INTERIM IMPLEMENTATION GUIDE
for
THE NATIONAL HEALTH SECURITY STRATEGY OF THE UNITED STATES OF AMERICA

U. S. Department of Health and Human Services

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1. INTRODUCTION

The Pandemic and All-Hazards Preparedness Act (PAHPA) was enacted in 2006 to improve the Nation's ability to detect, prepare for, and respond to a variety of public health emergencies. Among other things, PAHPA directs the Secretary of the Department of Health and Human Services (HHS) to develop a National Health Security Strategy (NHSS), to be initially presented to Congress in 2009 and subsequently revised every four years afterward.

National Health Security Strategy Identifies Goals and Strategic Objectives for the Nation

As noted in the *National Health Security Strategy* document, national health security is achieved when the Nation and its people are prepared for, protected from, ready to respond to, and able to recover from incidents with potentially catastrophic health consequences.

The NHSS is designed to achieve two goals:

- Build community resilience
- Strengthen and sustain health and emergency response systems.

These goals are supported by ten strategic objectives, which address areas that require urgent and focused attention and improvement. The strategic objectives describe what must be accomplished to address current gaps in national health security over the next four years and to maintain improvements in health security over the longer term. The ten strategic objectives are:

1. Foster informed, empowered individuals and communities
2. Develop and maintain the workforce needed for national health security
3. Ensure situational awareness
4. Foster integrated, scalable health care delivery systems
5. Ensure timely and effective communications
6. Promote an effective countermeasures enterprise
7. Ensure prevention or mitigation of environmental and other emerging threats to health
8. Incorporate post-incident health recovery into planning and response
9. Work with cross-border and global partners to enhance national, continental, and global health security

10. Ensure that all systems that support national health security are based upon the best available science, evaluation, and quality improvement methods

The strategic objectives, in turn, are supported by a set of 50 operational capabilities. The capabilities provide the means to accomplish the goals of the NHSS and are the "building blocks" of health security. These capabilities promote the ability of individuals, communities, and governments to prevent, protect against, respond to, and recover from threats to the Nation's health and well-being.

Interim Implementation Guide Identifies Initial Activities That Provide the Foundation for a More Complete Biennial Implementation Planning Process

The Nation has already made considerable progress in achieving health security (see Appendix A). Yet fully realizing the NHSS's goals and strategic objectives will require detailed planning to guide implementation. Such detailed guidance will come in an *Implementation Plan*, the first version of which is scheduled for September 2010 and which will be revised every two years. The *Plan* will outline federal-level activities and provide guidance to inform planning at the local, state, territorial, and tribal levels and in the non-governmental sector. It will also outline a comprehensive evaluation approach to ensure that activities undertaken to achieve the goals and strategic objectives of the NHSS are informed by performance monitoring and lessons learned over time.

In the meantime, this *Interim Implementation Guide* describes initial implementation activities, most of which are already under way, that will take place during the nine-month period from January 2010 through September 2010 and provides a foundation for developing a more comprehensive *Biennial Implementation Plan*. The initial nine-month planning period will allow for coordination with ongoing planning by the Department of Homeland Security (DHS), including completion of the next round of revisions to the Target Capabilities List (TCL), revision of Homeland Security Presidential Directive (HSPD) 8, and the development of workforce competencies for all sectors involved in national health security.

Implementation Is a National, Not Merely a Federal, Responsibility

As is noted in the NHSS, national health security is everyone's responsibility. The Nation draws its strength from the combined efforts of local, state, territorial, tribal, and federal levels of government, private sector industry, nonprofit agencies, academia, communities, families, and individuals. Thus, implementation of the NHSS will require the dedicated efforts of all of these stakeholders. The process for developing the *Biennial Implementation Plan* will feature

- Public forums conducted across the country
- Solicitation of input and feedback from existing advisory committees and working groups on national health security
- Use of technology to expand opportunities for public input and feedback

Organization of the *Interim Implementation Guide*

Chapter 2 of this *Interim Implementation Guide* describes initial implementation activities for the first nine months of 2010. Chapter 3 then describes, in general terms, roles and responsibilities in implementation. Chapter 4 discusses how to improve and sustain resources for national health security. Finally, Chapter 5 provides a brief conclusion to the *Guide.*

2. IMPLEMENTATION PLAN: VISION AND INITIAL ACTIVITIES FOR JANUARY 2010 THROUGH SEPTEMBER 2010

During the first nine months of 2010, HHS and its partners will focus on accomplishing eight initial activities that provide a foundation for further implementation of the NHSS:

- Identify and prioritize a list of investments to enhance the capabilities required to achieve national health security (2.1)
- Conduct a workforce gap analysis and develop workforce competencies for all sectors involved in national health security (2.2)
- Coordinate HHS's efforts to improve national health security with those of DHS and all federal agencies involved in national health security (2.3)
- Begin to identify and develop methods for risk analysis appropriate to the broad range of risks to public health (2.4)
- Develop an evaluation framework, including plans for performance monitoring and evaluating the impact of investments (2.5)
- Promote and implement quality improvement (QI) methods for health security on a broader scale (2.6)
- Propose an agenda for research to enhance national health security (2.7)
- Conduct an assessment of the countermeasures enterprise with the aim of identifying how to develop, manufacture, and ensure availability and delivery of countermeasures faster and more efficiently (2.8)

These cross-cutting activities are applicable to and support the two goals and ten strategic objectives of the NHSS. The remainder of this chapter describes underlying principles and recommended next steps for each of these initial implementation activities.

2.1. INVESTMENTS TO ENHANCE CAPABILITIES THAT SUPPORT NATIONAL HEALTH SECURITY

HHS will develop a list of candidate investments and policies designed to address all stages of a health incident, including "prevent," "protect," "respond," and "recover." This development process will include consultation with a wide range of stakeholders and reviews of commission reports and after-action reports. The candidate investments will likely fall into the following broad categories:

- Developing and improving plans for emergencies, including communication, security, transportation, etc.
- Involving community organizations in emergency planning, including developing community resilience
- Developing partnerships between coordinating agencies and local communities
- Developing tools and approaches for training
- Training and exercising specific capabilities
- Increasing the quantity of material available for medical emergencies, including stockpiles of and the capacity for the manufacture of countermeasures and medical equipment and the capabilities required at all levels of government (local, state, territorial, tribal, and federal) to deliver these materials in a time of need
- Building a fully national biosurveillance system
- Increasing the number of personnel needed for biosurveillance, including skilled laboratory personnel and epidemiologists
- Increasing the number of pre-identified and trained volunteers for responding to medical emergencies
- Ensuring that legal protections and authorities are in place and legal barriers are removed for emergency medical care and resources
- Ensuring that laboratory information is available through an electronic laboratory information exchange.

Given the broad range of stakeholders involved in national health security, these investments will be carried out at the local, state, territorial, tribal, and federal levels and in the public and private sectors.

Next Steps

During the first nine months of 2010, it will be important to undertake a process for developing and prioritizing the list of investments. In addition, it will be useful to develop planning templates that communities can use to tailor investments to local

conditions as well as tools for measuring progress. Communities, in turn, must analyze the list in the context of their own capabilities and requirements in order to best prepare themselves.

2.2. WORKFORCE

An adequately sized, capable, and diverse workforce is a key ingredient of health security systems. The workforce for national health security includes but is not limited to employees in public health, health care, homeland security, pre-hospital emergency medical systems, volunteers, and others. Workforce shortages in sectors with key roles in national health security (e.g., public health[1] and health care[2]) are projected to worsen over time. For instance, studies at the local[3] and national[4, 5, 6] levels have identified key shortages in the supply of public health nurses, epidemiologists, and laboratory personnel.[7, 8] In addition, the workforces in public health departments are often less racially/ethnically diverse than the populations they serve.[9]

Next Steps

Planning for implementation of the NHSS must be based on a clear understanding of the needs and gaps in the entire workforce vital to health security. Thus, the HHS Assistant Secretary for Preparedness and Response (ASPR) will seek to synthesize existing research to generate a more complete picture of the size, competencies, and diversity of the entire health security workforce. This more comprehensive view will include not only public health employees in a wide range of settings, but also employees in other sectors relevant to health security for which workforce enumerations have been conducted (e.g., health care and emergency medical services).

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[1] American Public Health Association, *Shortage of U.S. Public Health Workers Projected to Worsen: About 250,000 New Workers Needed* (May 2008) (accessed online 9/30/09 at http://www.apha.org/publications/tnh/archives/2008/May+2008/Nation/WorkforceNAT.htm).

[2] Health Resources and Services Administration, The Physician Workforce: Projections and Research into Current Issues Affecting Supply and Demand (December 2008) (accessed online 10/09/09 at ftp://ftp.hrsa.gov/bhpr/workforce/physicianworkforce.pdf).

[3] K.M. Gebbie, A. Raziano, and S. Elliott, "Public Health Workforce Enumeration," *American Journal of Public Health*, 99, 786-787 (2009). doi:10.2105/AJPH.2008.137539.

[4] Association of State and Territorial Health Officials, *2007 State Public Health Workforce Survey Results* (Arlington, VA, 2008).

[5] National Association of County and City Health Officials (NACCHO), *2005 National Profile of Local Health Departments* (Washington, D.C., July 2006) (Accessed online 10/05/09 at http://www.naccho.org/topics/infrastructure/profile/upload/NACCHO_report_final_000.pdf).

[6] Another, more recent survey of local health departments across the nation was conducted by NACCHO, but data have not yet been analyzed.

[7] Association of State and Territorial Health Officials, *2007 State Public Health Workforce Survey Results* (Arlington, Va., 2008).

[8] NACCHO, *2005 National Profile of Local Health Departments* (Washington, D.C., July 2006) (accessed online 10/05/09 at http://www.naccho.org/topics/infrastructure/profile/upload/NACCHO_report_final_000.pdf).

[9] National Association of County & City Health Officials, 2005 National Profile of Local Health Departments (Washington, D.C., July 2006) (accessed online 10/05/09 at http://www.naccho.org/topics/infrastructure/profile/upload/NACCHO_report_final_000.pdf).

In addition, ASPR will begin planning for a more comprehensive study in the future. This study will include the broader range of workforces relevant to national health security and address limitations of past research. Specifically, this study should:

- Include the full range of employees that play a role in health security in the enumeration of the workforce, including not only public health but also health care, homeland security, first responders, and others
- Ensure that workers who are employed in multiple settings are counted only once
- Include volunteers in the workforce assessment
- Facilitate streamlined and routine data collection to quantify the workforce[10]
- Establish a standard taxonomy for classifying occupations relevant to health security
- Create a method for counting health security workers outside government agencies that does not place undue burdens on local community agencies and organizations
- Assess the racial/ethnic composition of the health security workforce to identify areas in which greater racial/ethnic diversity is needed.

ASPR will also review opportunities to use existing efforts to identify core health security competencies to inform efforts to close gaps in the workforce.[11]

[10] K.M. Gebbie, A. Raziano, and S. Elliott, "Public Health Workforce Enumeration," *American Journal of Public Health*, 99, 786–787 (2009). doi:10.2105/AJPH.2008.137539.

[11] The Centers for Disease Control and Prevention (CDC) /Council of State and Territorial Epidemiologists (CSTE) Applied Epidemiology Competencies Toolkit that describes these competencies and their evaluation can be accessed at the following website: http://www.cste.org/dnn/Home/CSTEFeatures/Competencies/tabid/174/Default.aspx (accessed online 12/22/09)

2.3. FEDERAL INTERAGENCY COORDINATION

Harmonization of efforts by HHS and DHS, as well as by other federal agencies involved in national health security (e.g., Department of Veterans Affairs, Department of Defense, Department of Labor, Department of Agriculture, and Department of Transportation), is necessary to ensure consistency of approaches to improving health security.

Defining capabilities and developing appropriate measures is one particular area in which coordination is especially crucial. For instance, DHS is currently revising the TCL. This revision is scheduled for completion in September 2010, approximately nine months after the release of this *Interim Implementation Guide*. The timing of the release of the more detailed *Biennial Implementation Plan* has been deliberately set to coincide with the release of the revised TCL. Thus, in the coming months, HHS will need to work with DHS to ensure that the NHSS's capability definitions and measures are consistent with the TCL.

2.4. RISK ASSESSMENT

To help decide on priorities for investment in national health security, it is necessary to identify the key health security risks faced by the Nation. As in the NHSS, risk is defined as the multiplicative product of "threat," "vulnerability," and "consequences." While risk-based resource allocation does not necessarily imply targeting the highest risks, it is clear that resource allocation and other policies should be made with knowledge of the health security risks faced by different planning jurisdictions (e.g., local, state, territorial, and tribal) and the Nation as a whole. Thus, risk assessment provides a cornerstone in implementing the NHSS.

Traditional approaches to risk assessment are based on being able to identify threats, estimate vulnerabilities, and then estimate consequences if the threat were manifested. Differing approaches have been taken by DHS,[12] the World Health Organization (WHO),[13] and other large organizations[14] to attempt to effectively assess health risks. Given the recent addition of health security as an explicit focus of national policy, more work is needed to determine the appropriateness and effectiveness of these approaches for the NHSS, including the availability and collection burdens of the necessary data and the practical utility of these approaches at the national to local levels.

Principles

The risk assessment approach should be based on exemplary practices from other sectors and other countries and should integrate effectively with risk assessment methods and risk management frameworks used by other federal organizations, particularly DHS. Three basic principles should guide the development of the NHSS's risk assessment approach. The approach should be

1. *Analytic and data driven:* Reliable, valid, and replicable
2. *Deliberative:* Transparent and comprehensive
3. *Practical and timely:* Provide actionable information.

The National Planning Scenarios, 15 all-hazard scenarios developed by DHS for a capabilities-based approach to preparedness activities, are a starting point for the national health security risk assessment, since they provide an accepted, challenging set of hazards. Planning jurisdictions at all levels, from national to local, can use these scenarios. However, an assessment of other health-related hazards, or combinations of

[12] "National Strategy for Homeland Security," Homeland Security Council, October 2007.

[13] "Integrated Risk Assessment," Report Prepared for the World Health Organization, UNEP/ILO, International Programme on Chemical Safety, WHO/IPCS/IRA/01/12, December 2001.

[14] "Applying Risk Management Principles to Guide Federal Investments," Testimony Before the Subcommittee on Homeland Security, Committee on Appropriations, House of Representatives. United States Government Accountability Office (GAO), GAO-07-386T, February 7, 2007.

hazards (to include geographic and temporal clustering), might be needed to inform the development of the NHSS's risk assessment methods.

One starting point for the effort should be to leverage existing, established practices of community health assessment (CHA), which involves collecting data on the demographics and health status indicators of a specific community to identify the primary health problems faced by that community.[15] Specifically, ASPR should identify, develop, and refine user-friendly CHA tools and templates that can be disseminated and adapted to the specific needs of local communities, states, territories, and tribes.

