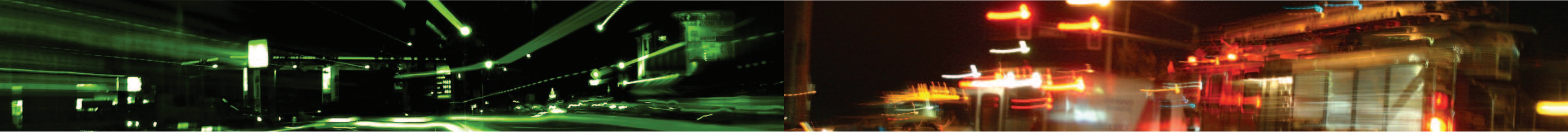


Public Health Emergency Preparedness



SIX YEARS OF ACHIEVEMENT



For more information about the Public Health Emergency Preparedness (PHEP) Cooperative Agreement, please see the CDC publication *Public Health Preparedness: Mobilizing State by State*, available online at www.emergency.cdc.gov/publications/feb08phprep. This report highlights the progress that has been made in state and local preparedness and response and identifies preparedness challenges facing public health departments.

PUBLIC HEALTH EMERGENCY PREPAREDNESS: SIX YEARS OF ACHIEVEMENT

Since the 2001 anthrax and 9/11 terrorist attacks, the United States has developed a much more robust and effective public health infrastructure, with many measurable accomplishments at the state, territorial and local levels. These enhancements have improved not only public health emergency preparedness, but the daily capacity of state and local agencies to monitor and respond to more routine infectious disease, environmental and injury-related concerns.

America is now more prepared than ever. State, local, territorial, tribal and federal entities as well as partners in healthcare and first responder agencies have pooled their resources and created partnerships to strengthen the public health preparedness infrastructure and apply lessons learned. By building more effective, more integrated communications and information systems, the public health community has increased its capacity and capability to detect dis-

Organizations have enhanced their ability to execute complex projects, such as the mass distribution of medicines. Yet to maintain and build upon progress, much work remains.

eases more rapidly and, in turn, strengthen its response to health emergencies. Health agencies have enhanced their ability to meet the expected challenges of mobilizing quickly to provide preventive medications and vaccines during a large-scale infectious disease disaster, with detailed planning and exercising of plans for the mass distribution of medicines. Yet to maintain and build upon our progress, much work remains.

Uniting public health players, including agencies at the state and local levels, the Public Health Emergency Preparedness (PHEP) Program is a key component of the Centers for Disease Control and Prevention's (CDC) response to the 9/11 and anthrax incidents in the fall of 2001. To take action against an expanded scope of threats, the

CDC allocated approximately \$4.9 billion in overall base funding to this cooperative agreement for public health emergency preparedness from FY 2002 through FY 2007.

While the CDC continues to establish and refine its own performance measurement criteria for initiatives funded and administered through the PHEP Cooperative Agreement, the PHEP Partners Assessment provides an interim snapshot of progress. Using data collected as recently as February 2008, much of it correlated with baseline figures from 2002 from the four PHEP Partners Workgroup entities, this report details changes marked by PHEP participants since the program's inception.

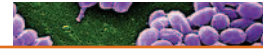


The PHEP Cooperative Agreement funds all 50 states, four metropolitan areas, five territories and three freely associated states. Within each funded jurisdiction, public health departments at the state, local, tribal and/or territorial level work together to improve preparedness. These jurisdictions are also funded by the Department of Health and Human Services, Office of Assistant Secretary for Preparedness and Response, through the Hospital Preparedness Program. This program is administered through state and territorial health agencies to enhance the ability of hospitals and healthcare systems to prepare for and respond to bioterrorism and other public health emergencies.

ABOUT THE PHEP PARTNERS WORKGROUP

Interagency coordination is key to strengthening the state and local public health infrastructure and has been core to the PHEP Program from the beginning. The CDC administers and funds the program, which is implemented by state and local health agencies. These agencies are represented by the Association of State and Territorial Health Officials (ASTHO) and the National Association of County and City Health Officials (NACCHO) respectively. Key components of the program are initiatives to strengthen public health laboratories and epidemiology programs. These health agency programs are represented by the Association of Public Health Laboratories (APHL) and the Council of State and Territorial Epidemiologists (CSTE).

To provide interim evaluation and data, representatives from state and local health agencies formed a Public Health Emergency Preparedness Partners Workgroup composed of members from ASTHO, APHL, CSTE and NACCHO. Each association surveyed its respective memberships on the state of the preparedness program as of December 31, 2007, with the exception of APHL, which surveyed its state public health laboratory membership for the time period of August 31, 2006 to August 30, 2007. Data from these surveys will be highlighted in this report.



After 2001, state and local public health departments asked themselves what they needed in order to respond to new and heightened threats. Among the priorities were improved technology for receiving and monitoring disease reports, technology to notify and communicate with stakeholders, personnel dedicated to planning and responding to emergencies, and improved systems to rapidly distribute medications to the public. All of these would have to be supported by a robust workforce and continual training.

Though there have been significant improvements since the inception of the PHEP Cooperative Agreement program,

The PHEP Partners Workgroup identified the need for an interim set of indicators to assist all partners in measuring progress and guiding future program development and the allocation of resources to address the most pressing preparedness needs.

notable challenges still persist. Limitations in time, funding and staffing have presented difficulties for program planning and execution. Workforce training and development have been ongoing needs, as have equipment and supply acquisition. However, as this report will reveal, these challenges have not hindered remarkable progress toward the development of a robust public health infrastructure. This progress can be seen in the all-hazards health emergency re-

sponse plans that have now been developed by every state and updated as recently as 2007 in 68 percent of states.

The PHEP Partners Workgroup identified the need for an interim set of indicators to assist all partners in measuring progress and guiding future program development and the allocation of resources to address the most pressing preparedness needs. The indicators were designed to show the progress in developing public health preparedness infrastructure since 2002, quantify core ongoing public health preparedness needs and form a basis for recommendations for future efforts. Each organization surveyed its respective membership to collect data on key public health preparedness measures. Organizations then analyzed and compiled data to develop key findings and compare them to data from 2002 where possible.

The following summary of the PHEP Partners Assessment highlights accomplishments and challenges since 2002 in the following areas: preparedness planning, evaluation and improvement; disease detection and investigation; and response and recovery. Unless otherwise cited, data and percentages referenced in this report were obtained from this PHEP Partners Assessment.

Response rates: ASTHO: 50 states, three directly funded cities and DC; 98% response rate. APHL: 50 states and DC; 100% response rate. CSTE: 50 states, DC, New York City and four U.S. territories; 84% response rate. NACCHO: 485 local health departments representing 47 states; 54% response rate.

