number of ventilators in her county. If there were ever a smallpox outbreak, she volunteers, someone would need to decide which patients were given the ventilators and which were denied or perhaps taken off their equipment. At least one health department is beginning to address these difficult issues by initiating a series of bioethical seminars for its staff.

Lastly, we found that hospital laboratories can play an important role in the laboratory response system. Although HRSA’s cooperative agreement addresses hospital preparedness and capacity, it does not currently address the role and capacity of hospital-based laboratories in States’ Laboratory Response Networks.

CONCLUSION

The findings in this report show that our public health infrastructure has left us under-prepared to detect and respond to bioterrorism. Not all State and local health departments have sufficient staff, surveillance systems, technology, or laboratory capacity to quickly and accurately identify an attack. Some also lack the plans, partnerships, or authorities to adequately respond. Since the anthrax attacks in the Fall of 2001, health departments have started to reassess their preparedness and the federal government has substantially increased funding to rebuild public health infrastructures. Based on these findings, we conclude that further work is needed at the Federal, State, and local levels to ensure that our country's public health system is fully prepared to respond to bioterrorism.

RECOMMENDATIONS

First and foremost, CDC should develop a monitoring system to ensure that the bioterrorism preparedness funds are being used as intended. In 2002, State and local health departments will receive \$918 million in cooperative agreement funds to bolster the public health infrastructure and improve their capacity to detect and respond to bioterrorism. Each of these cooperative agreements outlines a plan for reaching these goals. It is essential that CDC closely monitor the progress of State and local health departments in accomplishing the goals set forth in these plans.

The Assistant Secretary for Public Health Emergency Preparedness should work with States to develop strategies that sustain the public health infrastructure subsequent to the current influx of Federal funding. Although there will be a significant increase in Federal support to States, it is essential that infrastructure improvements be maintained in order to protect our nation from the effects of future bioterrorism attacks.

The CDC and the Substance Abuse and Mental Health Services Administration should work together to address community mental health needs in its future guidance to States. Our review of CDC's new program guidance reveals that it does not fully address the mental health components of bioterrorism preparedness. Should a bioterrorism event occur, first responders, victims and their families, and anxious members of the public would likely have significant mental health needs.

The CDC should work with States to help them address tactical decisions related to bioterrorism response. Respondents raise several of these issues, such as deciding which patients would receive limited treatment and immunizing first responders. The CDC should provide technical assistance to States to support them in discussing and planning to deal with these, and potentially other, tactical decisions.

AGENCY COMMENT

The Assistant Secretary for Public Health Emergency Preparedness (ASPHEP), who directs and coordinates the HHS activities related to bioterrorism and other public health emergencies, commented on the draft report on behalf of the pertinent HHS agencies and offices. In general, the ASPHEP concurs with our recommendations. It notes that financial and program monitoring systems are being developed for the cooperative agreements. The ASPHEP also notes that CDC will include mental health needs in future guidance, as well as provide technical assistance to States. Appendix B contains the full text of the comment.

**2002 CDC and HRSA Cooperative Agreement Guidance
Requires States to Address Key Vulnerabilities**

Area of Vulnerability	Guidance Addressing Key Vulnerabilities
Surveillance and Epidemiologic Vulnerabilities	• States must have a “highly functioning, mandatory reportable disease surveillance system” with timely reporting by providers and laboratories. • States must prepare a timeline for developing a system to receive and evaluate these reports on a 24/7 basis. • States should consider providing education for laboratories and providers about reporting requirements. • States should pursue active surveillance of outside data sources after fulfilling the basis capacities. • States must write a plan to provide one epidemiologist for each Metropolitan Statistical Area with a population greater than 500,000.
Identification Vulnerabilities	• States must create an integrated response plan (that includes results reporting) for laboratories within their jurisdiction. • States must develop operational plans and protocols that include transporting specimens, training of personnel, triage procedures for prioritizing intake and testing of specimens. • States must establish operational relationships with local Hazardous Material (HAZMAT) teams, first responders, and the FBI. • States must prepare a timeline for “ensuring effective working relationships and communication between level A (clinical) laboratories and higher level laboratories.”

Continued

Communication Vulnerabilities	• States must prepare a timeline for a plan that ensures 90 percent of the population is covered by the Health Alert Network. • States must develop an interim plan for risk communication and information dissemination to the public. • States must work with local health departments to ensure that they establish and maintain a system for 24/7 notification.
Mobilization Vulnerabilities	• States must develop an interim plan to receive and manage items from the National Pharmaceutical Stockpile and other sources (and identify personnel to be trained for these functions).
Public Health Interventions Vulnerabilities	• States must prepare a timeline for assessment of statutes, regulations, and ordinances within the state that provide for executing emergency public health measures. • States must develop and expand their capacity to address worker health and safety issues related to bioterrorism, with a primary focus on protection of emergency response workers, remediation workers, and exposed occupational groups. • States should assess the need for protection of clinicians (vaccination, antibiotic prophylaxis, personal protective equipment, education) to ensure their availability in an epidemic.