Next Steps

To begin this process, during the first nine months of 2010, the following steps will be required in selecting and developing an appropriate risk assessment approach for health security:

- *Review and compare state-of-the-art, health-related risk assessment methods and tools.* This review of recommended best practices should inform the NHSS's risk assessment approach.
- *Rigorously field-test one or more approaches to risk assessment in communities.* Field testing of risk assessment tools and templates will help improve their effectiveness, generality, and feasibility of implementation.
- *Develop a plan for broader implementation of the risk assessment tools/approach.* The plan should include key steps, responsibilities, and timelines.

[15] "Finding Information for a Community Health Assessment," University of North Carolina at Chapel Hill Health Sciences Library (accessed online 11/18/09 at http://www.hsl.unc.edu/services/guides/communityHealth.cfm).

2.5. EVALUATION FRAMEWORK

Concerted efforts to develop and sustain national health security have begun only recently in the Nation's history, and the evidence base for health security remains weak. Thus, implementation will need to be characterized by continuous learning and improvement. Evaluation and measurement provide the ongoing performance feedback needed to guide such learning and will be a part of the inaugural *Biennial Implementation Plan.*

Principles

The evaluation framework should provide information that decisionmakers and other stakeholders need to assess system functioning and return on investment. Specifically, the framework will provide concrete plans designed to support *performance monitoring* and *evaluations of the impact of investments*:

- *Performance monitoring*. Decisionmakers and other stakeholders need data that represent the health security system's ability to execute the capabilities outlined in the NHSS. Performance measures should focus on aspects of health security that are mission critical, likely to fail, and applicable to a broad range of the Nation's communities (ranging from large metropolitan areas to rural communities). Having such data will allow all stakeholders to track changes over time and identify strengths and weaknesses.

- *Evaluations of the impact of investments*. Decisionmakers and other stakeholders also need to know whether the investments the Nation is making in national health security are actually improving the ability of stakeholders at all levels to execute the capabilities outlined in the NHSS and ultimately to meet the goals and strategic objectives of the NHSS. These evaluations must be able to distinguish the impact of investments from other factors. This will help judgments about return on investment. They should also help support all phases in the development of new tools for and approaches to national health security, including design, implementation, and scale-up.

Next Steps

The inaugural *Biennial Implementation Plan* will provide a fully elaborated evaluation strategy. To help lay the foundation for that more complete plan, during the nine months between January 2010 and September 2010, it will be important to continue efforts to assess current performance measures of health security and begin to develop new ones where critical gaps exist. These provide the basis for performance monitoring and the essential building blocks for evaluations of the impact of the Nation's health security investments. The evaluation strategy outlined in the *Biennial Implementation Plan* will emphasize that evaluation is the shared responsibility of local, state, territorial, tribal,

federal, and non-governmental entities and will provide mechanisms for coordinating evaluation efforts and sharing findings.

Along with the evaluation strategy, this nine-month effort will culminate in a public evaluation report on progress in meeting NHSS goals and strategic objectives, thereby providing a snapshot of the state of health security in the United States. The report will include as many capabilities as possible and will establish a baseline against which future performance can be judged. It will also provide the foundation for development of more comprehensive reports in coming years.

To develop the report, HHS will consult with other federal agencies and stakeholders in local, state, territorial, and tribal health departments; other government agencies; community groups; and other organizations to identify

- Specific measures for the report
- A reporting format useful to a broad spectrum of end users and audiences
- A roll-out and messaging strategy that will effectively communicate key findings from the reported performance measures.

To inform future efforts to develop measures, HHS has already authorized a high-level gap assessment of performance measures already in use or under development within its agencies and offices as of spring 2009 (see Appendix B). A more comprehensive account of the state of performance measurement for each of the capabilities identified in the NHSS is contained in Appendix C. Additional efforts are needed to identify gaps in performance measurement in all levels of government and sectors relevant to national health security.

The initial report will emphasize measures for which data are already being collected. Given the short timeline, the inaugural report will emphasize previously developed and field tested measures for which data are already—or will soon be—collected. Thus, the initial report will include the following:

- *State and territorial health department capabilities*. Data collected as part of CDC's Public Health and Emergency Preparedness (PHEP) Cooperative Agreement assess state and territorial health departments on incident management, crisis and emergency risk communication with the public, and public health laboratories. If possible, the first report might also include assessments of other biosurveillance capabilities (e.g., epidemiologic investigation and surveillance) in state and territorial health departments.
- *Local, state, territorial, and tribal countermeasure delivery capabilities*. Data collected by the CDC's Division of Strategic National Stockpile assess the Cities Readiness Initiative metropolitan areas (including local, state, territorial, and tribal health departments and their partners) on staff and facility call-down, facility set-up, inventory management, and dispensing of medications.

- *Hospital and health care facilities' capabilities.* Data collected by ASPR's Hospital Preparedness Program (HPP) assess communities on communications, resource tracking, patient transport, fatality management, and other capabilities.

Additional measures may be developed but without data reported in the first report. Measures that have been developed but for which data are not yet available will be presented (without numbers) in the report in order to communicate to users and stakeholders what future versions of the report will look like. These might include new measures on various aspects of community resilience developed by ASPR, new PHEP Cooperative Agreement measures developed by CDC, and measures used by non-governmental efforts such as Project Public Health Ready, the Joint Commission (formerly known as the Joint Commission on the Accreditation of Healthcare Organizations or JCAHO), and nonprofits involved in community preparedness efforts.

Development of remaining measures will be described in the first Biennial Implementation Plan. The development of any additional measures will be described in the first Biennial Implementation Plan, to be released in fall 2010.

2.6. QUALITY IMPROVEMENT

Ensuring national health security requires the Nation to be able to address any performance gaps revealed through evaluation and measurement. Quality improvement (QI) provides a set of tools for doing so.

Principles

QI methods share a common set of principles and strategies, including: (1) an organizational systems framework in which operational performance is the result of a series of interrelated processes, (2) data to define performance goals and measure performance, (3) various statistical and group process methods and tools to decide how to improve performance, and (4) the deliberate spread and implementation of process changes that have shown promise at improving performance.

Although QI models have proven effective in such varying contexts as manufacturing and clinical health care provision, they have not yet been widely used in national health security. Recent work in the public health sector indicates that QI methods are generally well received by public health personnel and have the potential to enhance performance in pursuing national health security.[16] Early efforts to adapt QI methods to public health practice generally have also been promising.

Next Steps

As a foundation for future development of QI tools for health security, it would be desirable to identify existing tools that incorporate QI and have demonstrated success. This review should focus where possible on tools currently used in disciplines involved in health security but might also include other fields such as industrial manufacturing.

In addition, given the successes of pilot QI learning collaboratives in public health, further efforts to promote and implement QI methods for health security on a broader scale are recommended. Specifically, ASPR will develop a plan for scaling up QI in health security. Such a plan could involve some of the following elements and occur within existing programs:

- *Fund efforts to develop and refine QI tools to address gaps or deficiencies in existing QI tools.* To motivate the improvement of existing health security tools informed by QI principles, funding could be made available for efforts to accomplish these goals. For example, based on the gaps identified above, Requests for Applications (RFAs) could be released to encourage development and pilot testing of new health security tools based on QI principles.

[16] See, for example, D. Lotstein, M. Seid, K. Ricci, K. Leuschner, P Margolis, and N. Lurie, "Using Quality Improvement Methods to Improve Public Health Emergency Preparedness: PREPARE for Pandemic Influenza," *Health Affairs*, 27 (July 2008), w328-w339.

- *Incorporate QI into relevant grant guidance and support.* One way to incentivize the use of health security tools based on QI principles on a large scale is to require or encourage it as a condition of receiving grant funds. Specifically, grantees might be required or encouraged to demonstrate the use of a QI process in general or the use of a particular QI tool that has evidenced utility for a particular health security capability.

- *Embed QI in the technical assistance provided through grant and accreditation programs.* To facilitate dissemination of QI methods in health security, technical assistance offered by grant and accreditation programs, whose goals are to improve and strengthen health security performance, could provide training for QI methods. QI could also be offered in technical assistance for grantees receiving funds to improve health security across various relevant sectors of activity.

- *Embed instruction in QI in education programs.* To institutionalize the use of QI in health security, it must be integrated into the curriculum for degree programs and continuing education programs for public health, health care, and other relevant professional areas. That is, efforts to teach QI methods must reach both practitioners in training and those who are already in the field.

- *Create recognition programs for agencies with high levels of performance and evidence of robust QI programs.* The use of QI may be further encouraged by publicly commending high-performing agencies that demonstrate robust QI programs. These agencies could be recognized through an award given at the state level on an annual basis. These recognition programs could follow the models of awards for organizational excellence, such as the Malcolm Baldrige National Quality Award (www.quality.nist.gov), given by the U.S. National Institute of Standards and Technology, and the Governor's Sterling Award (www.floridasterling.com) in Florida.

2.7. RESEARCH AGENDA

Research to document the current status of national health security risks and capabilities and evaluate the comparative effectiveness of various practices is vital to establishing an evidence base for national health security, identifying relevant exemplary practices, and spurring innovation in strategies for promoting the Nation's health security.

Next Steps

During the first nine months of 2010, HHS will work with other federal agencies and stakeholders to propose a research agenda and identify areas for future research on national health security. In the future, it will be necessary to revise the research agenda as the evidence base for health security grows and security threats change over time.

2.8. COUNTERMEASURES ENTERPRISE

At the direction of the Secretary, the Office of the ASPR will lead a review of the medical countermeasures enterprise, to be completed in the first quarter of 2010. ASPR will analyze how its policies affect every step of countermeasure development, production, distribution, dispensing, and utility with a singular goal of improving the system.

Additionally, as part of the research agenda setting process described earlier, during the first nine months of 2010, HHS will work with other federal agencies and stakeholders to propose a research agenda and identify areas for future research on countermeasures. In the future, it will be necessary to revise the research agenda as the evidence base for countermeasures grows and security threats change over time.

3. OVERALL ROLES AND RESPONSIBILITIES

The NHSS specifies that national health security requires robust efforts by multiple stakeholders across all sectors. In government this includes, but is not limited to, public health, health care, emergency management, and law enforcement. Public health and other government agencies occupy a distinctive role as the lead sector in ensuring national health security—and consistent with the lead role assigned to the HHS Secretary in PAHPA.[17] National health security also requires the development and maintenance of resilient communities, including health care providers, non-governmental organizations, academia, and private businesses. Thus, a broad range of actors share responsibility for national health security.

During the coming year, it will be necessary to develop an *Implementation Plan* that provides a detailed understanding of who must be involved in each aspect of national health security and ensures that all participants are adequately prepared, exercised, and aware of each other's roles in preventing, protecting against, responding to, and recovering from health emergencies. Plans must also recognize that roles, responsibilities, and mechanisms for coordinating implementation partners will vary somewhat from community to community, reflecting differences in governmental structure, community resources, culture, and risk profiles. However, all such planning should be guided by the principles articulated in the *National Response Framework* and other key sources of national homeland security doctrine. In general terms, key partners in ensuring national health security and their roles and responsibilities are

- *Local, state, territorial, and tribal governments*. Primary authority for health security lies with local, state, territorial, and tribal governments.

- *Federal government*. The federal government has a significant role in supporting local, state, territorial, and tribal governments before, during, and after incidents. It seeks to reduce unwarranted variations in capacity and capability through such activities as providing funding and guidance, developing and promulgating performance measures and standards, sponsoring research, supporting disseminating evidence-based tools and practices, and providing technical assistance.

- *Communities (individuals, families, and non-governmental organizations).* As noted in the *National Response Framework* (NRF), "resilient communities begin with prepared individuals and depend on the leadership and engagement of local government, non-governmental organizations, and the private sector" (NRF, 5). In an emergency, individual citizens are often first responders and provide search and rescue and medical aid before professional responders arrive. Additionally,

[17] Public Health Service Act (42 U.S.C. 300hh-1), as amended by section 103 of the Pandemic and All Hazards Preparedness Act, Public Law No. 109-417.

during major disease outbreaks, volunteers have assisted with mass vaccination clinics, supporting the sick and their caregivers, and have participated in policy decisions related to health security.[18]

- *Academia.* Academia can contribute to national health security by conducting basic to applied research (to develop new technologies and identify best practices for national health security) and providing education and training in activities necessary to ensure health security. Academia may also play a key role in helping to institute cultural change by conducting research on interventions designed to promote attitudes and behaviors that enhance preparedness and resilience.

- *Private sector.* The private sector is a critical part of society, as it provides essential goods and services and touches the majority of our population on a daily basis, through an employer-employee or vendor-customer relationship. Businesses should develop and practice plans for protecting their employees and ensuring business continuity. Critical infrastructure entities, such as power companies and other utility services, must also be engaged in planning for public health emergencies because of our society's dependence upon their services.

- *International community.* Increasingly, health security also requires collaboration among international organizations and governments, as many risks and threats do not respect borders and are heightened due to globalization and technology; moreover, experience outside the United States offers a fertile and heretofore largely untapped avenue to help inform national health security policy and practices.

[18] M. Schoch-Spana, B. Courtney, A. Norwood, "Expanding the Public's Role in Health Emergency Policy. *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science* Vol. 7, No. 1 (March 2009): 39-41.

4. IMPROVING THE RESOURCE BASE FOR NATIONAL HEALTH SECURITY

Improving and sustaining the Nation's health security will require a clear strategy for providing required resources and overcoming a number of current resource challenges. First, government-wide funding for health security is spread across many different agencies and programs at the national to local levels and would benefit from stronger coordination. Moreover, governmental funding has been inconsistent over time; ebbs and flows in funding priorities and levels have often left local, state, territorial, and tribal agencies reluctant to make long-term commitments to the staff and activities required to develop and maintain robust national health security capabilities. Finally, health security requires partnerships among governmental agencies, non-governmental organizations, academia, private businesses, and communities; and there is currently little activity to promote this type of partnership. One way to promote this type of partnership would be to require or encourage the formation of such partnerships in grant guidances.

Principles

Thus, implementation of the National Health Security Strategy will require

- Improving the coordination of and streamlining federal funding sources for national health security
- Developing incentives and supports for non-governmental investments in health security
- Identifying and disseminating promising practices for governmental and non-governmental resource coordination
- Developing workable funding sources for non-governmental partners
- Employing sound fiscal management, accounting, and budgeting principles.