WHAT IS PUBLIC HEALTH EMERGENCY PREPAREDNESS?



As described by an expert panel convened by the RAND Corporation, public health emergency preparedness is the “capability of the public health and healthcare systems, communities and individuals to prevent, protect against, quickly respond to and recover from health emergencies, particularly those whose scale, timing or unpredictability threatens to overwhelm routine capabilities. Preparedness

involves a coordinated and continuous process of planning and implementation that relies on measuring performance and taking corrective action.” Public health has historically included preventive medicine, health education, control of communicable diseases, sanitation and monitoring of environmental hazards.

Since 2001, the already robust mission of the United States public health system expanded to respond to an even broader range of events, often referred to as “all-hazards.” These all-hazards activities include biological, chemical, radiological and nuclear terrorism; emerging and naturally occurring infectious disease outbreaks; natural disasters; and accidents.

In today’s world, the essential objectives of effective public health emergency preparedness include, among other things: continual testing and updating of plans; collaboration among jurisdictions and organizations; communications; adequate resources; surveillance and laboratory testing; and recruiting, training and retention of the public health workforce.

Source: Am J Public Health. 2007 Apr 97 Suppl 1:S9-11. Epub 2007 Apr 5. “Conceptualizing and defining public health emergency preparedness.” (Authors) Nelson C, Lurie N, Wasserman J, Zakowski S.



By 2007, PHEP Partner entities reported a dramatic increase in the number, comprehensiveness and integration of public health preparedness plans; they had generated an emergency management culture built on information-sharing and workforce development.

As threats such as pandemic influenza persist and the complexities of emergency response increase, exercises and testing continue to increase at both the state and local levels. Gaps and challenges moving forward include further integrating programs, including all partners in exercises, evaluating and improving plans on a continual basis, and cultivating more trained professionals.

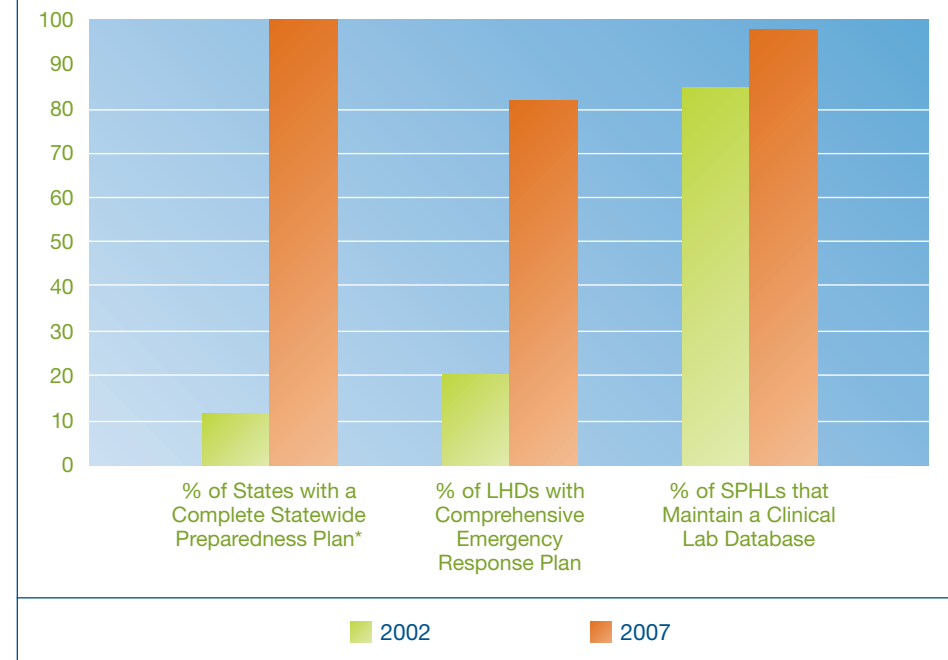
Over the past six years, PHEP-funded initiatives have significantly increased the number of all-hazards emergency response plans in place at state and local public health departments. In 2007, all states were equipped with all-hazards plans.

Achievements

Over the past six years, PHEP-funded initiatives have significantly increased the number of all-hazards emergency response plans in place at state and local public health departments. In 2002, such plans were not the norm, with coverage as low as 11 percent for “complete statewide pre-

Rallying Resources:

By 2007, all states had adopted all-hazards emergency response plans, the majority of local health departments (LHDs) had comprehensive emergency plans in place, and nearly all state public health laboratories (SPHLs) were prepared for emergency communication with all clinical laboratories in their states.



* 2007 figure represents statewide all-hazards public health emergency response plans. Source: PHEP Partners Assessment, APHL, ASTHO and NACCHO data.

paredness plans,” a figure that does not specify how many plans took an all-hazards approach. By 2007, all states had developed all-hazards plans, and all state public health laboratories either had their own continuity of operations plans in place or were covered under the state’s broader plan.

Furthermore, plans have become more comprehensive. For instance, all local health departments (LHDs) have plans that include protocols for incident command system

(ICS) and communications. Over two-thirds of all LHDs have plans that include procedures for communicating risk to the public, conducting epidemiological investigations and administering immunizations and other preventative measures on a large scale.

CSTE reports 65 percent coverage on the state level in crucial emergency response functions: surge capacity for epidemiologic investigation, mass delivery

The PHEP Partners acknowledged the importance of a trained, robust workforce to public health emergency preparedness.

of medications, mass delivery of immunizations, pre-event development of epidemiologic response plans, linkage with animal health systems and coordination with localities. Furthermore, 88 percent of states and territories report having at least five of these functions covered.

The PHEP Partners acknowledged the importance of a trained, robust workforce to public health emergency preparedness. By 2007, nearly two-thirds of state health agencies had implemented workforce planning programs, ASTHO reported in its *2007 State Public Health Workforce Shortage Report*.

Recognizing the need to support people with timely, complete information, all public health labs had developed state

clinical lab databases by 2007 as well. These databases are important tools for communicating information on urgent public health threats and providing access to training resources. State Public Health Laboratories (SPHLs) strengthened their important role in emergency preparedness even more by partnering with law enforcement on screening, triage and emergency response plans, and with first responders for other activities.

