Executive Summary

Public health threats are inevitable. Being prepared for these threats can save lives and protect the health and safety of the public and emergency responders. The Centers for Disease Control and Prevention (CDC) works to support public health preparedness for all hazards, including natural, biological, chemical, radiological, and nuclear events. This work falls under one of the agency's overarching health protection goals: "People prepared for emerging health threats - people in all communities will be protected from infectious, occupational, environmental, and terrorist threats." CDC has established nine preparedness goals to strategically direct resources towards achieving this overarching goal.

The events of September 11, 2001, and the subsequent anthrax attacks both highlighted the importance of public health during emergencies and showed weaknesses in public health's ability to respond during a potential crisis. In 2002, Congress authorized funding for the Public Health Emergency Preparedness cooperative agreement (hereafter referred to as the cooperative agreement) to support preparedness nationwide in state, local, tribal, and territorial public health departments. As of 2007, the cooperative agreement has provided more than $5 billion to these public health departments.

CDC administers the cooperative agreement and provides technical assistance to public health departments. This report outlines progress and challenges. It also describes how CDC and its partners are working to address these challenges.

Progress continues. With support from the cooperative agreement, public health departments have improved their ability to respond to emergencies.

Public health departments can better detect and investigate diseases because of improvements in the public health workforce and in data collection and reporting systems.

- The number of epidemiologists in public health departments working in emergency response has doubled from 115 in 2001 to 232 in 2006.* Epidemiologists detect and investigate health threats and disease patterns and work to minimize the negative effects of a health threat in a community.
- The number of users for the Epidemic Information Exchange *(Epi-X)*, a secure CDC-based communications system that helps track disease outbreaks, has increased to 4,646 in 2006, up from 890 in 2001. Users are primarily from state and local health departments (75%).
- All state public health departments now can receive and evaluate reports of urgent health threats 24/7/365, whereas in 1999 only 12 could do so. Previously, it was often difficult for clinicians to reach a public health professional after normal work hours.

* For 38 states and the District of Columbia (DC) responding to Council of State and Territorial Epidemiologists (CSTE) surveys.

Public health laboratories have increased capability to test for biological and chemical threats and to communicate information.

- The number of state and local public health laboratories able to detect biological agents has increased to 110 in 2007, from 83 in 2002.
- The number of state and local public health laboratories able to detect chemical agents has increased to 47, from 0 in 2001.
- All states now have public health laboratories that can quickly communicate with clinical laboratories. In 2001, only 20 states reported having public health laboratories with this capability. Once a threat is confirmed in one laboratory, other laboratories need to be quickly alerted since they might receive related case samples (indicating that the threat is spreading).
- More than twice the number of state public health laboratories are conducting exercises to test their ability to handle, confirm, and report results for chemical agents (from 16 in 2003 to 38 in 2006).

Public health departments have developed response plans, implemented a formalized command structure, and conducted exercises. Such activities were rare prior to 2001.

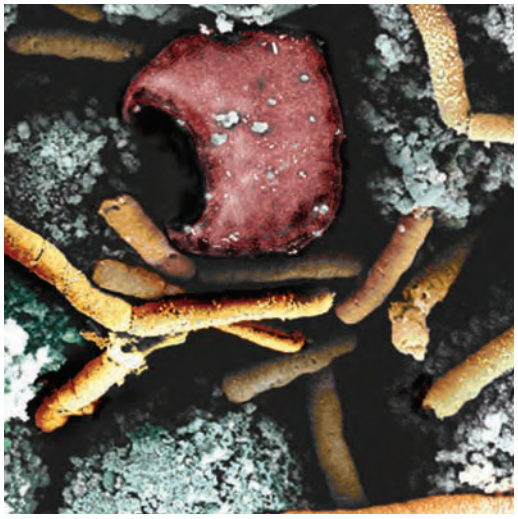
- All states now have plans to receive, store, and distribute the Strategic National Stockpile (SNS), a national repository of antibiotics, other life-saving medications, and medical supplies.
- Seventy-three percent of states reviewed have satisfactorily documented their SNS planning efforts.
- In 2005, public health departments in 50 states and DC trained public health professionals about their roles and responsibilities during an emergency as outlined by the Incident Command System, while in 1999 only 14 did so.
- All states now participate in the Health Alert Network, which allows for the rapid exchange of critical public health information.

Challenges remain. Building on progress in public health preparedness will require ongoing commitment.

- Public health departments report difficulties in recruiting and retaining qualified epidemiologists, according to a 2006 CSTE survey.
- Disease surveillance systems need to be strengthened. In 2007, 16 states did not report any plans to electronically exchange health data with regional health information organizations (networks of healthcare provider organizations that allow the electronic sharing of health information among members).
- To facilitate surveillance, public health departments need to ensure an appropriate legal framework before a disaster occurs; otherwise, states may be unable to share critical public health information with other jurisdictions.

- The public health laboratory workforce needs improvement. Thirty-one state public health laboratories reported difficulty recruiting qualified laboratory scientists, and 39 state public health laboratories reported needing additional staff to perform polymerase chain reaction, a rapid DNA testing technique to quickly identify bioterrorism agents, according to a 2007 Association of Public Health Laboratories survey.
- Public health laboratories need to increase the use of advanced technology and broaden testing abilities, including radiological testing. Currently, no state public health laboratory can rapidly identify priority radioactive materials in clinical samples.
- Public health departments need to sustain a system of all-hazards planning, training, exercising, and improving. This system should be ready to help at-risk populations, such as the elderly and others who may need help controlling chronic diseases.
- Public health and other response agencies need interoperable emergency communication systems. In 2007, the Department of Homeland Security reported that many cities and metropolitan areas have established multi-agency communications, but more progress is needed to expand interoperable communication across jurisdictions and levels of government.

Moving forward. CDC is working with state and local public health departments on initiatives that include:



- Increasing the use of electronic health data for preparedness and response by networking surveillance systems and using real-time data;
- Expanding laboratory testing;
- Establishing commercial partnerships to supply needed medicines to at-risk populations during an emergency;
- Developing and evaluating a core curriculum for preparedness through the Centers for Public Health Preparedness, a national network of academic institutions with a common focus on public health preparedness;
- Improving legal preparedness by helping states and other jurisdictions implement public health mutual aid agreements, which enable sharing of supplies, equipment, personnel, and information during emergencies;
- Exercising public health systems to continuously improve capability and demonstrate readiness; and
- Collaborating with partners to develop accreditation programs for state and local public health preparedness.

Achieving the overarching goal, "people prepared for emerging health threats," is critical to the health and safety of our communities. This report represents CDC's commitment to sharing information on a program that contributes to this goal.