Next Steps

Further implementation planning during the nine-month interim period from January 2010 through September 2010 should include the following activities:

- Analyze existing funding streams across governments for health security in order to identify overlaps and opportunities for partnerships across programs to streamline and coordinate funding streams, application and reporting processes, and performance measurement. This analysis should lead to concrete recommendations for budget development

- Conduct an initial scan of opportunities and promising practices for building health security capacities and capabilities into routine public health systems and processes (e.g., concept of dual use)

- Review and identify opportunities to create incentives (e.g., through grant programs and the tax code) for non-governmental organizations to make or seek investments and engage in activities that contribute to the health security of their communities

- Identify promising approaches for coordinating governmental and non-governmental resources for health security (e.g., through mechanisms including regional consortia and public-private partnerships)

- Identify an appropriate mechanism for continuing to identify, collect, disseminate, and implement promising practices related to the topics listed above that does not place undue burdens on community governmental and non-governmental agencies and entities

- Review and evaluate policy and program design options for directly catalyzing non-governmental health security efforts in targeted areas through challenge grants aimed directly at non-governmental entities.

5. CONCLUSION

The National Health Security Strategy is a document of long-range vision and enormous potential not only to make our nation more secure, but to increase the quality of life for each individual citizen. In order to ensure the best chance of reaching its full potential, several preparatory activities must occur before the first *Biennial Implementation Plan* is published in September 2010. This *Interim Implementation Guide* outlines principles and next steps to guide efforts to implement the NHSS and develop a more detailed implementation plan during the first nine months of 2010. To this end, the *Interim Implementation Guide* covers eight initial activities to support the NHSS's implementation and describes relevant resource allocation. It also provides an overview of HHS's role in the NHSS's implementation and describes opportunities to solicit input from and involve other stakeholders in this process. After the nine-month interim period, a more detailed *Implementation Plan* that defines more fully the roles and responsibilities of the full range of stakeholders will be released concurrent with the revised TCL to continue efforts to achieve national health security.

APPENDIX A. EVALUATION OF PROGRESS

Evaluation of Progress—Assessment of Local, State, Territorial, Tribal, and Federal Progress As Measured Against Evidence-Based Benchmarks; Funding Charts from HPP and PHEP

This appendix includes a short summary of reports assessing the local, state, territorial, tribal, and federal health security progress. Each report summary identifies the level of the evaluation (e.g., federal or state). Next, this appendix includes a summary of the Hospital Preparedness Program (HPP) from 2002 to 2007. This section includes both the preparedness elements and the indicators and capabilities reported by the awardees. Finally, this appendix includes funding charts from HPP and PHEP.

Assessment of Local, State, Territorial, Tribal, and Federal Progress

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The Federal Response to Hurricane Katrina: Lessons Learned
The White House
February 2006

Available at: http://165.189.80.115/docview.asp?docid=6457&locid=97

The objective of this report was to review the response of the federal government to Hurricane Katrina; however, actions at the state and local levels that had bearing on federal decisions or operations were also included to provide full context. The scope of the review focuses on identifying systemic vulnerabilities and gaps in the federal government response and "fixing government." The report includes a comprehensive description of what happened during the federal response to Hurricane Katrina, beginning with a discussion of the magnitude and complexity of the response challenge. A National Preparedness "Primer" on the current federal framework is then provided to give the reader an understanding of how the current system was supposed to function. The report also includes an analytical, narrative chronology providing a detailed account of Hurricane Katrina as well as "Lessons Learned," which describes the 17 most critical challenges that were problematic before, during, and after Hurricane Katrina's landfall. The conclusion describes the imperative and remedies for fixing the problems that Hurricane Katrina exposed.

Public Health and Hospital Emergency Preparedness Programs: Evolution of Performance Measurement Systems to Measure Progress
GAO Report to Congressional Requesters, GAO-07-485R
March 2007

Available at: http://www.gao.gov/new.items/d07485r.pdf

HHS has distributed funds annually to 62 recipients, including all 50 states and four large municipalities, through cooperative agreements under two programs—CDC's Public Health Emergency Preparedness Program, and the Health Resources and Services Administration's (HRSA) National Bioterrorism Hospital Preparedness Program (HPP) (now administered by ASPR and renamed the Hospital Preparedness Program (HPP)). The common goal of CDC's and HRSA's preparedness programs is to improve state and local preparedness to respond to bioterrorism and other large-scale public health emergencies, such as natural disasters or outbreaks of infectious disease. Annually, both CDC and HRSA develop and issue program guidance for recipients that describes activities necessary to improve their ability to respond to bioterrorism and other public health emergencies and sets out requirements for measuring their performance. Each recipient is required to submit periodic reports that track progress in improving their preparedness. As a result of the nation's ineffective response to Hurricane Katrina and the need to prepare for a possible influenza pandemic, members of the Congress have raised questions about CDC's and HRSA's efforts to monitor the progress of their preparedness programs.

This report addresses (1) how CDC's and HRSA's performance measurement systems have evolved and (2) how CDC and HRSA are using these systems to measure the progress of their preparedness programs. The review and analysis are specific to federal government documents related to national security and emergency preparedness as well as to reports obtained from federal agencies. Additionally, interviews were conducted with officials from federal agencies that had evaluated CDC's and HRSA's public health and hospital preparedness programs, professional associations involved in emergency preparedness, and policy research organizations that had published assessments or evaluations of public health and hospital preparedness programs. CDC and HRSA documents were analyzed and officials interviewed to determine how they have developed and implemented performance management systems for their cooperative agreement programs, including recipient reporting requirements, and systems for collecting data from recipients. Additionally, other CDC and HRSA documents were analyzed to identify procedures in place for management review of program progress and for providing feedback and suggestions for program improvements to recipients. This report did not include an evaluation of the actual performance measures adopted by CDC or HRSA or examine the accuracy or completeness of recipients' self-reported data as contained in the progress reports they are required to submit to CDC or HRSA.

Draft BARDA [Biomedical Advanced Research and Development Authority] Strategic Plan for Medical Countermeasure Research, Development, and Procurement (Draft BARDA Strategic Plan)
Office of the Assistant Secretary for Preparedness and Response (ASPR) / Biomedical Advanced Research and Development Authority (BARDA)

July 2007

Available at: http://www.hhs.gov/aspr/barda/documents/draftbardaplan.pdf

ASPR/BARDA prepared a draft BARDA Strategic Plan for review by interested stakeholders in 2007; a final version of this document is being completed now for publication in early 2010. BARDA was developed to facilitate the research, development, and acquisition of medical countermeasures for chemical, biological, radiological, and nuclear (CBRN) agents and emerging infectious diseases, including pandemic influenza. BARDA establishes systems that encourage and facilitate the development and acquisition of medical countermeasures, such as vaccines, therapeutics, and diagnostics, as well as innovative approaches to meet the threat of CBRN agents and emerging infectious diseases, including pandemic influenza, in support of the mission and priorities of the HHS Public Health Emergency Medical Countermeasures Enterprise (HHS PHEMCE).

The strategic plan has four goals: (1) BARDA will align with and coordinate the execution of the medical countermeasure goals articulated in the *HHS Pandemic Influenza Plan*; (2) BARDA will align with and coordinate the execution of the medical countermeasure goals articulated in the *HHS Public Health Emergency Medical Countermeasures Enterprise Strategy for Chemical, Biological, Radiological, and Nuclear Threats*; (3) BARDA, in concert with federal partners, will create a roadmap for execution of the *HHS Public Health Emergency Medical Countermeasures Enterprise Implementation Plan for Chemical, Biological and Nuclear Threats*; and (4) BARDA, in concert with federal partners, will establish programs that promote innovation in medical countermeasure development.

NDMS Joint Review Phases 1–3 and Surge Capacity Concept Plan
Phase 1: November 2007
Phase 2: July 2009
Phase 3: August 2009

Available at: No Website Available

This Joint Review of the National Disaster Medical System (NDMS) assessed NDMS using a three-phased approach. The first phase consisted of an "as-is" assessment of the current state of NDMS, including the three major components of medical response, patient evacuation, and definitive care. The second phase included a requirements analysis and corresponding gap analysis of NDMS that outlined recommendations. The third phase consisted of the development of an implementation plan for the Phase 2 recommendations. This review was directed by the HHS Secretary, in coordination with the Secretary of Homeland Security, the Secretary of Defense, and the Secretary of Veterans Affairs.

Phase 1: This report provides a picture of the current NDMS operating environment and describes the core components of NDMS: Medical Response, Patient Evacuation, and

Definitive Care. This assessment also includes descriptions of Telemedicine Capabilities and Initiatives, and a summary of state and local perspectives on the NDMS ability to meet the missions requested of them.

Phase 2: This report includes a series of recommendations from stakeholders and partners for improvements in NDMS to close identified gaps.

Phase 3: This report will include a roadmap (Action Plan) outlining the key strategic initiatives that should be considered to move forward and implement the enhancements outlined in the recommendations of the Joint Review. The NDMS roadmap highlights areas of emphasis and serves as guidance for action.

Concept Plan: HSPD-21, Public Health and Medical Preparedness, required the development of a concept plan for identifying and coordinating federal, state, and local government and private-sector public health and medical disaster response resources. The Concept Plan is intended to build upon a thorough review of the NDMS and to develop strategies and collaborative relationships that extend beyond those more narrowly defined by the existing NDMS partnerships and capabilities.

Public Health Preparedness: Mobilizing State by State
A CDC Report on the Public Health Emergency Preparedness Cooperative Agreement
February 2008

Available at:
http://www.emergency.cdc.gov/publications/feb08phprep/pdf/feb08phprep.pdf

The events of September 11, 2001, and the subsequent anthrax attacks both highlighted the importance of public health departments 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 to support preparedness nationwide in local, state, territorial, and tribal 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 and also describes how CDC and its partners are working to address these challenges.

Influenza Pandemic: **Federal Agencies Should Continue to Assist States to Address Gaps in Pandemic Planning**
GAO Report to Congressional Requesters—GAO-08-539
June 2008

Available at: http://www.gao.gov/new.items/d08539.pdf

The *Implementation Plan for the National Strategy for Pandemic Influenza* states that in an influenza pandemic, the primary response will come from states and localities. To assist them with pandemic planning and exercising, Congress has provided $600 million to states and certain localities. The Department of Homeland Security established five federal influenza pandemic regions to work with states to coordinate planning and response efforts.

In this report, GAO (1) describes how selected states and localities are planning for an influenza pandemic and who they have involved, (2) describes the extent to which selected states and localities have conducted exercises to test their influenza pandemic planning and incorporated lessons learned as a result, and (3) identifies how the federal government can facilitate or help improve state and local efforts to plan and exercise for an influenza pandemic. GAO conducted site visits to five states and ten localities.

Emergency Preparedness: States Are Planning for Medical Surge, but Could Benefit from Shared Guidance for Allocating Scarce Medical Resources
GAO Report to Congressional Requesters
June 2008

Available at: http://www.gao.gov/new.items/d08668.pdf

Potential terrorist attacks and the possibility of naturally occurring disease outbreaks have raised concerns about the "surge capacity" of the nation's health care systems to respond to mass casualty events. GAO identified four key components of preparing for medical surge: (1) increasing hospital capacity, (2) identifying alternative care sites, (3) registering medical volunteers, and (4) planning for altering established standards of care. HHS is the primary agency for hospital preparedness, including medical surge. In this report, GAO describes (1) what assistance the federal government has provided to help states prepare for medical surge, (2) what states have done to prepare for medical surge, and (3) what concerns states have identified related to medical surge. GAO reviewed documents from the 50 states and federal agencies. GAO also interviewed officials from a sample of 20 states and from federal agencies, as well as from emergency preparedness experts.

Assessment of States' Operating Plans to Combat Pandemic Influenza
Report to Homeland Security Council
January 2009

Available at: http://www.pandemicflu.gov/plan/states/state_assessment.pdf

Pandemic influenza could produce a public health emergency that is more daunting than any other type of naturally occurring, accidental, or terrorist-instigated event that our nation has experienced or is likely to experience. Pandemic influenza preparedness is a shared responsibility among all levels of government (local, state, and federal), the private sector (for-profit and nonprofit entities), and individuals and their households. Each entity must (1) understand its unique role (i.e., the ones that only it can fulfill) in preparing for, responding to, and recovering from an influenza pandemic, and (2) address its respective challenges to the best of its abilities and resources.

This report discusses the status of the Governments of the States', the District of Columbia's, and the U.S. Territories' respective operating plans for performing critical state-level functions during and after an influenza pandemic. The report summarizes the status of states' operating plans with respect to preparedness for, response to, and recovery from an influenza pandemic. This assessment fulfilled a requirement (Action #6.1.1.2) established by the Homeland Security Council, Executive Office of the President of the United States, in its *National Strategy for Pandemic Influenza: Implementation Plan*.

Initial Evaluation of the Cities Readiness Initiative
Technical Report, RAND Corporation
January 2009

Available at: http://www.rand.org/pubs/technical_reports/TR640/

The Cities Readiness Initiative (CRI) was created in 2004 to help the nation's largest metropolitan areas develop the ability to provide life-saving medications in the event of a large-scale biological terrorist attack or naturally occurring disease outbreak. In 2007, CDC asked RAND to provide an initial evaluation of the impact of CRI on awardees' readiness and capability to conduct mass countermeasure dispensing above and beyond what would be the case without the program. The subsequent study drew on available empirical evidence, including data from the Technical Assistance Review, a CDC-administered assessment of jurisdictions' capabilities in 12 core functional areas associated with countermeasure distribution and dispensing, as well as qualitative data collected through discussions with personnel involved with countermeasure dispensing in nine metropolitan areas (both CRI awardees and non-CRI jurisdictions). The evaluation showed that, overall, CRI awardees had benefited from the program's preparedness guidance and scenario focus and that the program had strengthened or encouraged the development of partnerships with other stakeholders. The program also encouraged a variety of changes to awardees' training plans and had spillover effects on non-CRI sites. However, this evaluation did not address questions of how the documented benefits compare with the program costs. This report should be of interest to those seeking to understand the operations of public health preparedness and homeland security programs, as well as to those interested in developing feasible approaches to evaluating these programs' effectiveness.

Hospitals Rising to the Challenge: The First Five Years of the U.S. Hospital Preparedness Program and Priorities Going Forward
Center for Biosecurity of UPMC
March 2009

Available at: http://www.upmc-biosecurity.org/website/resources/publications/2009/2009-04-16-hppreport.html

Established by the HHS in 2002, HPP has the goal of enhancing the ability of hospitals and healthcare systems to prepare for and respond both to bioterror attacks on civilians and to other public health emergencies, including pandemic influenza and natural disasters. Current HPP priorities include strengthening hospital capabilities in the areas of interoperable communication systems, bed tracking, personnel management, fatality management planning, and hospital evacuation planning. Past priorities include improving bed and personnel surge capacity, decontamination capabilities, isolation capacity, pharmaceutical supplies, training, education, drills, and exercises.