PHEP Partners also made progress at the local level, particularly as municipalities have become better staffed and trained for emergency preparedness. Before 2002, few if any full-time employees were devoted to preparedness, but today large LHDs report

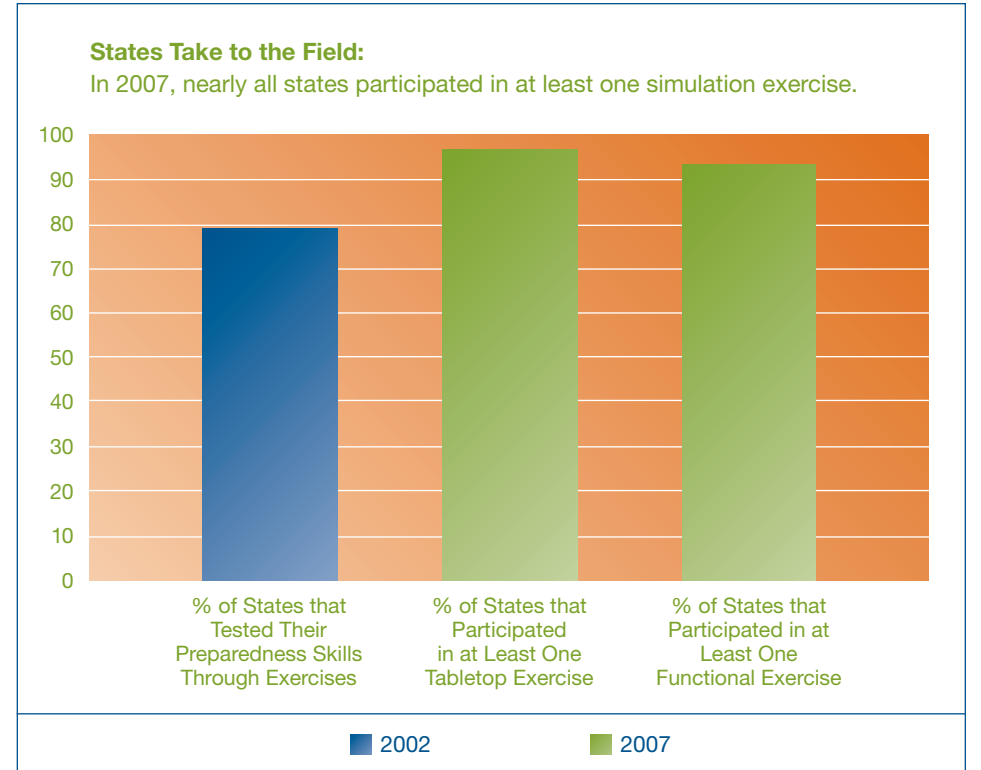
an average of seven to eight such staff.

In the area of training, 86 percent of LHD workforces reported that they had completed National Incident Management System (NIMS) training as required and become fully NIMS compliant; the remaining 14 percent are nearly complete. Adopted by the Department of Homeland Security, NIMS is the first-ever standardized approach to incident management and response, establishing uniform communications and chain-of-command practices for emergency responders in government. Agencies conversant in NIMS protocols improve their ability to work together quickly and effectively in the event of an emergency.

Small LHDs are defined as having a population jurisdiction of less than 50,000. Medium-sized LHDs have a population jurisdiction of 50,000–499,999. Large LHDs are defined as having a jurisdiction population of 500,000 or more.

In 2002, state and local public health agencies recognized the need to evaluate and improve upon the effectiveness of their emergency response plans. Preparedness resources provided since 2002 have enabled state and local health agencies to perform exercises and conduct comprehensive after-action reports to improve upon lessons learned during exercises and real events. These insights have helped public health professionals continually improve and update their plans.

Simulation exercises, as well as responses to actual events, put plans to the test. After a planned exercise or a real emergency event, jurisdictions create after-action reports that identify the strengths and weaknesses of their response efforts. They use these findings to improve and update their emergency preparedness and response plans. According to the ASTHO survey, half of all state health agencies participated in ten or more tabletop exercises in 2007, more than 30 percent participated in four or more functional exercises, and more than 20 percent participated in four or more full-scale exercises. A conservative reading of the data indicates that state health agencies participated in more than 700 exercises of all types



Source: PHEP Partners Assessment, ASTHO data.

in 2007, and an even greater number of exercises occurred at the local level.

In addition to conducting their own exercises, agencies critically need to conduct and participate in exercises involving other partners. Jurisdictions recognize this and have increased the number of exercises involving external partners. One example in-

involved strengthening the role of laboratories in the 24/7/365 emergency response testing system. By 2007, all SPHLs reported that they have a 24/7/365 emergency contact system in place, and 90 percent of SPHLs reported that they had conducted drills and exercises with first responders, other state agencies and sentinel labs – hospital-based laboratories with direct patient contact that are on the front lines of detection.

Preparedness resources provided since 2002 have enabled state and local health agencies to perform exercises and conduct comprehensive after-action reports to improve upon lessons learned during exercises and real events.

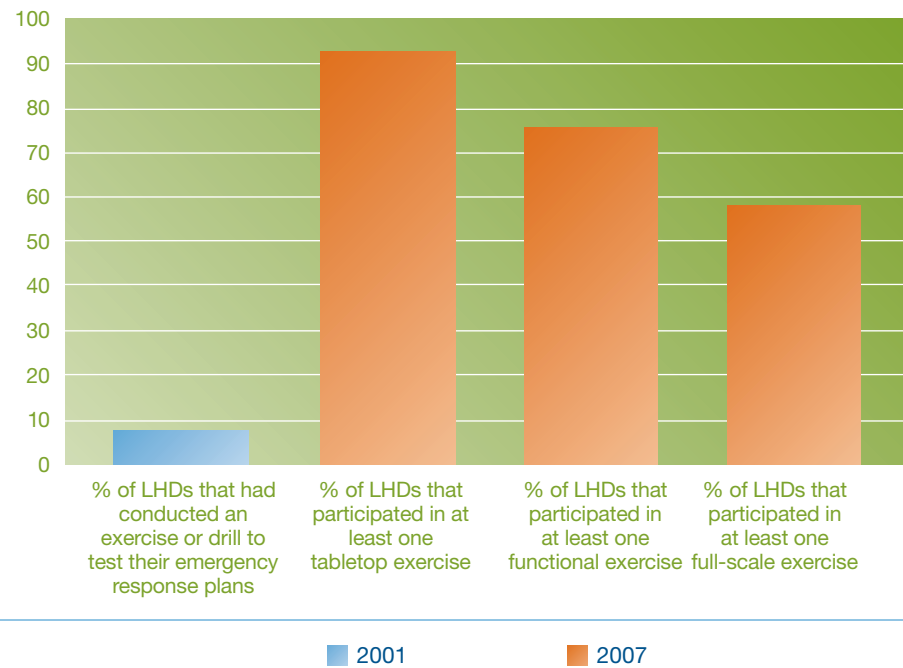


TYPES OF SIMULATION EXERCISES

- **Tabletop exercises:** Scenario-based discussions, incorporating minimal or no physical activity, that enable evaluation of an emergency operations plan or recovery plan
- **Functional exercises:** The real-time, scenario-based execution of specific tasks and activities within an emergency operations plan, focusing on collaboration, cooperation and interactive decision-making
- **Full-scale exercises:** Scenario-based extensions of functional exercises that include most or all of the complex activities of an emergency operations plan, typically conducted under the high-stress, real-time constraints of an actual incident



Local Plans in Practice: More and more LHDs are testing their emergency response activities on a variety of levels.