Agency Comment

In this appendix, we present in full the comment from the Assistant Secretary for Public Health Emergency Preparedness.



DEPARTMENT OF HEALTH & HUMAN SERVICES

Office of the Secretary

NOV 22 2002

Office of the Assistant Secretary for
Public Health Emergency Preparedness
Washington, D.C. 20201

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TO: Janet Rehnquist
Inspector General, HHS

FROM: Jerome M. Hauck *Jerome M. Hauck*
Acting Assistant Secretary for Public Health Emergency
Preparedness

SUBJECT: CDC Comments to the OIG Draft Report on State and Local Health
Departments' Capacity to Detect and Respond to a Bioterrorism
(OEI-02-01-00550)

On behalf of the pertinent HHS agencies and offices, the Office of the Assistant Secretary for Public Health Emergency Preparedness (OASPHPEP) is pleased to respond to the report by the Office of Evaluation and Inspection, Office of the Inspector General (OEI/OIG) on the capacity of state and local health departments to detect and respond to a bioterrorism event (OIG-02-01-00550).

The report is timely, coming as it does in the wake of the unprecedented increase in public health preparedness funding that followed the attack on the World Trade Center on September 11, 2001 and the subsequent nefarious mail-borne distribution of spores of *Bacillus anthracis*, the microbe that causes anthrax. In response to these events, the Administration and Congress determined that it was imperative to upgrade our Nation's public health infrastructure. In particular, in Fiscal Year (FY) 2002, the Centers for Disease Control and Prevention (CDC) awarded a total of \$918 million in cooperative agreements with all 50 states, the District of Columbia, the 3 largest metropolitan areas (Los Angeles County, New York City, and Chicago), and the 5 U. S. Territories. This funding constituted a more than 20-fold increase over the annual level of HHS funding for similar purposes during the period FY 1999-2001. Because your report focuses primarily on the bioterrorism-relevant capabilities of state and local health departments just prior to the FY 2002 awards, its findings provide a baseline from which to track the impact of this unprecedented upsurge in funding. Moreover, its recommendations are straightforward, practical, and consistent with steps that HHS is taking to enhance preparedness for bioterrorism and other public health emergencies.

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We offer the following specific comments regarding the recommendations:

1. Financial and Program Monitoring. We agree that financial and program-monitoring systems are needed to help ensure that the states and other recipients use the funds as intended. CDC has initiated a formal accounting review that specifically links expenditures with each of the program focus areas, and OASPHEP and CDC look forward to the availability of the audit guide that the OIG is developing. Further, the 14 "critical benchmarks" featured in the guidance for the FY 2002 awards provide a framework for assessing progress during the first budget period, and CDC has initiated an evaluation design to specify longer-term performance measures for each of the focus areas.
2. Sustaining public health infrastructure. This recommendation should be directed toward the Assistant Secretary for Public Health Emergency Preparedness (ASPHEP), a new position authorized by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. We concur with the OIG's assessment of the criticality of health infrastructure improvements. On behalf of the Secretary of Health and Human Services, the ASPHEP directs and coordinates HHS activities related to bioterrorism and other public health emergencies. Finding ways to help ensure sustained impact from the current funding is a high priority for HHS and its state partners.
3. Community mental health needs. We agree that CDC should work more closely with the Substance Abuse and Mental Health Services Administration (SAMSHA) to address community mental health needs. We will address this explicitly in the guidance for the CDC cooperative agreements for FY 2003.
4. Assisting states with tactical decisions. The states face formidable challenges in preparing for and responding to bioterrorism and other public health emergencies. Two prominent examples are large-scale emergency immunization programs and management and distribution of materiel from the National Pharmaceutical Stockpile. We agree that HHS should provide guidance and other technical assistance relative to such matters. This is a major and growing aspect of CDC activities.

Thank you again for the opportunity to respond on behalf of the Department to your report and its specific recommendations.

ACKNOWLEDGMENTS

This report was prepared in New York under the direction of John I. Molnar, Regional Inspector General for Evaluation and Inspections, and Jodi D. Nudelman, Assistant Regional Inspector General. Other principal Office of Evaluation and Inspections staff who contributed include:

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