In 2007, ASPR contracted with the Center for Biosecurity of the University of Pittsburgh Medical Center to conduct an assessment of U.S. hospital preparedness and to develop recommendations for evaluating and improving future hospital preparedness efforts. The first deliverable was the Center's *Descriptive Framework for Healthcare Preparedness for Mass Casualty Events*, which provided a description of the most important components of preparedness for mass casualty response at the local and regional hospital and health care system levels.

This report, *Hospitals Rising to the Challenge: The First Five Years of the U.S. Hospital Preparedness Program and Priorities Going Forward*, was the second deliverable under the contract. It is the Center's assessment of the impact of the HPP on hospital preparedness from the time of the program's establishment in 2002 through mid-2007, as well as the preliminary recommendations for improving the state of U.S. hospital preparedness going forward. This evaluation report involved extensive analyses of the published literature, government reports, and HPP program assessments, as well as detailed conversations with 133 health officials and hospital professionals representing every state, the largest cities, and major territories of the United States.

Personal Preparedness in America: Findings from the Citizen Corps National Survey
National Office of Citizen Corps—FEMA Community Preparedness Division
June 2009

Available at: http://www.citizencorps.gov/pdf/Personal_Preparedness_In_America-Citizen_Corps_National_Survey.pdf

Disaster preparedness became a renewed priority for our nation as a direct response to the devastation of September 11, 2001. Following the tragedies of that day, government at all levels has imbedded stronger collaboration with non-governmental civic and private

sector organizations and the general public in policies and practices. The Citizen Corps grassroots model of community preparedness has spread across the country, and Americans have been asked to become fully aware, trained, and practiced on how to respond to potential threats and hazards.

To evaluate the nation's progress on personal preparedness, the Federal Emergency Management Agency's (FEMA's) Community Preparedness Division and Citizen Corps conducted national household surveys to measure the public's knowledge, attitudes, and behaviors relative to preparing for a range of hazards. This report provides a summary of the findings from the 2007 Citizen Corps National Survey.

Healthcare Facilities Partnership Program Evaluation Report
Center for Biosecurity of UPMC
August 2009

Available at: No Website Available—Draft HFPP Report

In 2006, the Pandemic and All-Hazards Preparedness Act authorized the Healthcare Facilities Partnership and Emergency Care Partnership Programs. These programs provide competitive grant opportunities to eligible entities to enhance community and hospital preparedness and to promote surge capacity for public health emergencies in specific geographic areas. In 2007, ASPR contracted with the Center for Biosecurity of UPMC to evaluate the Healthcare Facilities Partnership Program (HFPP) and Emergency Care Partnership Program (ECP). The purpose of this evaluation was to assess the effectiveness, impact, and efficiency of the HFPP and ECP and to review best practices and identify lessons learned. Additionally, it requested an evaluation of the feasibility, advisability, and policy implications of adopting the partnership grant program model on a national level.

This report focuses only on the evaluation of HFPP, and a separate report on the ECP evaluation was scheduled to be available in October 2009. This report provides information useful for assessing the feasibility and effectiveness of the direct grant funding concept and for informing efforts to support the development and growth of health care partnerships.

State and Local Pandemic Influenza Preparedness: Medical Surge
Office of Inspector General, Department of Health and Human Services
September 2009

Available at: http://oig.hhs.gov/oei/reports/oei-02-08-00210.pdf

The objective of the Office of Inspector General (OIG) report was to determine the extent to which selected states and localities have (a) prepared for a medical surge in response to

an influenza pandemic and (b) conducted and documented exercises that test their medical surge preparedness for an influenza pandemic. The study focused on five key components of medical surge identified in the HPP and PHEP guidance, which include (1) coordination among stakeholders; (2) recruitment and management of medical volunteers; (3) acquisition and management of medical equipment; (4) identification of alternate care sites; and (5) identification of guidelines for altering triage, admission, and patient care. Most of the selected localities were in the early stages of planning and had not identified guidelines for altering triage, admission, and patient care. All of the selected localities had established partnerships, had acquired limited medical equipment for a pandemic, and had conducted medical surge exercises. Finally, fewer than half of those selected had started to recruit medical volunteers.

Study recommendations for ASPR in collaboration with CDC are to work with states and localities to improve their efforts within each of the five components of medical surge that were reviewed. Specifically, these include: (1) coordination of diverse stakeholders; (2) recruiting, registering, and training volunteers; (3) managing medical equipment stockpiles; (4) planning for alternative care sites; and (5) identifying and adopting guidelines for altering triage, admission, and patient care. Other recommendations include ensuring that states and localities consistently document the lessons learned from preparedness exercises for medical surge, address legal protections for medical professional and volunteers, facilitate the sharing of information and emerging practices among states and localities, and provide training and technical assistance to states and localities on key issues.

Update on the Strategic Plan for Countermeasure Research, Development, and Procurement
BARDA
November 2009

Available at: http://www.hhs.gov/aspr/barda/documents/draftbardaplan.pdf

Background

Section 401(b) of the Pandemic and All-Hazards Preparedness Act (PAHPA), Public Law 109-417, requires the Secretary of HHS to: (1) develop and make public a strategic plan to guide and facilitate the research, development, innovation, and procurement of medical countermeasures[19] for CBRN agents and emerging infectious diseases, including pandemic influenza; (2) carry out such activities as may be practicable to disseminate the information contained in such a strategic plan to stakeholders who may have the capacity to substantially contribute to the activities described in such a strategic plan; and (3)

[19] Medical countermeasures include qualified countermeasures as defined in section 319F–1(a) of the Public Health Service Act (42 U.S.C. section 247d–6a(a)); qualified pandemic or epidemic products as defined in section 319F–3 of the Public Health Service Act (42 U.S.C. section 247d–6d)), and security countermeasures as defined in section 319F-2(c)(1)(B) of the Public Health Service Act (42 U.S.C. section 247d–6b).

update and incorporate such strategic plan as part of the National Health Security Strategy described in section 2802 of PAHPA.[20]

The strategic plan for medical countermeasure research, development, and procurement was initially due not later than six months after the date of enactment of the PAHPA (enacted December 19, 2006). On July 5, 2007, BARDA released the *Draft BARDA Strategic Plan for Medical Countermeasure Research, Development, and Procurement* (*Draft BARDA Strategic Plan*) to fulfill this requirement.[21] The *Draft BARDA Strategic Plan* notes that it represents "current thinking" within BARDA with respect to facilitating research, development, innovation, and procurement of medical countermeasures, in fulfillment of Section 401(b) of PAHPA, and that a final *BARDA Strategic Plan* will be updated, finalized, and made public after the appointment of a BARDA Director.[22]

Strategic Goals

The *Draft BARDA Strategic Plan* is built upon the framework established the *National Strategy for Pandemic Influenza*[23] and the *National Strategy for Medical Countermeasures against Weapons of Mass Destruction* (HSPD-18)[24] and lays out four strategic goals for BARDA with respect to medical countermeasure research, development, and procurement:

- **Goal 1.** BARDA will align with and coordinate the execution of the medical countermeasure goals articulated in the *HHS Pandemic Influenza Plan*.[25]
- **Goal 2.** BARDA will align with and coordinate the execution of the medical countermeasure goals articulated in the *HHS Public Health Emergency Medical*

[20] Pandemic and All-Hazards Preparedness Act, Public Law 109–417, 120 Stat. 2831 (2006).

[21] *Draft BARDA Strategic Plan for Medical Countermeasure Research, Development, and Procurement*, Washington, D.C.: U.S. Department of Health and Human Services, July 5, 2007 (accessed online 11/23/09 at http://www.hhs.gov/aspr/barda/documents/draftbardaplan.pdf).

[22] HHS announced its intentions to establish BARDA under ASPR in April 2007 (accessed online 12/23/09 at http://www.hhs.gov/news/press/2007pres/04/pr20070426d.html); Robin Robinson, Ph.D., was selected as the first BARDA Director on April 14, 2008 (accessed online 12/23/09 at http://www.hhs.gov/news/press/2008pres/04/20080414a.html).

[23] *National Strategy for Pandemic Influenza*, Washington, D.C.: White House, Homeland Security Council; December 2005 (accessed online 12/23/09 at http://www.flu.gov/professional/federal/pandemic-influenza.pdf).

[24] *Homeland Security Presidential Directive 18: Medical Countermeasures against Weapons of Mass Destruction*, Washington, D.C.: The White House; January 31, 2007 (accessed online 11/23/09 at http://www.dhs.gov/xabout/laws/gc_1219175362551.shtm).

[25] *HHS Pandemic Influenza Plan*, Washington, D.C.: U.S. Department of Health and Human Services. November 2005 (accessed online 11/23/09 at http://www.hhs.gov/pandemicflu/plan/pdf/HHSPandemicInfluenzaPlan.pdf).

Countermeasures Enterprise[26] *Strategy for Chemical, Biological, Radiological and Nuclear Threats*.[27]

- **Goal 3.** BARDA, in concert with federal partners, will create a roadmap for execution of the *HHS Public Health Emergency Medical Countermeasures Enterprise Implementation Plan for Chemical, Biological, Radiological and Nuclear Threats*.[28]
- **Goal 4.** BARDA, in concert with federal partners, will establish programs that promote innovation in medical countermeasure development.

The *Draft BARDA Strategic Plan* notes that with respect to implementation, BARDA will employ proven and successful approaches for the advanced development of medical countermeasures, such as milestone-driven contracts and incremental funding, to support multiple medical countermeasure candidates in the advanced stages of product development in order to stimulate competitive product development, enable flexible and sound product acquisition decisions, and mitigate risk.

Stakeholder Outreach

The Draft BARDA Strategic Plan notes that BARDA is committed to stakeholder outreach as a way to enable effective collaboration with domestic and international stakeholders among academia; industry; and federal, state, and local governments in order to maximize the transparency of HHS priorities, solicit feedback, and discuss the implementation of future medical countermeasure advanced development and acquisition programs. BARDA stakeholder outreach activities include

- **Annual HHS PHEMCE Stakeholders Workshop.** The BARDA office convenes a meeting with interested persons to communicate HHS priorities for medical countermeasure development and acquisition and to receive feedback that can be appropriately incorporated into future efforts. Stakeholder workshops have been conducted annually since 2006.[29]
- **Annual BARDA Industry Day.** The BARDA office provides an opportunity for industry representatives and other interested parties to demonstrate in an open meeting the operation of biodefense technologies relevant to vaccines,

[26] The HHS PHEMCE is a coordinated, intra-agency effort that leads the mission to develop and acquire medical countermeasures that will improve public health emergency preparedness as well as prevent and mitigate the adverse health consequences associated with CBRN threats and emerging infectious diseases, including pandemic influenza.

[27] *HHS Public Health Emergency Medical Countermeasure Enterprise Strategy for Chemical, Biological, Radiological, and Nuclear Threats,* Washington, D.C.: U.S. Department of Health and Human Services; April 2007 (accessed online 11/23/09 at http://www.hhs.gov/aspr/barda/documents/federalreg_vol72no53_032007notices.pdf).

[28] *HHS Public Health Emergency Medical Countermeasure Enterprise Implementation Plan for Chemical, Biological, Radiological, and Nuclear Threats,* Washington, D.C.: U.S. Department of Health and Human Services; April 2007 (accessed online 11/23/09 at http://www.hhs.gov/aspr/barda/documents/phemce_implplan_041607final.pdf).

[29] See https://www.medicalcountermeasures.gov/BARDA/PHEMCE/phemce.aspx

diagnostics, therapeutics, and non-pharmaceutical medical countermeasures. BARDA Industry Day has been held annually since 2007.[30]

- **Stakeholders Portal.** BARDA provides ongoing outreach to product developers through the stakeholders portal at www.MedicalCountermeasures.gov.[31] This web portal allows BARDA to centrally manage stakeholder requests for meetings with the U.S. government to discuss possible development of acquisition targets and to present medical countermeasure product information and provide interested persons with information on government-sponsored opportunities and events related to medical countermeasures.
- **BARDA Dialogues.** These dialogues represent an ongoing effort by BARDA staff to engage stakeholders regarding the implementation of the BARDA legislation.

Current Status

The final version of the *BARDA Strategic Plan* is expected to be published in early 2010.

Update on Vaccine Tracking and Distribution as per Section 319A of the Public Health Service Act, as amended
Secretary of HHS
November 2009

Available at: No Website Available

Section 319A of the Public Health Service Act, as amended, requires that as part of the National Health Security Strategy, as described in section 2802, the Secretary of HHS shall provide an update on the implementation of subsections (a) through (d).

a. Secretary may track initial distribution of federally purchased influenza vaccine in a pandemic

   To inform decision making regarding the 2009-H1N1 Flu vaccine campaign, the Centers for Disease Control and Prevention (CDC) receives daily updates from the contract vaccine distributor showing the number of doses available for ordering. When the CDC receives these updates, the CDC allocates the available doses to the 62 CDC Public Health Emergency Response (PHER) grantees on a pro rata basis. CDC provides daily updates to the grantees on the number of doses allocated / available for them to order. The CDC receives orders from grantees and forwards those orders to the vaccine distributor. The vaccine distributor provides daily updates to the CDC showing the number of doses shipped to each grantee. The aggregate

[30] See https://www.medicalcountermeasures.gov/BARDA/PHEMCE/phemce.aspx
[31] See https://www.medicalcountermeasures.gov/Default.aspx

number of doses allocated / available is posted on the CDC's web site daily (http://www.cdc.gov/h1n1flu/vaccination/vaccinesupply.htm). The number of doses shipped to each grantee is updated on the CDC web site each Friday. The CDC does not provide demographic data for high priority populations along with vaccine distribution data, rather, the CDC advises grantees to refer to census data for the most recent estimates of high priority populations.

b. Secretary shall promote communication between State, local, and tribal public health officials and manufacturers, wholesalers, and distributors regarding effective distribution of seasonal influenza vaccine

CDC's FluFinder provides information to state and local health officials regarding distribution of seasonal influenza vaccine. FluFinder helps provide visibility about the vaccine supply / distribution for public health decision making and management of supply issues.

In response to a shortfall of seasonal influenza vaccine, in October 2004 CDC began tracking seasonal influenza vaccine to provide distribution information to state and local public health officials. Tracking during the 2004–2005 season focused on inactivated (injectable) influenza vaccine produced and distributed by Sanofi Pasteur (formerly Aventis Pasteur), which represented approximately 95 percent of the doses available that season. CDC provided access to the secure system for a limited number of state and local health officials in each jurisdiction.

In 2005, CDC reached out to Chiron's major influenza vaccine distributors to enlist their participation. CDC updated the system as data were submitted during the season, and a key lesson learned during the 2005–2006 season was the need for public health officials to have access to vaccine distribution data as early in the distribution process as possible.