Source: PHEP Partners Assessment, NACCHO data.

Gaps still exist in areas of catastrophic disaster response, radioanalytical testing and workforce development.

SPHLs have expanded their roles as a resource and reached out in emergency-response partnerships. According to a May 2008 APHL report on laboratory preparedness, in one year, SPHLs received more than 5,000 unknown samples (3,614 environmental samples and 1,686 clinical specimens) for testing for suspected terrorism agents. Moreover, 45 SPHLs also

reported they had conducted testing and notification drills in tandem with the CDC's Laboratory Response Network for Biological and Chemical Terrorism and the Director's Emergency Operations Center.

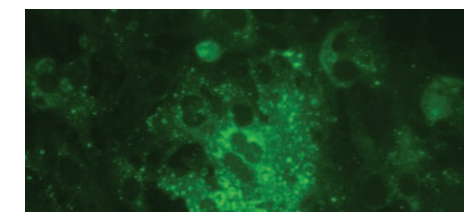
Ongoing challenges

Gaps still exist in the areas of catastrophic disaster response, radioanalytical testing and workforce development. Many LHDs lack plans for mass patient care and fatality management. Even at LHDs where these plans might exist, staffing might not be adequate to support them. Forty-three percent of small LHDs and nine percent of medium-sized LHDs have no staff dedicated to preparedness activities. While faced with declining funding and workforce recruitment and retention challenges, only 36 percent of LHDs have completed a workforce development plan that establishes a priority list of staff requiring training. In addition, only one-third of LHDs have completed a training needs assessment of the staff competency of their departments' all-hazards response plans.

Workforce issues also impact SPHLs and limit their capacity for preparedness and response. Fewer than a quarter of SPHLs report being able to actually screen or test clinical specimens for radiation. States that do have trained employees have only one or two individuals trained to test for radionuclides, which would not be enough to test the overwhelming number of samples that

could potentially arrive during a radiation exposure event. Federal estimates anticipate it would take at least a year to analyze all the samples in the event of a single dirty bomb. Those laboratories that do have staff noted that their staff will soon retire. There are few radiological education programs left in the nation and even fewer individuals seeking such jobs in public health laboratories.

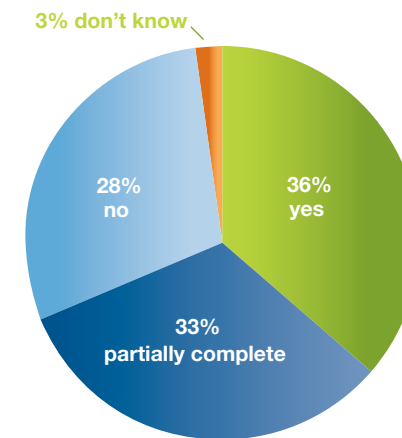
Moving forward, SPHLs, LHDs and other state, local, tribal and territorial public health players will need to continue to focus on training and exercising to improve their capability to respond to evolving and complex threats. They also require more robust Continuity of Operations Planning (COOP) in order to be able to maintain essential functions during emergencies.



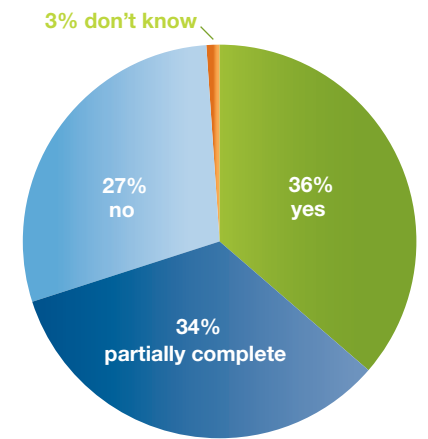
Mumps Virus in Vero Cell Culture, courtesy of Mike Pentella, PhD, Associate Director, Disease Control, University of Iowa Hygienic Laboratory



Have you completed a training needs assessment? LHDs respond.



Have you completed a workforce development plan? LHDs respond.



Source: PHEP Partners Assessment, NACCHO data.

COORDINATED, COMPREHENSIVE PLANNING THWARTS A CRISIS: THE IOWA MUMPS VACCINATION CAMPAIGN

In 2006, Iowa faced the largest mumps epidemic in 20 years, with reported cases of the disease jumping from an annual average of five to over 2,000 in 2006. Fortunately, the Iowa Department of Public Health's (IDPH) recent investment in preparedness ensured that the infrastructure was in place for a swift, comprehensive response. Collaborating with the IDPH, the LHDs in the affected areas worked to determine the source of the outbreak, maintained, organized and updated logs of suspected cases, responded to and contained confirmed cases, and provided up-to-date information to involved partners and the public. Effective preparedness planning and coordination among the state and local health departments, epidemiologists and laboratories helped to ensure a quick response.

Epidemiologists joined forces with staff trained through the Strategic National Stockpile program to conduct an informed, targeted vaccination campaign. They reached out to at-risk populations, rapidly opened clinics and administered vaccines as planned – with astounding results. Within two months, they stopped the epidemic in its tracks.

Source: NACCHO Issue Brief: Mumps Outbreak 2006

DISEASE DETECTION AND INVESTIGATION: RAPIDLY PINPOINTING OUTBREAKS

In the PHEP Program's early days, state and local public health entities reported concern about the effectiveness and response speed of their disease detection and investigation systems. Since then, there have been enhanced disease surveillance systems, decreases in the time it takes to respond, expanded detection capabilities and a rise in the number of professionals trained in these skills. Yet work remains to further integrate these systems and continue developing a skilled disease detection and investigation workforce.

CSTE data also indicate progress in response times for recent outbreaks.

Achievements

Since the implementation of the PHEP Program, vital investments have been made to improve disease detection capabilities. SPHLs expanded their lab space, added technologies, such as rapid detection assays to speed disease identification, and improved protection in the areas of biosafety and biosecurity to ensure that

jurisdictions are equipped to respond to real emergencies.

The results of these investments can be seen in expanded services. For example, while initially structured to test only human clinical samples for biological agents of terrorism, in 2001, the Laboratory Response Network (LRN) performed more than one million anthrax tests on a wide variety of both clinical and environmental samples. Since then, the LRN has continued to evolve and expand. In 2003, the LRN added the capability to detect chemical terrorism agents in human samples and now provides essential support for several surveillance activities, such as the United States Postal Service's Biohazard Detection System.

