Key Findings and Moving Forward

Strong state and local public health systems are the cornerstone of an effective response to routine as well as large-scale and/or unexpected public health incidents. Public health departments have made progress in building and strengthening their preparedness and response capabilities. A summary of progress in laboratory capabilities and response readiness planning follows.

Laboratories: Identifying and Understanding Emerging Public Health Threats

Laboratories identify disease agents, toxins, and other health threats found in clinical specimens, food, or other substances. Rapid detection and characterization of health threats is essential for implementing appropriate control measures that can help mitigate the impact of the threats. The ability to detect and characterize health threats relies on the availability of laboratory equipment, a trained workforce, accurate and consistent methods, and quick data-exchange systems.

Accomplishments for biological and chemical laboratories for 2008 to 2010 include the following:

- Biological laboratory capabilities and capacities were strong in most states and localities. Overall, biological laboratories improved their abilities to rapidly identify certain disease-causing bacteria (often implicated in foodborne disease outbreaks) and send reports to CDC. For example, the number of states that submitted at least 90% of *E. coli* test results to CDC's PulseNet database within 4 working days of receiving the samples increased from 29 in 2008 to 38 in 2010. In addition, Laboratory Response Network (LRN) biological laboratories successfully maintained a high proficiency

test pass-rate for detecting other biological agents – the pass rate was consistently over 90% from 2008 to 2010. (See Table 4 on page 14.)

- LRN chemical laboratories increased their abilities to rapidly detect and quantify chemical agents. The average total number of methods successfully demonstrated by the more advanced LRN laboratories (Levels 1 and 2) to rapidly detect chemical agents during proficiency testing rose from 6.7 methods in 2009 to 8.9 methods in 2010. (See Table 4 on page 15.) These methods are important for determining how widespread an incident was, identifying individuals needing treatment, and helping law enforcement officials determine the origin of the agent.

- In addition, LRN's most advanced chemical laboratories (Level 1) dramatically reduced the amount of time needed to process and report on samples during the LRN Surge Capacity Exercise. This exercise demonstrates the ability of our nation to respond to a large-scale chemical incident like the Tokyo sarin subway attack of 1995. Between 2009 and 2010, the average hours to process and report on 500 samples by Level 1 laboratories during this exercise decreased from 98 hours to 56 hours. (See Table 4 on page 15.)

Response Readiness Planning: Improving Response to Threats through Planning for Medical Asset Distribution

Responding effectively to a public health emergency often requires complex logistical planning for activities such as the distribution of medicines or other supplies to a community.

Public health departments have made progress in building and strengthening their laboratory capabilities and response readiness planning.

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Because these activities involve many different community agencies, everyone involved in emergency response must plan strategies and regularly exercise (practice) them together. All 50 states and the 4 localities directly funded by the Public Health Emergency Preparedness (PHEP) cooperative agreement have plans for receiving, staging, storing, distributing, and dispensing medical assets from CDC's Strategic National Stockpile (SNS) and other sources. CDC and state public health personnel conduct annual technical assistance reviews (TAR) to assess these plans and ensure continued readiness. Response readiness planning accomplishments for 2007 to 2010 include the following:

- Most states improved their abilities to receive, distribute, and dispense medical assets received from the SNS from 2007 to 2010. The national average for state TAR scores increased from 87 (out of 100) in 2007-08 to 94 in 2009-10. (A score of 69 or higher in 2007-08 and 2008-09 indicated that a state performed in an acceptable range. The acceptable threshold score increased to 79 or higher for 2009-10.)

- Average scores for the metropolitan statistical areas (MSAs) in CDC's Cities Readiness Initiative (CRI) also improved over time. CRI MSAs are selected based on population, geographical location, and potential vulnerability to a bioterrorism threat. The CRI program is designed to better prepare major U.S. metropolitan areas to effectively receive, distribute, and dispense medical countermeasures to their entire populations in a short time in response to large-scale public health emergencies. The national average for the 72 CRI MSAs increased from 68 (out of 100) in 2007-08 to 88 in 2009-10. (Acceptable thresholds were 69 or higher in 2007-09 and 79 or higher for 2009-10.)

Moving Forward

An effective public health response begins with a strong public health system that can conduct routine public health activities and adequately surge to meet the needs of a jurisdiction during a large-scale or unexpected emergency.

Today, public health departments face increasing challenges that may jeopardize their abilities to support a sufficient response to a public health incident. Challenges include continuing budget cuts at federal and state levels, workforce shortages, and an ever-evolving list of public health threats. In 2010, 12 (24%) states did not submit 90% of *E. coli* test results to CDC's PulseNet database within 4 working days, slowing down identification of outbreaks (see Table 2 on page 11). These and other challenges are causing state and local planners to express concerns over the ability to sustain the real and measureable advances made in public health preparedness.

Public health officials likely will need to make difficult choices to ensure that federal dollars are directed to priority functions and services that result in more resilient and better prepared communities. CDC's *Public Health Preparedness Capabilities: National Standards for State and Local Planning*[2] provides a guide that state and local public health departments can use to plan their priorities and decide which capabilities they have the resources to build or sustain.

CDC strongly recommends that states and localities receiving PHEP funding prioritize the order of the 15 public health preparedness capabilities in which they intend to invest. Their evaluations should be based on assessments of jurisdictional risks and current capabilities and gaps. In addition, CDC encourages state and local public health departments to focus on building capabilities that provide a strong foundation for

public health preparedness. Toward that end, CDC has prioritized the 15 capabilities into two tiers with an emphasis on Tier 1 (see box on page 3).

Looking ahead, HHS is working to better align the PHEP and Hospital Preparedness Program (HPP) cooperative agreements to improve their impact and effectiveness. The HPP, managed out of the HHS Office of the Assistant Secretary for Preparedness and Response, provides leadership and funding to improve surge capacity and enhance community and hospital preparedness for public health emergencies.[7] The alignment of PHEP and HPP will be accomplished through one Funding Opportunity Announcement in 2012 that will facilitate joint coordination of grants administration, management, and performance reporting. This closer alignment will advance national preparedness by strengthening collaboration between public health and medical preparedness – major components of national health security – and will also reduce the current programmatic burdens on funding recipients as well as federal government costs.