Since the 2005–2006 season, FluFinder has evolved to include all U.S.-licensed vaccine products (intranasal vaccine and injectable vaccines), and distribution data are available to state and local health officials each week from mid-September through the end of January. Influenza vaccine distribution data in FluFinder is proprietary and is voluntarily submitted by the six U.S.-licensed influenza vaccine manufacturers and the major influenza vaccine distributors. The data support state and local health officials' management of seasonal influenza vaccine supply.

In addition, in the context of the current influenza season, communications with stakeholders have included guidance for high priority populations to receive the 2009-H1N1 Flu vaccine as it becomes available. These guidelines can be found on CDC's website at http://www.cdc.gov/h1n1flu/vaccination/acip.htm.

c. The information submitted to the Secretary related to vaccine distribution information shall remain confidential

The Department adheres to all applicable law regarding confidentiality, including but not limited to, the Freedom of Information Act (FOIA), the Trade Secrets Act, and the Health Insurance Portability and Accountability Act (HIPAA).

In addition, compliance with Section 319A of the Public Health Service Act, as amended by the Pandemic and All-Hazards Preparedness Act of 2006, and all other applicable law includes ensuring that no proprietary data is inappropriately disclosed. Information provided to the Secretary by a manufacturer, wholesaler, or distributor is not disclosed without consent to another manufacturer, wholesaler, or distributor, or used in any manner to give a manufacturer, wholesaler, or distributor a proprietary advantage.

d. the Secretary shall develop guidelines for (a) and (b)

As described above under subsections (a) and (b), CDC has established processes for collecting and disseminating both 2009-H1N1 Flu and seasonal influenza vaccine availability data. CDC as a matter of practice protects proprietary information, and therefore, the Department has not found the need to develop guidelines to protect proprietary information related to influenza vaccine.

Summary of the Hospital Preparedness Program from 2002 to 2007 According to the Preparedness Elements and the Indicators and Capabilities Reported by the Awardee

The relative progress of key elements of the HPP since its inception in 2002 was compared to more recent markers as reported in the end-of-year (EOY) report for fiscal year (FY) 2007. Notable progress has been demonstrated in the key areas of state participation, surge capacity, the ability to decontaminate, personnel training, isolation capacity, and the engagement in drills and exercises (Table A.1). The elements reflect broad categories that may not share exactly the same measures, but share a similar emphasis. According to the EOY 2007 reporting cycle, the states reported that 83% of hospitals participated in the HPP, had a surge capacity ability of about 300,000, trained over 700,000 health care personnel, and engaged over 85% of participating hospitals in the exercise of an incident.

Table A.1 Elements of Preparedness within Hospital Preparedness Program, Fiscal Years 2002 and 2007

Preparedness Element	FY 2002*	FY 2007*^
Participation	Limited infrastructure for integrated and coordinated hospital preparedness activities among hospitals in the U.S.	In the U.S., 83% of all hospitals participated in NHPP
Surge Bed Capacity	No known surge bed capacity among hospitals in the U.S.	Hospitals participating in the HPP program reported the ability to surge nearly 300,000 beds above the current daily staffed bed capacity within a 24-hour period
Decontamination	Two-thirds (66%) of hospitals reported the ability to handle less than nine patients an hour through a 5-minute decontamination shower per 100 staffed beds	Nearly 400,000 persons could be decontaminated nationwide over a 3-hour period
Personnel Training	Seven out of ten hospitals trained their staff to diagnose biological-agent-related illnesses, with unknown extensiveness of the training	Over 700,000 health care personnel nationwide were trained in competency-based programs in FY 2007
Isolation Capacity	Half of all hospitals reported having fewer than four isolation beds per 100 staffed beds	Over 90% of hospitals (4,655) in the U.S. reported the capacity to maintain at least one suspected infectious disease case in negative pressure isolation
Drills and Exercises	About half of all hospitals had participated in drills or tabletop exercises focused on a biological attack during the past two years	Of the participating hospitals, over 85% engaged in an exercise of an incident and nearly 80% prepared After Action Reports within 60 days of the drill or exercise

**The data are based on HPP Fiscal Year 2002 final and 2007 EOY reports.*
^The FY 2007 EOY reports were provided to ASPR in December 2008.

To provide a snapshot, the FY 2006 and 2007 EOY reports were used. The Cooperative Agreement with the state for FY 2006 began on September 1, 2006, and ended on August 31, 2007. The performance measures and data elements were developed subsequent to the program guidance and were released with an Excel database template prior to reporting deadlines. The data elements requested in the spreadsheet were divided into three groups, including performance measurement data, program measurement data and sentinel indicators. For FY 2007, the reports were submitted at the end of December 2008 and the data included demographic capabilities, data elements, and performance measures. In determining the percentage of hospitals meeting the requirements of the element, the total number of hospitals was used as the denominator. Either the total number of states (n=50) or the total number of awardees (N=62) were used.
The total number of hospitals reported by all HPP awardees was 5,832 and 6,127, for FYs 2006 and 2007, respectively; however, the percentage of participating hospitals was 87% and 83% (Table A.2). Between the FYs 2006 and 2007 data points, some states reported slight changes while some reported more than 5% differences. For example, the

percentage of hospitals that have reported available beds (according to HAvBED definitions) to State Emergency Operating Centers, within 60 minutes of a request by the state, was, respectively, 84% and 94%. The percentage of hospitals that have participated in a preparedness exercise or incident was 84% and 89%. Some elements remained unchanged or changed just slightly. For example, hospitals' ability to demonstrate dedicated, redundant, interoperable communication during an exercise or incident, was reported as 91% for both years; if the hospitals developed improvement plans based on after action reports with HPP funds, ability was 70% for both years; and hospitals that have adopted the national incident command structure reached 89% and 91%, respectively.

Elements that measure the performance of the awardees to demonstrate the ability to report an electronically verified list of available volunteer health professionals within 24 hours of request were 73% in FY 2006 and 89% in FY 2007. Awardees that demonstrated the ability to report available beds data (according to HAvBED definitions) within four hours of a request were 81% and 98%. The ability to demonstrate reporting of hospital beds data was unchanged from FY 2006 to FY 2007.

Table A.2 Hospital and Awardees Preparedness Indicators and Capabilities, by States and Awardees, Fiscal Years 2006 and 2007

Indicators and Capabilities	2006				2007			
	States		Awardees*		States		Awardees*	
Hospital	Sum n	Percent %	Sum N	Percent %	Sum n	Percent %	Sum N	Percent %
Total number of hospitals statewide	5,550	-	5,832	-	5,825	-	6,127	-
Total number of participating hospitals statewide	4,846	87	5,067	87	4,840	83	5,079	83
Total number of hospitals that have adopted incident command structure for handling emergency events	4,276	88	4,485	89	4,400	91	4,637	91
Total number of hospitals that have reported available beds, according to HAvBED definitions, to the State Department Health Emergency Operating Center, within 60 minutes of a request, during an event	4,043	83	4,233	84	4,457	92	4,684	92
Total number of hospitals that have demonstrated dedicated, redundant communication during an exercise or incident	4,454	92	4,633	91	4,431	92	4,619	91
Total number of hospitals that have fatality management plans	-	-	-	-	3,058	63	3,160	62
Total number of hospitals that have evacuation plans	-	-	-	-	3,820	79	4,049	80
Total number of hospitals that have participated in an exercise or incident during the reporting period	4,248	88	4,246	84	4,277	88	4,496	89
Total number of hospitals that have developed improvement plans based on after-action reports	3,564	74	4,001	79	3,806	79	3,991	79
Awardees*								
Awardees that demonstrated ability to report a verified list of available volunteer health professionals within 24 hours of a request issued by a requesting body or the HHS Secretary Operations Center (SOC).	37	74	45	73	46	92	55	89
Awardees that reported the number of hospital beds, defined as staffed and available on a day-to-day basis.	49	98	60	97	50	100	60	97
Awardees that can report available beds, according to HAvBED definitions, to the HHS SOC or other federal partners within four hours of a request, during an exercise or incident.	41	82	50	81	50	100	61	98

Source: 2006 and 2007 EOY Reports, Hospital Preparedness Program, Assistant Secretary for Preparedness and Response, U.S. Department of Health and Human Service.

**Awardees include all of the 50 states, four metropolitan areas, and eight territories.*

FUNDING CHARTS FROM HPP AND PHEP

PAHPA specifies that the NHSS shall include an evaluation of progress toward evidence-based benchmarks of preparedness, which should include state-specific breakdowns of obligated funding spent by major category (as defined by the Secretary) for awards made under HPP and PHEP. The *Interim Implementation Guide* includes the following state-specific breakdowns of obligated funding by program area. Subsequent submissions of the NHSS will provide breakdowns by the major strategic objectives (or goals) of the NHSS.

Table A.3 FY 2009 Public Health Emergency Preparedness Cooperative Agreement Awards, by Awardee, Year, and Major Category

STATE / CITY / TERRITORY GRANTEE	Total Base Plus Population Funding	FY 2009 Cities Readiness Funding	FY 2009 Level 1 Chemical Lab Supplement	FY 2009 EWIDS Funding	FY 2009 Total Published Amounts
STATE					
Alabama	$9,634,114	$350,817	$0	$0	$9,984,931
Alaska	$4,800,000	$200,000	$0	$15,000	$5,015,000
Arizona	$11,894,931	$1,288,173	$0	$475,290	$13,658,394
Arkansas	$7,054,691	$224,812	$0	$0	$7,279,503
California	$41,239,981	$6,026,193	$939,845	$1,135,736	$49,341,755
Colorado	$9,856,760	$780,643	$0	$0	$10,637,403
Connecticut	$8,055,697	$648,709	$0	$0	$8,704,406
Delaware	$4,632,380	$367,620	$0	$0	$5,000,000
District of Columbia	$5,838,859	$622,500	$0	$0	$6,461,359
Florida	$29,094,714	$3,235,898	$576,000	$0	$32,906,612
Georgia	$16,507,511	$1,638,679	$0	$0	$18,146,190
Hawaii	$4,854,334	$290,173	$0	$0	$5,144,507
Idaho	$5,115,380	$200,000	$0	$15,000	$5,330,380
Illinois	$17,423,079	$2,547,840	$0	$15,000	$19,985,919
Indiana	$12,107,270	$856,931	$0	$15,000	$12,979,201
Iowa	$7,301,666	$238,767	$0	$0	$7,540,433
Kansas	$6,987,186	$459,359	$0	$0	$7,446,545

STATE (cont'd)	Total Base Plus Population Funding	FY 2009 Cities Readiness Funding	FY 2009 Level 1 Chemical Lab Supplement	FY 2009 EWIDS Funding	FY 2009 Total Published Amounts
Kentucky	$9,067,274	$443,231	$0	$0	$9,510,505
Louisiana	$9,185,117	$571,246	$0	$0	$9,756,363
Maine	$4,906,374	$200,000	$0	$76,963	$5,183,337
Maryland	$11,100,702	$1,589,340	$0	$0	$12,690,042
Massachusetts	$12,285,669	$1,462,035	$576,000	$0	$14,323,704
Michigan	$17,562,993	$1,425,240	$896,397	$238,912	$20,123,542
Minnesota	$10,453,558	$991,880	$576,000	$33,842	$12,055,280
Mississippi	$7,198,462	$269,429	$0	$0	$7,467,891
Missouri	$11,428,130	$1,047,684	$0	$0	$12,475,814
Montana	$4,800,000	$200,000	$0	$19,036	$5,019,036
Nebraska	$5,550,822	$223,560	$0	$0	$5,774,382
Nevada	$6,599,808	$693,153	$0	$0	$7,292,961
New Hampshire	$4,896,740	$332,752	$0	$15,000	$5,244,492
New Jersey	$15,585,202	$2,662,654	$0	$0	$18,247,856
New Mexico	$5,819,515	$260,497	$683,461	$89,668	$6,853,141
New York	$18,999,891	$1,954,586	$886,334	$330,193	$22,171,004
North Carolina	$15,775,533	$448,959	$0	$0	$16,224,492
North Dakota	$4,800,000	$200,000	$0	$23,393	$5,023,393
Ohio	$19,557,056	$1,740,124	$0	$15,000	$21,312,180
Oklahoma	$8,163,023	$373,882	$0	$0	$8,536,905
Oregon	$8,338,354	$546,562	$0	$0	$8,884,916
Pennsylvania	$20,945,631	$2,014,731	$0	$15,000	$22,975,362
Rhode Island	$4,659,518	$340,482	$0	$0	$5,000,000
South Carolina	$9,233,414	$287,922	$576,000	$0	$10,097,336
South Dakota	$4,800,000	$200,000	$0	$0	$5,000,000
Tennessee	$11,710,990	$784,547	$0	$0	$12,495,537
Texas	$36,910,043	$4,300,989	$0	$1,605,920	$42,816,952
Utah	$6,678,473	$340,517	$0	$0	$7,018,990
Vermont	$4,800,000	$200,000	$0	$42,969	$5,042,969
Virginia	$14,024,882	$1,675,130	$913,961	$0	$16,613,973
Washington	$12,225,957	$1,175,941	$0	$160,078	$13,561,976
West Virginia	$5,623,148	$216,087	$0	$0	$5,839,235
Wisconsin	$11,015,276	$571,303	$576,000	$15,000	$12,177,579

STATE (cont'd)	Total Base plus Population Funding	FY 2009 Cities Readiness Funding	FY 2009 Level 1 Chemical Lab Supplement	FY 2009 EWIDS Funding	FY 2009 Total Published Amounts
Wyoming	$4,800,000	$200,000	$0	$0	$5,000,000
STATE SUBTOTAL	$561,900,108	$49,921,577	$7,199,998	$4,352,000	$623,373,683
CITY					
Chicago	$9,087,074	$1,612,500	$0	$0	$10,699,574
Los Angeles	$19,350,135	$3,172,636	$0	$0	$22,522,771
New York City	$16,849,333	$3,825,000	$0	$0	$20,674,333
CITY SUBTOTAL	$45,286,542	$8,610,136	$0	$0	$53,896,678
TERRITORY					
American Samoa	$383,368	$0	$0	$0	$383,368
Guam	$546,695	$0	$0	$0	$546,695
Marshall Islands	$387,201	$0	$0	$0	$387,201
Micronesia	$455,796	$0	$0	$0	$455,796
Northern Mariana Islands	$418,947	$0	$0	$0	$418,947
Palau	$329,686	$0	$0	$0	$329,686
Puerto Rico	$8,665,828	$0	$0	$0	$8,665,828
Virgin Islands (U.S.)	$456,664	$0	$0	$0	$456,664
TERRITORY SUBTOTAL	$11,644,185	$0	$0	$0	$11,644,185
TOTAL FY 2009 PHEP FUNDING	**$618,830,835**	**$58,531,713**	**$7,199,998**	**$4,352,000**	**$688,914,546**