As another example, on the municipal level, a majority of large LHDs (71 percent) and medium-sized LHDs (61 percent) have epidemiological investigation plans in place, strengthening their collaboration and information-sharing partnerships with labs.

An increase in trained professionals has also helped strengthen detection and investigation capabilities at the state and local levels. The past six years have brought

A Growing Role: The number of epidemiologists and professionals using epidemiological information has risen dramatically.

Indicator	Then (2001)	Now (2006)	Percent Increase
Epidemiologists in public health departments working in emergency response ¹	115	232	102%
Epi-X users ²	890	4,646	422%

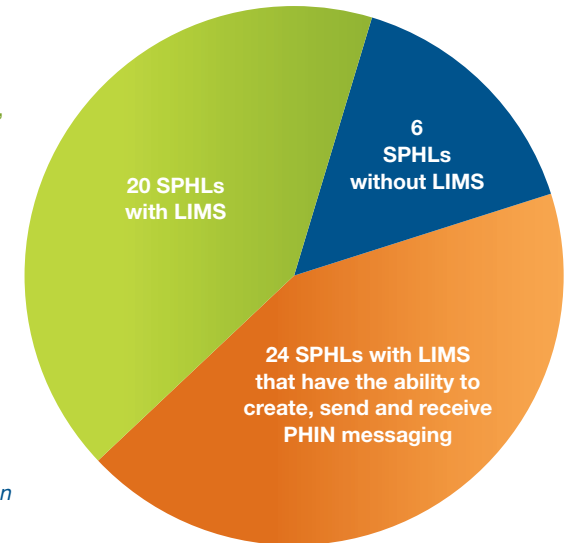
Source: ¹CSTE, *Epidemiology Capacity Assessment (ECA)*; 2006 – data for 38 states and DC; ²CDC Epi-X data; 2006.

more laboratorians trained to provide real-time polymerase chain reaction (PCR) testing for biological terrorism agents and time-resolved fluorescence assays for agents such as ricin toxin. To maintain the ability to confirm the presence of agents of biological terrorism, SPHLs must recruit and maintain staff with specialized training in microbiology, molecular methods and other LRN procedures.

A dramatic rise has occurred in the numbers of emergency response epidemiologists and users of the CDC's Epidemic Information Exchange (Epi-X) web-based network, which connects the CDC, state and local health departments, poison control centers and other health professionals. Since the CDC launched Epi-X in 2002, more than 1,000 disease outbreak reports have been posted on the network, including the 2002 West Nile Virus outbreak and the discovery of a new strain of influenza.

The disease surveillance infrastructure has expanded and improved as well. Nearly all states (96 percent) now have 24/7

Capacity Needed: Although 44 SPHLs have Laboratory Information Management Systems (LIMS), only 24 have the ability to create, send and receive Public Health Information Network messaging.



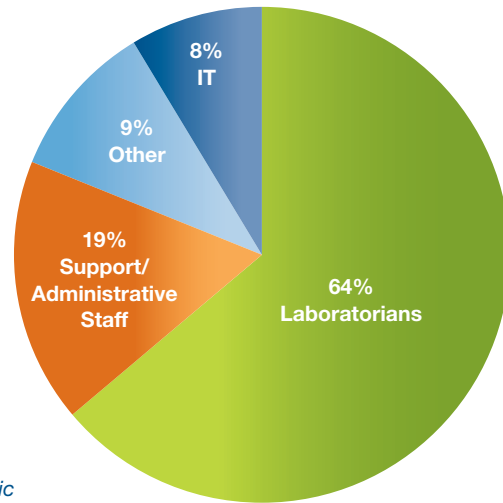
Source: APHL, *Public Health Laboratory Preparedness: Ready, Set, Respond, An APHL Report on the Preparedness of State Public Health Laboratories*, May 2008.

communications systems linking hospitals, state and local officials and law enforcement (up from 80 percent in 2002). Eighty percent of all LHDs now have plans for tracking and transporting lab specimens.

CSTE data also indicate progress in response times for recent outbreaks. For example, states report that 60 percent of meningococcal diagnosis reports are received within one day of diagnosis.

While systems have expanded and strengthened, integration is still a challenge. In 2007, the Department of Homeland Security highlighted the need to expand interoperable communications across jurisdictions and levels of government.

Help Wanted:
State public health laboratories reported 74 total vacancies nationwide in key preparedness positions.



Source: APHL, *Public Health Laboratory Preparedness: Ready, Set, Respond, An APHL Report on the Preparedness of State Public Health Laboratories*, May 2008.

Ongoing challenges

While systems have expanded and strengthened, integration is still a challenge. In 2007, the Department of Homeland Security highlighted the need to expand interoperable communications across jurisdictions and levels of government. The lack of interoperable laboratory information management systems (LIMS) is well recognized, and many attempts have been made to address the gaps in technology and funding through the creation of a variety of initiatives, programs and networks. Virtually

every government agency has created an information network within the past six years, such as the LRN, Food Emergency Response Network (FERN) and eLEXNET to support web-based exchange of data. According to a 2008 APHL public health laboratory preparedness report, 44 SPHLs have a LIMS.

Many of the laboratories that have a LIMS with a preparedness component indicated they are not currently utilizing their LIMS to send data and test results to other agencies. Labs plan to utilize their LIMS to exchange data, but lack of funding and technical guidance has prevented significant progress in this arena.



As with all areas of public health emergency preparedness, sustaining a trained workforce in the lab and in the field remains a top priority. While the area of workforce development is one of the PHEP Program's greatest successes since 2002, it also represents some of the greatest difficulties for certain programmatic areas. ASTHO identified the following key public health preparedness positions – epidemiologists, environmental health workers and laboratorians – as “very-to-moderately” affected by overall healthcare workforce shortages.

APHL reported that almost half of SPHLs lack a full-time staff person in the bioterrorism laboratory coordinator (39 percent) and chemical terrorism laboratory coordinator (45 percent) roles. More than half (59 percent) experienced difficulty in recruiting or retaining staff and 65 percent experienced hiring difficulties.

In an incident, public health laboratories may become overwhelmed with massive amounts of samples. Many of these samples may include environmental samples to determine the extent of contamination. Developing a plan to assess and expand laboratory surge capacity has become an ongoing challenge.



SYSTEM TRACKS FOOD CONTAMINATION ACROSS STATE LINES: HOW LOCAL, STATE AND FEDERAL COLLABORATION STOPPED AN E. COLI OUTBREAK IN 2006

When E. coli contamination threatened the lives and health of consumers in 2006, a coordinated regional response impacted nearly half of the United States. Because advanced infrastructure, such as technology and workforce, was already in place, the source of infection was rapidly identified, leading to the public health action of removing spinach from supermarket shelves.