* Allocation is based on the FY 2009 Omnibus enact numbers
* Funding aligns with a 12-month budget cycle
* EWIDS = Early Warning Infectious Disease Surveillance

Table A.4 Public Health Emergency Preparedness Cooperative Agreement Awards, by Awardee and Year

STATE / CITY / TERRITORY AWARDEE	FY 2006 PHEP SUPPLEMENT	FY 2007 PHEP TOTAL AWARD	FY 2008 PHEP TOTAL AWARD	FY 2009 PHEP TOTAL AWARD	FY 2009 PHER PHASE I	FY 2009 PHER PHASE II	FY 2009 PHER PHASE III	TOTAL BY STATE
STATE								
Alabama	$1,595,205	$12,951,862	$10,241,093	$9,984,931	$3,934,220	$3,981,585	$13,144,433	$55,833,329
Alaska	$657,647	$5,838,752	$5,015,000	$5,015,000	$573,193	$1,861,553	$3,623,681	$22,584,826
Arizona	$1,856,742	$17,681,799	$14,227,671	$13,658,394	$5,274,949	$4,827,276	$16,942,309	$74,469,140
Arkansas	$1,163,333	$9,389,730	$7,435,489	$7,279,503	$2,404,548	$3,016,715	$8,811,345	$39,500,663
California	$6,723,207	$65,303,030	$50,161,370	$49,341,755	$22,677,408	$15,804,211	$66,238,117	$276,249,098
Colorado	$1,605,882	$14,009,943	$11,141,885	$10,637,403	$4,066,256	$4,064,869	$13,518,450	$59,044,688
Connecticut	$1,347,950	$11,324,491	$8,927,705	$8,704,406	$2,998,173	$3,391,156	$10,492,903	$47,186,784
Delaware	$698,960	$5,911,494	$5,000,000	$5,000,000	$730,103	$1,960,526	$4,068,155	$23,369,238
District of Columbia	$635,601	$9,898,127	$6,698,743	$6,461,359	$497,467	$1,313,787	$2,409,172	$27,914,256
Florida	$4,633,819	$42,467,775	$32,940,501	$32,906,612	$15,474,914	$11,261,100	$45,835,672	$185,520,393
Georgia	$2,609,920	$23,156,267	$18,689,009	$18,146,190	$8,010,341	$6,552,677	$24,690,834	$101,855,238
Hawaii	$803,669	$6,418,428	$5,228,184	$5,144,507	$1,099,673	$2,193,640	$5,115,037	$26,003,138
Idaho	$832,432	$6,637,005	$5,405,739	$5,330,380	$1,254,481	$2,291,288	$5,553,559	$27,304,884
Illinois	$2,878,268	$24,575,584	$19,912,211	$19,985,919	$8,553,300	$6,895,159	$26,228,868	$109,029,309
Indiana	$2,007,596	$16,965,990	$13,335,867	$12,979,201	$5,400,873	$4,906,704	$17,299,011	$72,895,242
Iowa	$1,215,422	$9,779,223	$7,702,063	$7,540,433	$2,551,012	$3,109,100	$9,226,230	$41,123,483
Kansas	$1,162,607	$9,548,746	$7,598,339	$7,446,545	$2,364,516	$2,991,464	$8,697,946	$39,810,163
Kentucky	$1,501,451	$12,441,275	$9,750,535	$9,510,505	$3,598,068	$3,769,550	$12,192,218	$52,763,602
Louisiana	$1,592,758	$13,243,221	$9,998,186	$9,756,363	$3,667,952	$3,813,631	$12,390,180	$54,462,291
Maine	$818,369	$6,526,615	$5,271,144	$5,183,337	$1,130,535	$2,213,106	$5,202,457	$26,345,563
Maryland	$1,840,470	$16,047,435	$13,038,391	$12,690,042	$4,803,949	$4,530,183	$15,608,109	$68,558,579
Massachusetts	$2,061,287	$18,039,564	$14,805,770	$14,323,704	$5,506,668	$4,973,437	$17,598,697	$77,309,127
Michigan	$2,951,805	$26,992,552	$20,453,241	$20,123,542	$8,636,273	$6,947,495	$26,463,905	$112,568,813
Minnesota	$1,731,493	$15,591,573	$12,616,406	$12,055,280	$4,420,173	$4,288,110	$14,520,992	$65,224,027

STATE (cont'd)	FY 2006 PHEP SUPPLEMENT	FY 2007 PHEP TOTAL AWARD	FY 2008 PHEP TOTAL AWARD	FY 2009 PHEP TOTAL AWARD	FY 2009 PHER PHASE I	FY 2009 PHER PHASE II	FY 2009 PHER PHASE III	TOTAL BY STATE
Mississippi	$1,200,982	$9,722,247	$7,629,747	$7,467,891	$2,489,808	$3,070,495	$9,052,862	$40,634,032
Missouri	$1,890,782	$16,566,343	$13,029,088	$12,475,814	$4,998,123	$4,652,662	$16,158,145	$69,770,957
Montana	$723,275	$5,982,934	$5,022,876	$5,019,036	$808,081	$2,009,713	$4,289,046	$23,854,961
Nebraska	$922,515	$7,324,391	$5,877,064	$5,774,382	$1,512,711	$2,454,172	$6,285,045	$30,150,280
Nevada	$1,045,254	$9,340,451	$7,652,253	$7,292,961	$2,134,789	$2,846,559	$8,047,201	$38,359,468
New Hampshire	$813,384	$6,447,504	$5,317,054	$5,244,492	$1,124,821	$2,209,503	$5,186,272	$26,343,030
New Jersey	$2,601,641	$22,337,727	$18,788,803	$18,247,856	$7,463,387	$6,207,674	$23,141,477	$98,788,565
New Mexico	$956,824	$8,690,645	$7,054,780	$6,853,141	$1,672,053	$2,554,680	$6,736,412	$34,518,535
New York	$3,205,759	$28,874,621	$22,518,790	$22,171,004	$9,488,395	$7,484,987	$28,877,702	$122,621,258
North Carolina	$2,547,844	$21,306,097	$16,696,497	$16,224,492	$7,576,259	$6,278,870	$23,461,208	$94,091,267
North Dakota	$654,029	$5,839,561	$5,023,132	$5,023,393	$543,949	$1,843,107	$3,540,842	$22,468,013
Ohio	$3,281,387	$28,837,726	$21,838,104	$21,312,180	$9,818,808	$7,693,403	$29,813,666	$122,595,274
Oklahoma	$1,352,695	$11,101,950	$8,740,269	$8,536,905	$3,061,821	$3,431,303	$10,673,197	$46,898,140
Oregon	$1,366,765	$11,468,821	$9,100,217	$8,884,916	$3,165,797	$3,496,887	$10,967,729	$48,451,132
Pennsylvania	$3,508,291	$31,306,870	$23,758,643	$22,975,362	$10,642,275	$8,212,819	$32,146,289	$132,550,549
Rhode Island	$761,679	$6,073,926	$5,012,619	$5,000,000	$913,283	$2,076,070	$4,587,048	$24,424,625
South Carolina	$1,508,881	$12,548,500	$9,968,869	$10,097,336	$3,696,593	$3,831,697	$12,471,312	$54,123,188
South Dakota	$686,008	$5,878,521	$5,000,000	$5,000,000	$668,889	$1,921,915	$3,894,757	$23,050,090
Tennessee	$1,921,423	$16,418,187	$12,844,807	$12,495,537	$5,165,868	$4,758,470	$16,633,313	$70,237,605
Texas	$5,875,044	$56,222,601	$43,355,376	$42,816,952	$20,109,629	$14,184,535	$58,964,392	$241,528,529
Utah	$1,071,983	$8,878,797	$7,162,839	$7,018,990	$2,181,440	$2,875,985	$8,179,349	$37,369,383
Vermont	$650,611	$5,843,658	$5,041,316	$5,042,969	$533,720	$1,836,654	$3,511,863	$22,460,791
Virginia	$2,291,072	$21,300,739	$17,222,047	$16,613,973	$6,538,072	$5,624,014	$20,520,344	$90,110,261
Washington	$1,990,994	$17,735,543	$14,012,182	$13,561,976	$5,471,257	$4,951,101	$17,498,388	$75,221,441
West Virginia	$940,502	$7,412,363	$5,933,288	$5,839,235	$1,555,603	$2,481,226	$6,406,542	$30,568,759
Wisconsin	$1,831,224	$15,868,645	$12,188,297	$12,177,579	$4,753,288	$4,498,228	$15,464,604	$66,781,865
Wyoming	$622,102	$5,748,448	$5,000,000	$5,000,000	$440,557	$1,777,890	$3,247,965	$21,836,962
STATE SUBTOTAL	$91,148,843	$805,818,297	$636,383,499	$623,373,683	$238,158,321	$226,222,941	$775,629,250	$3,396,734,834

CITY	FY 2006 PHEP SUPPLEMENT	FY 2007 PHEP TOTAL AWARD	FY 2008 PHEP TOTAL AWARD	FY 2009 PHEP TOTAL AWARD	FY 2009 PHER PHASE I	FY 2009 PHER PHASE II	FY 2009 PHER PHASE III	TOTAL BY STATE
Chicago	$1,197,706	$15,703,041	$11,382,673	$10,699,574	$2,423,752	$2,528,828	$7,865,743	$51,801,317
Los Angeles	$2,900,529	$30,712,150	$22,852,470	$22,522,771	$8,510,041	$6,367,873	$25,106,330	$118,972,164
New York City	$2,466,271	$28,822,589	$22,371,459	$20,674,333	$7,026,995	$5,432,412	$20,905,313	$107,699,372
CITY SUBTOTAL	$6,564,506	$75,237,780	$56,606,602	$53,896,678	$17,960,788	$14,329,113	$53,877,386	$278,472,853
TERRITORY / FREELY ASSOCIATED STATE								
American Samoa	$114,066	$547,830	$386,338	$383,368	$49,441	$531,185	$640,047	$2,652,275
Guam	$139,782	$771,759	$555,484	$546,695	$146,297	$592,280	$914,416	$3,666,713
Marshall Islands	$113,722	$550,237	$390,307	$387,201	$51,713	$532,619	$646,486	$2,672,285
Micronesia	$126,298	$649,441	$461,346	$455,796	$92,392	$558,278	$761,717	$3,105,268
Northern Mariana Islands	$118,513	$593,312	$423,185	$418,947	$70,539	$544,494	$699,816	$2,868,806
Palau	$104,795	$471,804	$330,743	$329,686	$17,605	$511,104	$549,867	$2,315,604
Puerto Rico	$1,443,014	$11,445,404	$8,867,670	$8,665,828	$3,359,999	$3,619,384	$11,517,842	$48,919,141
Virgin Islands	$126,461	$650,661	$462,244	$456,664	$92,905	$558,602	$763,173	$3,110,710
TERRITORY SUBTOTAL	$2,286,651	$15,680,448	$11,877,317	$11,644,185	$3,880,891	$7,447,946	$15,730,954	$68,548,392
TOTAL OF STATES, CITIES, AND TERRITORIES	**$100,000,000**	**$896,736,525**	**$704,867,418**	**$688,914,546**	**$260,000,000**	**$248,000,000**	**$846,000,000**	**$3,743,756,079**

Table A.5 Public Health Emergency Preparedness Public Health Emergency Response Awards, by Year

STATE / CITY / TERRITORY AWARDEE	FY 1999	FY 2000	FY 2001 and 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	TOTAL
STATE											
Alabama	$1,026,768	$932,464	$16,277,122	$15,598,792	$12,910,651	$12,809,991	$16,408,481	$12,951,862	$10,241,093	$17,900,736	$117,057,960
Alaska	$807,530	$780,443	$7,751,884	$6,502,762	$5,205,459	$5,210,372	$6,768,343	$5,838,752	$5,015,000	$7,449,746	$5,133,0291
Arizona	$601,905	$797,905	$1,780,8361	$17,586,381	$16,470,314	$17,067,370	$21,709,926	$17,681,799	$14,227,671	$23,760,619	$147,712,251
Arkansas	$799,671	$637,469	$12,121,927	$11,390,938	$9,339,265	$9,302,434	$11,994,849	$9,389,730	$7,655,489	$12,700,766	$85,332,538
California	$2,812,432	$2,505,947	$65,936,982	$64,203,968	$59,319,441	$61,339,288	$78,752,328	$65,303,030	$50,961,997	$87,823,374	$538,958,787
Colorado	$1,261,720	$1,284,487	$16,583,399	$15,508,850	$13,654,314	$13,937,566	$17,500,375	$14,009,943	$11,942,847	$18,768,528	$124,452,029
Connecticut	$717,099	$838,010	$14,097,316	$13,145,748	$10,828,647	$10,801,849	$14,016,230	$11,324,491	$9,297,705	$15,093,735	$100,160,830
Delaware	$360,816	$445,969	$7,779,467	$6,889,271	$5,518,506	$5,596,144	$7,262,546	$5,911,494	$5,000,000	$7,690,629	$52,454,842
District of Columbia	$135,000	$235,651	$12,136,423	$11,360,917	$11,985,069	$11,931,316	$8,198,017	$9,898,127	$6,698,743	$8,272,613	$80,851,876
Florida	$1,062,096	$1,201,152	$42,649,178	$43,832,162	$37,583,527	$39,221,056	$51,713,925	$42,467,775	$34,233,299	$59,642,626	$353,606,796
Georgia	$1,006,194	$1,015,034	$25,161,441	$24,935,506	$21,575,121	$22,321,610	$28,600,468	$23,156,267	$19,466,680	$32,709,208	$199,947,529
Hawaii	$660,420	$614,377	$8,855,244	$7,910,098	$6,384,925	$6,381,328	$8,268,365	$6,418,428	$6,610,925	$8,437,820	$60,541,930
Idaho	$0	$0	$8,515,356	$8,131,994	$6,588,258	$6,629,932	$8,656,659	$6,637,005	$5,405,739	$8,876,149	$59,441,092
Illinois	$1,145,974	$987,216	$27,849,408	$28,315,621	$23,718,971	$24,044,099	$30,466,673	$24,575,584	$20,708,569	$35,434,378	$217,246,493
Indiana	$95,576	$184,840	$19,224,277	$19,530,623	$16,262,765	$16,461,162	$21,111,440	$16,965,990	$14,134,586	$23,286,778	$147,258,037
Iowa	$280,725	$242,914	$12,225,235	$11,953,663	$9,816,873	$9,725,489	$12,465,966	$9,779,223	$7,961,041	$13,200,545	$87,651,674
Kansas	$753,421	$719,799	$12,384,717	$11,408,553	$9,354,215	$9,296,532	$12,182,064	$9,548,746	$7,598,339	$12,802,525	$86,048,911
Kentucky	$140,670	$148,148	$14,759,368	$14,649,896	$12,105,282	$12,048,544	$15,591,456	$12,441,275	$9,750,535	$16,878,123	$108,513,297
Louisiana	$853,767	$819,785	$16,485,507	$15,602,245	$12,913,581	$12,790,121	$16,529,518	$13,243,221	$10,396,071	$17,237,946	$116,871,762
Maine	$142,753	$187,650	$8,529,114	$8,046,341	$6,600,682	$6,606,543	$8,504,047	$6,526,615	$6,722,731	$8,526,978	$60,393,454
Maryland	$413,529	$673,363	$17,800,960	$17,774,011	$14,756,853	$15,290,917	$19,973,979	$16,047,435	$13,038,391	$22,024,174	$137,793,612
Massachusetts	$1,348,777	$1,587,191	$21,559,185	$20,181,459	$17,640,158	$17,872,452	$22,258,559	$18,039,564	$15,367,024	$24,803,809	$160,658,178
Michigan	$1,542,617	$1,156,125	$30,392,446	$28,731,577	$26,896,854	$27,105,748	$33,291,873	$26,992,552	$22,491,689	$35,707,310	$234,308,791
Minnesota	$1,274,462	$1,161,437	$17,893,590	$16,821,680	$14,701,780	$15,003,826	$18,722,401	$15,591,573	$14,830,514	$20,763,563	$136,764,826
Mississippi	$360,299	$315,786	$12,155,146	$11,782,347	$9,671,470	$9,608,208	$12,350,237	$9,722,247	$7,629,747	$13,028,194	$86,623,681
Missouri	$630,236	$758,709	$19,060,349	$18,369,845	$15,952,563	$16,321,799	$20,586,280	$16,566,343	$13,029,088	$22,126,599	$143,401,811
Montana	$407,841	$454,346	$8,108,083	$7,147,269	$5,775,627	$5,751,801	$7,451,738	$5,982,934	$5,022,876	$7,836,830	$53,939,345
Nebraska	$299,325	$250,182	$9,526,033	$9,079,368	$7,377,335	$7,346,564	$9,469,800	$7,324,391	$6,851,459	$9,741,265	$67,265,722
Nevada	$391,350	$493,105	$10,556,508	$9,975,108	$8,927,588	$9,267,629	$11,785,334	$9,340,451	$7,652,253	$12,274,309	$80,663,635
New Hampshire	$423,981	$458,192	$8,526,428	$7,986,786	$6,465,014	$6,526,889	$8,422,433	$6,447,504	$6,181,551	$8,578,816	$60,017,594
New Jersey	$1,008,444	$1,028,078	$25,412,080	$25,185,572	$21,047,364	$21,953,336	$27,697,226	$22,337,727	$18,788,803	$31,918,917	$196,377,547
New Mexico	$919,774	$1,918,091	$12,432,222	$9,342,376	$8,803,295	$8,810,432	$11,069,717	$8,690,645	$7,587,633	$11,079,874	$80,654,059

STATE (cont'd)	FY 1999	FY 2000	FY 2001 and 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	TOTAL
New York	$2,603,650	$2,244,882	$34,087,623	$31,675,790	$28,493,781	$28,293,465	$35,407,116	$28,874,621	$22,518,790	$39,144,386	$253,344,104
North Carolina	$286,435	$685,804	$24,102,003	$24,462,186	$20,433,395	$20,547,098	$26,604,327	$21,306,097	$16,696,497	$30,079,621	$185,203,463
North Dakota	$316,138	$193,439	$6,747,355	$6,509,688	$5,223,458	$5,193,519	$6,717,516	$5,839,561	$5,203,480	$7,410,449	$49,354,603
Ohio	$1,116,275	$977,275	$31,889,797	$32,012,830	$27,626,951	$27,902,321	$35,468,721	$28,837,726	$21,982,224	$38,824,391	$246,638,511
Oklahoma	$184,490	$149,614	$13,322,159	$13,228,697	$10,899,049	$10,840,379	$13,905,118	$11,101,950	$8,740,269	$15,030,029	$97,401,754
Oregon	$1,052,593	$1,054,779	$14,439,021	$13,237,862	$10,906,827	$11,154,657	$14,499,454	$11,468,821	$10,646,375	$15,547,600	$104,007,989
Pennsylvania	$167,844	$225,065	$33,129,300	$34,178,922	$30,735,407	$30,976,767	$38,372,836	$3,130,6870	$24,209,396	$41,830,456	$265,132,863
Rhode Island	$773,102	$697,911	$8,634,169	$7,513,164	$6,048,030	$6,240,298	$7,946,779	$6,073,926	$5,686,034	$7,989,353	$57,602,766
South Carolina	$267,738	$466,960	$14,801,624	$14,634,027	$12,091,813	$12,108,891	$15,644,466	$12,548,500	$9,968,869	$17,625,626	$110,158,514
South Dakota	$118,238	$71,174	$7,134,856	$6,798,496	$5,441,461	$5,425,710	$7,033,040	$5,878,521	$5,000,000	$7,590,804	$50,492,300
Tennessee	$200,683	$207,763	$18,274,229	$18,635,684	$15,488,192	$15,459,458	$20,080,322	$16,418,187	$12,844,807	$22,419,875	$140,029,200
Texas	$1,164,964	$1,207,634	$53,077,169	$55,684,954	$51,803,533	$53,589,709	$67,920,482	$56,222,601	$44,155,174	$77,111,116	$461,937,336
Utah	$1,048,781	$107,2011	$11,852,383	$10,404,357	$8,501,910	$8,560,504	$11,210,487	$8,878,797	$7,443,956	$12,076,415	$81,049,601
Vermont	$479,748	$564,632	$7,601,406	$6,453,782	$5,198,685	$5,186,880	$6,702,951	$5,843,658	$5,041,316	$7,413,343	$50,486,401
Virginia	$1,698,682	$1,133,948	$23,848,999	$22,068,328	$19,924,893	$20,475,283	$26,206,694	$21,300,739	$18,587,047	$28,776,059	$184,020,672
Washington	$1,088,064	$1,190,761	$20,048,260	$19,214,353	$16,978,969	$17,350,613	$21,956,597	$17,735,543	$14,192,881	$23,984,334	$153,740,375
West Virginia	$582,816	$666,121	$10,128,728	$9,271,321	$7,540,254	$7,498,508	$9,623,643	$7,412,363	$5,933,288	$9,876,064	$68,533,106
Wisconsin	$1,120,743	$1,098,810	$18,846,878	$17,821,131	$14,811,846	$14,975,480	$19,198,714	$15,868,645	$12,188,297	$21,429,095	$137,359,639
Wyoming	$352,493	$507,610	$7,030,885	$6,171,022	$4,908,897	$4,906,684	$637,2226	$5,748,448	$5,000,000	$7,218,447	$48,216,712
STATE SUBTOTAL	$38,308,649	$39,250,058	$919,551,600	$888,858,321	$769,209,118	$781,068,571	$990,652,742	$805,818,297	$658,538,788	$1,087,754,945	$6,979,011,089
CITY											
Chicago	$365,456	$649,714	$12,520,307	$11,378,246	$12,563,491	$12,816,598	$15,255,231	$15,703,041	$12,001,845	$15,652,154	$108,906,083
Los Angeles	$784,958	$786,172	$25,791,036	$27,856,971	$27,069,695	$27,933,032	$34,078,965	$30,712,150	$22,852,470	$37,400,685	$235,266,134
New York City	$1,258,177	$1,112,456	$24,555,453	$23,586,022	$25,874,757	$26,069,578	$31,208,359	$28,822,589	$23,609,222	$33,133,740	$219,230,353
CITY SUBTOTAL	$2,408,591	$2,548,342	$62,866,796	$62,821,239	$65,507,943	$66,819,208	$80,542,555	$75,237,780	$58,463,537	$86,186,579	$563,402,570
TERRITORY											
Amer. Samoa	$0	$0	$544,481	$576,463	$444,499	$447,789	$735,140	$547,830	$386,338	$963,994	$4,646,534
Guam	$0	$92,614	$1,515,909	$679,585	$515,976	$550,696	$1,008,636	$771,759	$555,484	$1,285,272	$6,975,931
Marshall Islands	$0	$0	$306,025	$561,544	$434,158	$446,412	$737,460	$550,237	$390,307	$971,533	$4,397,676
Micronesia	$0	$0	$446,522	$653,415	$497,837	$496,736	$859,806	$649,441	$461,346	$1,106,466	$5,171,569
N. Marianas	$0	$0	$314,371	$585,043	$450,446	$465,583	$789,914	$593,312	$423,185	$1,033,980	$4,655,834
Palau	$0	$0	$192,061	$521,761	$406,583	$410,687	$641,746	$471,804	$330,743	$858,395	$3,833,780
Puerto Rico	$0	$0	$13,478,509	$14,103,332	$11,641,389	$11,573,929	$14,610,682	$11,445,404	$8,867,670	$15,645,211	$101,366,126
Virgin Islands	$0	$0	$419,235	$639,297	$488,051	$497,389	$861,319	$650,661	$462,244	$1,108,171	$5,126,367
TERRITORY SUBTOTAL	$0	$92,614	$17,217,113	$18,320,440	$14,878,939	$14,889,221	$20,244,703	$15,680,448	$11,877,317	$22,973,022	$136,173,817
TOTAL	$40,717,240	$41,891,014	$999,635,509	$970,000,000	$849,596,000	$862,777,000	$1,091,440,000	$896,736,525	$728,879,642	$1,196,914,546	$7,678,587,476

Table A.6 FY 2007 Pandemic Flu Funding

STATE / TERRITORY / CITY	Total Pandemic Flu Funding
STATE	
Alabama	$1,170,933
Alaska	$382,562
Arizona	$1,390,853
Arkansas	$807,782
California	$5,482,954
Colorado	$1,179,911
Connecticut	$963,022
Delaware	$417,301
District of Columbia	$364,024
Florida	$3,726,035
Georgia	$2,024,184
Hawaii	$505,349
Idaho	$529,535
Illinois	$2,249,832
Indiana	$1,517,704
Iowa	$851,583
Kansas	$807,171
Kentucky	$1,092,098
Louisiana	$1,168,876
Maine	$517,710
Maryland	$1,377,171
Massachusetts	$1,562,851
Michigan	$2,311,667
Minnesota	$1,285,535
Mississippi	$839,440
Missouri	$1,419,477
Montana	$437,747

STATE (cont'd)	Total Pandemic Flu Funding
Nebraska	$605,283
Nevada	$708,492
New Hampshire	$513,518
New Jersey	$2,017,222
New Mexico	$634,133
New York	$2,525,212
North Carolina	$1,971,986
North Dakota	$379,519
Ohio	$2,588,806
Oklahoma	$967,012
Oregon	$978,843
Pennsylvania	$2,779,604
Rhode Island	$470,040
South Carolina	$1,098,346
South Dakota	$406,410
Tennessee	$1,445,243
Texas	$4,769,753
Utah	$730,967
Vermont	$376,645
Virginia	$1,756,072
Washington	$1,503,743
West Virginia	$620,408
Wisconsin	$1,369,397
Wyoming	$352,673
STATE SUBTOTAL	$67,952,634
CITY	
Los Angeles (County)	$2,268,550
Chicago	$836,685
New York City	$1,903,393

CITY (cont'd)	Total Pandemic Flu Funding
CITY SUBTOTAL	$5,008,628
TERRITORY / FREELY ASSOCIATED STATE	
Puerto Rico	$1,042,959
Guam	$158,452
Virgin Islands (U.S.)	$147,251
Federated States of Micronesia	$147,113
Northern Mariana Islands	$140,567
American Samoa	$136,828
Marshall Islands	$136,539
Palau	$129,032
TERRITORY SUBTOTAL	$2,038,741
TOTAL OF STATES, CITIES, AND TERRITORIES	**$75,000,000**

Table A.7 Hospital Preparedness Program Awards by Awardees, Year, and Major Category

STATE / CITY / TERRITORY AWARDEE	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
STATE								
Alabama	$1,972,883	$7,762,315	$7,762,315	$7,326,068	$7,154,927	$6,330,289	$6,073,401	$5,528,753
Alaska	$492,877	$1,958,803	$1,958,803	$1,484,009	$1,458,182	$1,349,441	$1,312,013	$1,232,661
Arizona	$2,237,637	$9,030,450	$9,030,450	$8,964,023	$8,753,827	$8,317,173	$7,972,742	$7,242,486
Arkansas	$1,285,691	$5,077,591	$5,077,591	$4,633,962	$4,531,309	$4,063,403	$3,906,396	$3,573,514
California	$9,962,905	$38,773,727	$38,773,727	$39,203,268	$38,325,286	$34,106,620	$32,625,884	$29,486,456
Colorado	$1,916,334	$7,704,930	$7,704,930	$7,401,669	$7,221,888	$6,525,958	$6,260,449	$5,697,522
Connecticut	$1,569,336	$6,197,207	$6,197,207	$5,783,087	$5,651,890	$4,943,121	$4,747,354	$4,332,291
Delaware	$553,571	$2,205,406	$2,205,406	$1,739,851	$1,709,476	$1,581,970	$1,534,297	$1,433,223
Florida	$6,441,669	$25,775,967	$25,775,967	$26,311,287	$25,638,227	$23,432,938	$22,422,494	$20,280,168
Dist. of Columbia	$721,619	$2,868,302	$2,868,302	$1,854,320	$1,823,510	$1,737,218	$1,707,585	$1,589,577
Georgia	$3,421,481	$13,719,390	$13,719,390	$13,671,367	$13,330,420	$12,370,869	$11,847,828	$10,738,888
Hawaii	$719,356	$2,856,721	$2,856,721	$2,407,137	$2,345,600	$2,129,653	$2,057,849	$1,905,612
Idaho	$751,285	$2,998,297	$2,998,297	$2,572,244	$2,521,506	$2,359,069	$2,277,157	$2,103,488
Illinois	$3,939,374	$15,875,995	$15,875,995	$15,578,388	$14,951,481	$13,163,842	$12,605,863	$11,422,845
Indiana	$2,605,616	$10,270,929	$10,270,929	$9,896,622	$9,660,723	$8,503,785	$8,151,131	$7,403,442
Iowa	$1,383,675	$5,436,624	$5,436,624	$4,965,024	$4,846,845	$4,280,453	$4,113,883	$3,760,725
Kansas	$1,291,509	$5,088,830	$5,088,830	$4,630,597	$4,525,854	$4,004,077	$3,849,684	$3,522,344
Kentucky	$1,815,805	$7,156,894	$7,156,894	$6,745,252	$6,585,429	$5,832,130	$5,597,192	$5,099,081
Louisiana	$1,981,308	$7,764,518	$7,764,518	$7,319,242	$7,139,266	$5,935,695	$5,696,194	$5,188,408
Maine	$743,913	$2,943,648	$2,943,648	$2,480,391	$2,434,432	$2,175,388	$2,101,569	$1,945,059
Maryland	$2,301,890	$9,150,163	$9,150,163	$8,855,085	$8,645,984	$7,619,177	$7,305,500	$6,640,448
Massachusetts	$2,709,678	$10,686,180	$10,686,180	$10,256,868	$9,983,770	$8,660,567	$8,301,006	$7,538,670
Michigan	$4,100,212	$16,141,386	$16,141,386	$15,787,720	$15,395,465	$13,298,463	$12,734,552	$11,538,958
Minnesota	$2,155,835	$8,542,551	$8,542,551	$8,173,336	$7,983,328	$7,050,445	$6,761,826	$6,149,904
Mississippi	$1,352,037	$5,327,321	$5,327,321	$4,869,883	$4,759,591	$4,189,754	$4,027,180	$3,682,495