In late 2006, health departments in 26 U.S. states and Ontario reported over 200 cases of illness due to E. coli O157:H7, one of the leading causes of foodborne illness that causes up to 60 deaths per year in the United States. In over half of these cases, patients were admitted to hospitals nationwide, and three people eventually died. Epidemiologic investigation and regulatory traceback found that these patients were infected by eating contaminated fresh spinach. However, if public health laboratories had not been subtyping their enteric pathogens and submitting those genetic patterns to the CDC's PulseNet National Database, the cause of these illnesses would not have been identified as quickly.

This outbreak was detected because laboratorians in Wisconsin and Oregon submitted the Pulsed-Field Gel Electrophoresis (PFGE) fingerprints of isolates in their state to PulseNet, allowing the CDC to quickly determine that matching isolates were also being tested in eight other states. Soon, bags of implicated spinach from patients' homes were also being tested and were found to be contaminated with the same strain of E. coli O157:H7. With assistance from the FDA, which is also a PulseNet participant, information was quickly delivered to consumers and retail groups, allowing the implicated product to be pulled from store shelves. More importantly, regulators and producers learned ways to improve the harvesting and distribution of fresh leafy greens, allowing for the prevention of future illnesses.

E. coli O157:H7 infection can also be associated with consumption of contaminated ground beef products. In 2002, a small outbreak in Colorado was detected through PulseNet surveillance. Only 18 days had passed since the first patient became ill, and no deaths were reported. Contrast this to an outbreak that occurred in 1993 before PulseNet was in place. This outbreak was detected 39 days after the first illness: 726 persons were ill, and four deaths were reported.

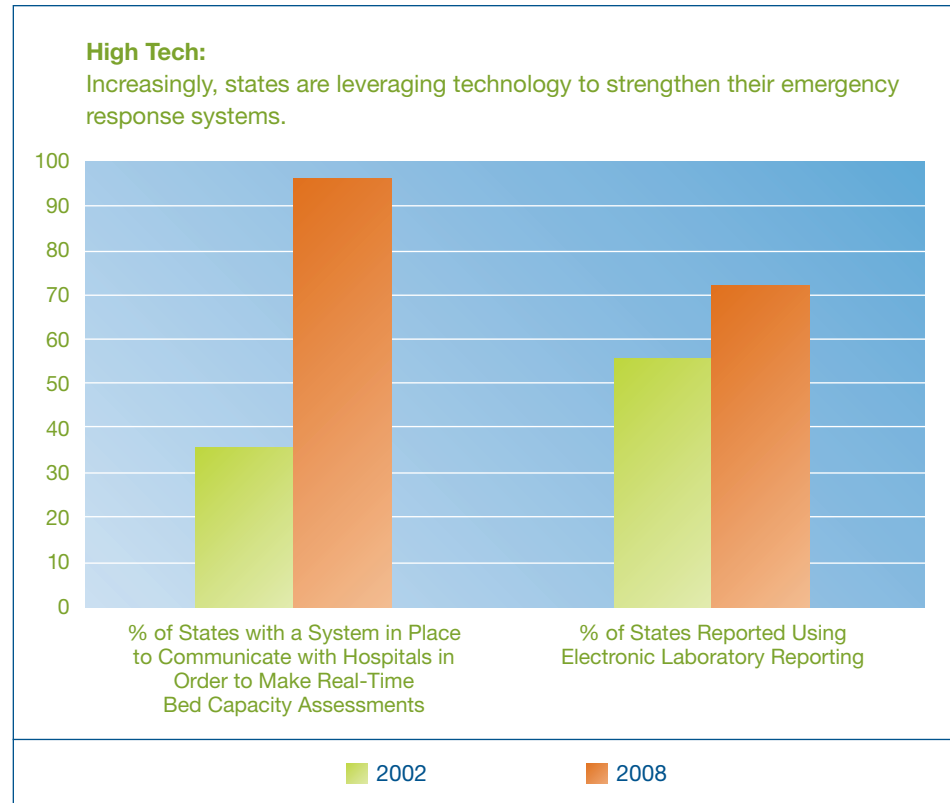
Source: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm55d926a1.htm>

RESPONSE AND RECOVERY: INTERVENING DURING AND AFTER AN EMERGENCY

Since the PHEP Program's inception, communications and information-sharing systems have improved, mass distribution capabilities have grown and partnerships have increased across the country. Priorities identified in 2002, such as a 24/7/365 capability to respond, have been addressed and systems strengthened. Although very few become emergencies, public health agencies respond to disease outbreaks on a daily basis. For instance, 73 percent of large LHDs, 57 percent of medium-sized LHDs and 44 percent of small LHDs responded to at least one significant emergency in 2007. Only 11 percent of state health agencies reported taking part in no major emergency responses in 2007, and more than a quarter (26 percent) responded six or more times.

PHEP Partner entities are still challenged to further reduce their response times and improve their service to at-risk populations.

Nonetheless, more gains must be made in the realms of collaboration and the public health workforce. The wide range of threats today spurs jurisdictions to attempt to creatively overcome competing priorities and resource limitations. And PHEP Partner entities are still challenged to further reduce their response times and improve their service to at-risk populations.



Source: PHEP Partners Assessment, ASTHO and CSTE data.
The real-time bed capacity assessment is part of the Hospital Preparedness Program under the HHS Assistant Secretary for Preparedness and Response.

Achievements

The CDC reports that all state public health departments now participate in the agency's Health Alert Network (HAN). HAN provides CDC with the ability to alert state and local public health agencies and other partners about potential or real public health events. Further indicative of a more robust network, CSTE reports that all states now use more than one communication system to report diseases and that urgent disease reports are accompanied by a phone call in the vast majority of cases.

Also encouraging has been the adoption of new technologies and systems for sharing information before, during and after an emergency event. These include electronic laboratory-based reporting (ELR), the National Electronic Disease Surveillance System (NEDSS) and systems to share real-time hospital bed availability data. However, for systems like ELR to reach their full potential, public health entities must address significant gaps, discussed later in this report.

Both states and municipalities have improved their abilities to respond to public health emergencies with complex mass distribution initiatives. For instance, the CDC, in its February 2008 report, *Key Findings from Public Health Preparedness: Mobilizing State by State*, relates that all state and some local health departments in the United States now have the ability to receive, distribute and dispense the Strategic National Stockpile (SNS). SNS refers to the large quantities of medicine and medical supplies that will be delivered at the states' request.

All state health departments have completed and adopted a plan to distribute

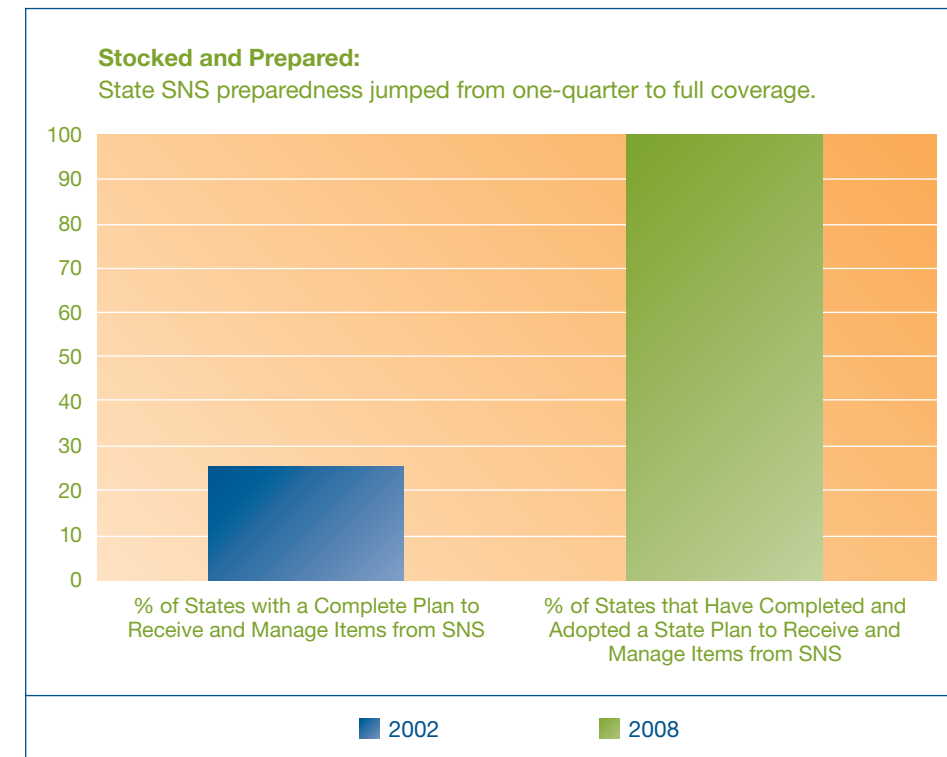
As with all areas of public health emergency preparedness, a discussion of progress cannot take place without acknowledging partnerships.

SNS supplies. Both state and local health departments have incorporated mass immunization and mass distribution of medications into their emergency plans. Furthermore, the PHEP-funded Cities Readiness Initiative (CRI) has helped local and state planners pinpoint capabilities, strengths and shortcomings related to 48-hour emergency dispensing of medicines through enhanced communications,

cross-boundary collaboration and use of shared resources. Parties used preparedness planning and technical assistance reviews to work together towards greater emergency response preparedness.

The increased number of trained epidemiologists also bodes well for the response and recovery stages, during which a heightened level of disease detection and identification takes place. This workforce development serves as a powerful example of how many diverse players are filling in the pieces of a prepared and robust public health infrastructure. From the tools and technologies used in environmental assessments to the harnessing of volunteer labor, the range, quantity and effectiveness of resources available to public health agencies have increased significantly.

As with all areas of public health emergency preparedness, a discussion of progress cannot take place without acknowledging partnerships. For example, the aggressive time parameters of the CRI program require robust partnerships with police, transportation, emergency management and other agencies. These partnerships are strengthened by enhanced communication, the ability to work across boundaries and the willingness to share information.



Source: PHEP Partners Assessment, ASTHO data.

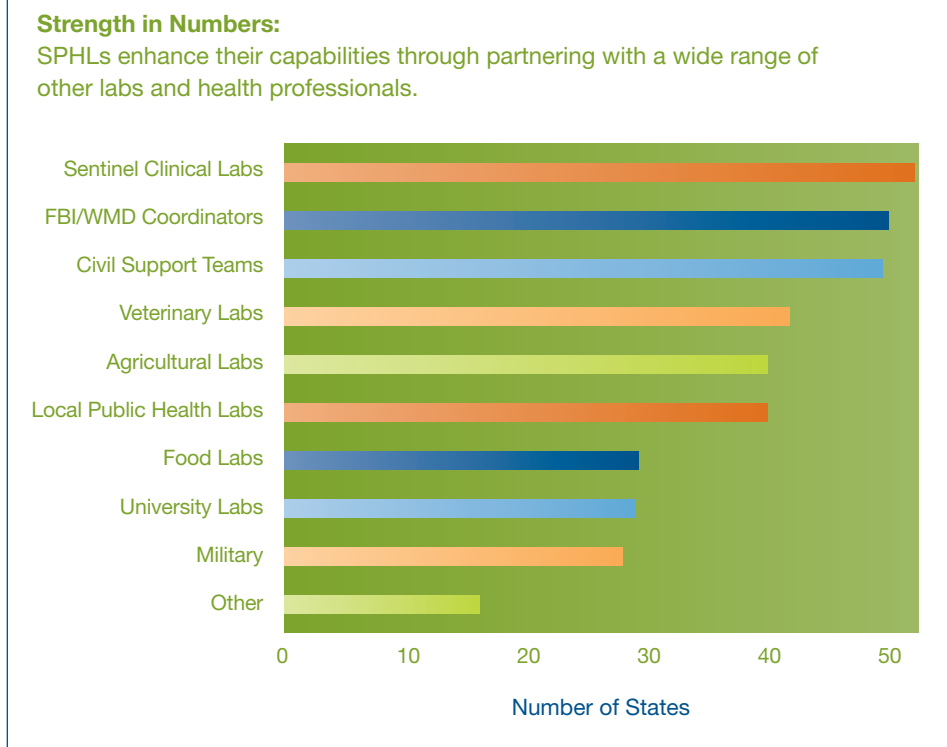


NEXT STEPS: MAINTAIN AND BUILD...OR MOVE BACKWARD

Ongoing challenges

Building upon the 2002–2007 achievements, public health's mission now is to continue to improve response capacity in a wide range of situations. When asked to identify five priority response capacities for enhancement based on an assessment of their unique jurisdictional risks and needs, state and directly funded city survey respondents gave many of the same answers. Priority capacities identified by one-third or more of respondents were Hospital/Medical Surge (a capacity supported by the HHS Hospital Preparedness Program), Continuity of Operations, Use of Volunteer Health Professionals, Mass Countermeasures Distribution, Radiation Response, Chemical Response and Disaster Recovery. During all emergency response situations, certain populations, including children and pregnant women, the elderly and those with compromised immune systems, are particularly at risk. The PHEP Partners Workgroup noted the need to continually improve emergency service to these populations.

Because PHEP Partners work to combat a wide variety of emergencies (biological, chemical, radiological, disasters



Source: APHL, *Public Health Laboratory Preparedness: Ready, Set, Respond, An APHL Report on the Preparedness of State Public Health Laboratories*, May 2008.

and other disease outbreaks), they must overcome the resource limitations of competing jurisdictional priorities. Adding to the challenge, they must concurrently strengthen and build the highly skilled professional workforces that carry out the plan.

Improving public health emergency preparedness in the post-9/11 era is not a finite mission with an endpoint; it is an ongoing process and a matter of constant vigilance. And it requires continued investment. To adequately protect the United States against today's landscape of potential threats, those jurisdictions, agencies and personnel responsible for emergency response must further develop and sustain their capabilities and infrastructure. Without such a concentrated commitment and the funding necessary to support that commitment, the progress of the past six years will erode.

The PHEP Program's proposed FY 2009 budget continues the trend of

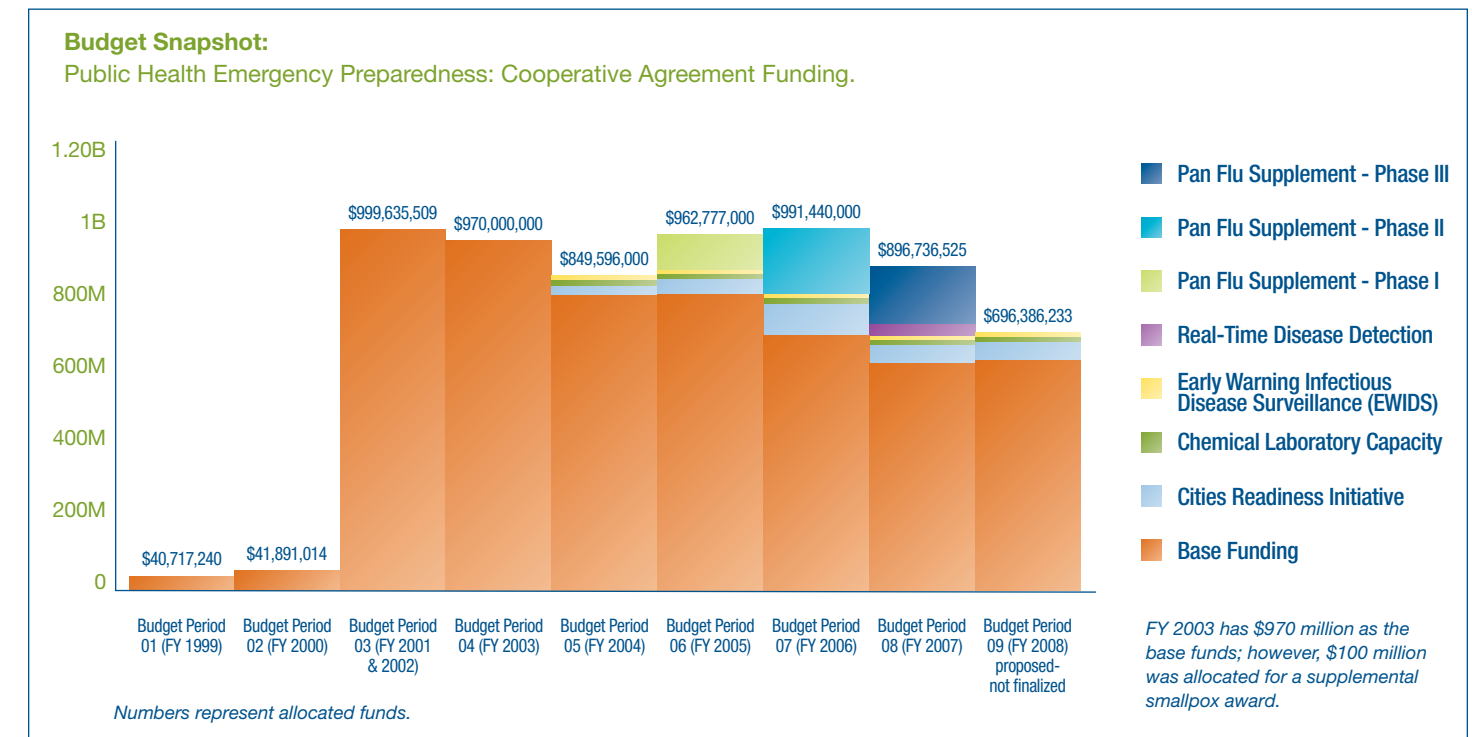
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diminished funding, with 22 percent less total funds than FY 2008. This cut is accompanied by the elimination of federal funding to states and localities to prepare for the inevitable threat of pandemic influenza.

While funding decreases, the need remains unabated for continuity of operations planning, all-hazards preparedness and other core ongoing emergency response initiatives. Today's rapidly evolving landscape demands continually improving our

capabilities to conduct mass distribution campaigns, accommodate and care for surges of patients and manage fatalities. Concurrently, we need to expand our abilities to react to a broader scope of events, from pandemic influenza to chemical threats to radiation.

Because the effectiveness of these initiatives depends on the trained, dedicated professionals who do the work, building a workforce devoted to emergency preparedness is our greatest overarching need. According to the ASTHO 2007 State Public



Source: CDC



Health Workforce Survey, over 50 percent of state health agency workforces will be eligible for retirement by 2012. Need exists at the local level as well – 26 percent of LHDs report that they lack staff dedicated to preparedness, and 60 percent lack sufficient full-time employees for their preparedness goals.

PHEP Partner entities have used creative tactics to address the need for workforce development. These include leveraging the skills of volunteer health professionals – one among many core ongoing needs recognized by the PHEP Partners Workgroup. Others demanding sustained support include COOP, all-hazards planning and overall workforce development.

Only with a steadfast commitment of federal leadership, guidance, technical assistance and resources can the PHEP Program continue to develop and strengthen the initiatives that make our state and local agencies ready and able to respond in times of crisis.

On the technology side, our ability to leverage shared information must be strengthened through tools like LIMS. To address large-scale incidents, such as pandemic flu, we must continually build our mass countermeasures distribution, patient care and fatality management capabilities



and prepare our hospitals and laboratories to ably handle surges of activity.

The past years have seen remarkable progress for the PHEP Program in building the public health infrastructure America needs to keep its citizens safe. However, only with a steadfast commitment of federal leadership, guidance, technical assistance and resources can the PHEP Program continue to develop and strengthen the initiatives that make our state and local agencies ready and able to respond in times of crisis.