STATE (cont'd)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Missouri	$2,417,618	$9,530,322	$9,530,322	$9,151,953	$8,951,388	$7,906,932	$7,580,577	$6,888,644
Montana	$599,516	$2,370,015	$2,370,015	$1,891,709	$1,856,928	$1,697,530	$1,644,766	$1,532,896
Nebraska	$912,954	$3,602,747	$3,602,747	$3,137,831	$3,067,393	$2,741,751	$2,642,978	$2,433,560
Nevada	$1,024,136	$4,174,253	$4,174,253	$3,899,038	$3,818,014	$3,663,636	$3,524,243	$3,228,706
New Hampshire	$728,751	$2,905,650	$2,905,650	$2,452,975	$2,404,444	$2,166,921	$2,093,475	$1,937,756
New Jersey	$3,509,769	$13,878,940	$13,878,940	$13,601,391	$13,269,518	$11,560,312	$11,072,985	$10,039,764
New Mexico	$954,709	$3,770,553	$3,770,553	$3,343,195	$3,276,757	$2,977,887	$2,868,709	$2,637,233
New York	$4,499,138	$18,019,873	$18,019,873	$17,747,875	$16,937,704	$14,561,258	$13,941,707	$12,628,147
North Carolina	$3,368,351	$13,417,400	$13,417,400	$13,251,044	$12,948,887	$11,727,581	$11,232,884	$10,184,038
North Dakota	$498,792	$1,963,221	$1,963,221	$1,461,290	$1,435,800	$1,306,102	$1,270,585	$1,195,281
Ohio	$4,648,274	$18,234,914	$18,234,914	$17,843,984	$17,397,207	$15,050,914	$14,409,789	$13,050,486
Oklahoma	$1,586,804	$6,250,131	$6,250,131	$5,825,603	$5,681,308	$5,037,444	$4,837,520	$4,413,646
Oregon	$1,575,470	$6,255,978	$6,255,978	$5,898,716	$5,767,951	$5,191,530	$4,984,817	$4,546,549
Pennsylvania	$5,007,754	$19,616,940	$19,616,940	$19,254,011	$18,776,677	$16,271,242	$15,576,347	$14,103,046
Rhode Island	$656,125	$2,603,466	$2,603,466	$2,132,147	$2,089,651	$1,853,432	$1,793,799	$1,667,365
South Carolina	$1,804,277	$7,146,769	$7,146,769	$6,789,755	$6,632,258	$5,978,140	$5,736,768	$5,225,017
South Dakota	$542,431	$2,147,489	$2,147,489	$1,659,192	$1,630,322	$1,491,255	$1,447,580	$1,354,980
Tennessee	$2,454,062	$9,699,934	$9,699,934	$9,359,882	$9,138,740	$8,155,520	$7,818,211	$7,103,056
Texas	$8,328,119	$33,338,368	$33,338,368	$34,045,388	$33,177,278	$30,301,320	$28,988,249	$26,204,300
Utah	$1,115,143	$4,448,125	$4,448,125	$4,066,334	$3,978,558	$3,732,769	$3,590,331	$3,288,335
Vermont	$485,864	$1,927,552	$1,927,552	$1,438,965	$1,415,048	$1,290,942	$1,256,092	$1,182,205
Virginia	$2,992,259	$11,890,053	$11,890,053	$11,701,905	$11,387,068	$10,189,048	$9,762,140	$8,857,019
Washington	$2,533,418	$10,069,141	$10,069,141	$9,799,166	$9,562,647	$8,608,090	$8,250,841	$7,493,408
West Virginia	$950,564	$3,725,218	$3,725,218	$3,245,672	$3,176,132	$2,805,313	$2,703,739	$2,488,384
Wisconsin	$2,327,920	$9,180,227	$9,180,227	$8,799,529	$8,588,953	$7,544,102	$7,233,733	$6,575,694
Wyoming	$441,296	$1,747,144	$1,747,144	$1,260,221	$1,241,982	$1,152,882	$1,124,115	$1,063,125
STATE SUBTOTAL	$114,391,010	$453,228,568	$453,228,568	$435,969,471	$424,986,829	$378,925,351	$363,378,009	$330,359,658
CITY								
Chicago	$1,371,934	$5,069,493	$5,069,493	$4,596,335	$4,738,187	$4,103,521	$3,944,747	$3,608,117
Los Angeles (County)	$3,659,172	$15,583,364	$15,583,364	$15,582,102	$15,084,217	$13,111,395	$12,555,727	$11,377,608
New York City	$3,352,455	$12,858,383	$12,858,383	$12,349,690	$12,445,285	$10,913,604	$10,454,772	$9,481,964

CITY (cont'd)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
CITY SUB TOTAL	$8,383,561	$33,511,240	$33,511,240	$32,528,127	$32,267,689	$28,128,520	$26,955,246	$24,467,689
TERRITORY / FREELY ASSOCIATED STATE								
American Samoa	$150,000	$601,511	$601,511	$350,097	$335,451	$323,330	$320,099	$313,249
Guam	$150,000	$738,414	$738,414	$485,709	$491,833	$457,390	$448,253	$428,879
N. Mariana Islands	$150,000	$612,902	$612,902	$361,591	$362,602	$346,510	$342,258	$333,242
Virgin Islands (U.S.)	$150,000	$684,929	$684,929	$0	$250,000	$387,946	$381,868	$368,981
Federated States of Micronesia	$0	$703,671	$703,671	$450,658	$409,753	$387,095	$381,055	$368,248
Marshall Islands	$0	$581,705	$581,705	$330,787	$333,447	$321,536	$318,384	$311,702
Palau	$0	$528,890	$528,890	$278,560	$279,146	$274,996	$273,894	$271,559
Puerto Rico	$1,725,479	$6,808,171	$6,808,171	$0	$500,000	$5,479,326	$5,259,932	$4,794,779
TERRITORY SUBTOTAL	$2,325,479	$11,260,193	$11,260,193	$2,257,402	$2,962,232	$7,978,129	$7,725,743	$7,190,639
TOTAL OF STATES, CITIES, AND TERRITORIES	**$125,100,000**	**$498,000,000**	**$498,000,000**	**$470,755,000**	**$460,216,752**	**$415,032,000**	**$398,059,000**	**$362,017,984**

Table A.8 FY 2009 H1N1 Supplemental Funding

STATE / TERRITORY / CITY AWARDEE	H1N1 Supplemental Funding FY 2009
STATE	
Alabama	$1,359,073
Alaska	$197,157
Arizona	$1,822,566
Arkansas	$830,261
California	$7,838,642
Colorado	$1,404,718
Connecticut	$1,035,479
Delaware	$251,401
District of Columbia	$293,688
Florida	$5,348,721
Georgia	$2,768,199
Hawaii	$379,162
Idaho	$432,680
Illinois	$2,953,181
Indiana	$1,866,098
Iowa	$880,894
Kansas	$816,422
Kentucky	$1,242,864
Louisiana	$1,267,023
Maine	$389,831
Maryland	$1,659,740
Massachusetts	$1,902,672
Michigan	$2,984,585
Minnesota	$1,527,068

STATE (cont'd)	H1N1 Supplemental Funding FY 09
Mississippi	$859,736
Missouri	$1,726,867
Montana	$278,358
Nebraska	$521,951
Nevada	$737,005
New Hampshire	$387,856
New Jersey	$2,579,115
New Mexico	$577,036
New York	$3,279,165
North Carolina	$2,618,135
North Dakota	$187,047
Ohio	$3,393,391
Oklahoma	$1,057,482
Oregon	$1,093,427
Pennsylvania	$3,678,065
Puerto Rico	$1,160,563
Rhode Island	$314,726
South Carolina	$1,276,924
South Dakota	$230,239
Tennessee	$1,784,856
Texas	$6,950,954
Utah	$753,132
Vermont	$183,511
Virginia	$2,259,231
Washington	$1,890,430
West Virginia	$536,778
Wisconsin	$1,642,227
Wyoming	$151,304
STATE SUBTOTAL	$83,561,636

CITY	
Chicago	$839,620
Los Angeles (County)	$2,940,946
New York City	$2,428,253
CITY SUB TOTAL	$62,08,819
TERRITORY / FREELY ASSOCIATED STATE	
Guam (U.S.)	$47,382
Virgin Islands (U.S.)	$31,182
Federated States of Micronesia	$30,983
Northern Mariana Islands (U.S.)	$30,000
American Samoa (U.S.)	$30,000
Marshall Islands	$30,000
Palau	$30,000
TERRITORY SUBTOTAL	$229,547
TOTAL OF STATES, CITIES, AND TERRITORIES	**$90,000,000**

Table A.9 FY 2007 ASPR Healthcare Facilities Partnership Program

Entity	Scope of Work	Funding
Massachusetts Emergency Preparedness Regions 4 A,B,C with the Boston University School of Public Health	Medical response exercise planning and implementation	$2,400,000
King County Healthcare Coalition, Washington	Medical surge planning	$1,900,000
San Francisco City and County Community Hub Plan	Medical surge planning	$787,000
Roper St. Francis Foundation, Charleston, SC	Regional health care coordinating center development	$2,500,000
North Broward Hospital District, Ft. Lauderdale, FL	Critical incident management system software installation and training	$426,000
Pennsylvania State University, Hershey Medical Center	Evaluation, planning, and exercising of health care facility partnership in the South Central region of PA	$2,500,000
Wake Med Health Care System, Raleigh, NC	Development, implementation, and evaluation of a comprehensive multi-health care facility disaster exercise	$1,000,000
Elkhorn Logan Valley Public Health Department, NE	Rural NE medical response system development	$868,000
Hennepin Healthcare System, Minneapolis, MN	Expansion and further development of the hospital compact and related programs	$2,500,000
Alaska Department of Health and Social Services	Pediatric medical surge capacity	$742,000
New York State Department of Health	Burn care integration system development and testing for mass casualty incidents	$2,500,000
TOTAL		**$18,123,000**

Table A.10 FY 2007 ASPR Emergency Care Partnership Program

Entity	Scope of Work	Funding
Health and Hospital Corp of Marion Co., Indianapolis, IN	Main activities: Standardized hospital and health care facility preparedness plan; replicable policy outlining distribution of burden; establish community-wide standards of care; inter-facility communications plan; coordinate and unify facility bed tracking and capabilities software; implement resource tracking; develop training materials for staff at hospitals, health care centers, etc.; enhance regional coroner capabilities with scalable mortuary services.	$5,000,000
Rhode Island Hospital, Providence, RI	Main activities: National Incident Management System (NIMS) compliance, Patient Tracking System, Emergency Communications Mobile Pallets (mobile communication platform that can be deployed at hospitals to support a number of communication tasks). Pallet is self-contained and can be made operational in 20 minutes to support hundreds of voice and data users. This effort will also improve communication capability in the event of the loss of land-based systems through an innovative mobile communication system.	$5,000,000
Children's Hospital of Los Angeles, Los Angeles, CA	Main activities: Pediatric disaster preparedness plans and strategies for including children and pediatric-related issues in drills and training activities; regional strategy and plan for pediatric evacuation and reunification; telecommunication education strategy and plan including telemedicine robots; pediatric disaster drill training and assessments for LA County DRCs; and software, documentation, and user manuals for PEDSS (Pediatric Emergency Decision Support System), a hospital disaster plan preparation advisor and PREP (Pediatric Response Exercise Planner), a multicenter disaster response training exercise planning tool.	$5,000,000
The Regents of the University of California, Davis, CA	Main activities: Implement uniform standards and protocols; electronically track location and movement of patients; expand the reach and effectiveness of telemedicine; provide seamless exchange of health care data across platforms through standardized informatics; test the ability to meet the needs of children, burn patients, and non-native English speaking patients; coordinate activities listed above through facilitation and training within the partnership; and create computer models of disaster-management processes to identify strengths and weaknesses.	$5,000,000
MedStar Health, Inc., DBA Washington Hospital Center, Washington, D.C.	Main activities: Installation of a real-time connection between hospital emergency departments and the D.C. Department of Health, and management of surge equipment and supplies using a "Ready Room" model (Ready Room can be used for treating a wide range of patient severities and also hold the surge equipment for the hospital). Funds will be used to support deployment of ER One at WHC, and to fund other facilities with the initial ER One process at their institutions. NIMS compliance and additional partnership development activities are also included.	$5,000,000
TOTAL		**$25,000,000**

Table A.11 Emergency System for Advance Registration of Volunteer Health Professionals Awards, by Awardee, Year, and Major Category

STATE / TERRITORY / CITY	Phase***	FY 2004	FY 2005
STATE			
Alabama	Phase 2	$200,000	
Alaska*	Phase 3		
Arizona	Phase 3		$200,000
Arkansas	Phase 3		$200,000
California	Phase 2	$200,000	
Colorado	Phase 3		$200,000
Connecticut	Phase 1	$200,000	
Delaware	Phase 3		$200,000
District of Columbia	Phase 1	$200,000	
Florida	Phase 2	$200,000	
Georgia	Phase 2	$200,000	
Hawaii	Phase 2	$200,000	
Idaho*	Phase 3		
Illinois	Phase 1	$200,000	
Indiana	Phase 3		$200,000
Iowa	Phase 3		$200,000
Kansas	Phase 2	$200,000	
Kentucky	Phase 3		$200,000
Louisiana	Phase 3		$200,000
Maine	Phase 3		$200,000
Maryland	Phase 2	$200,000	

STATE (cont'd)	Phase	FY 2004	FY 2005
Massachusetts	Phase 1	$200,000	
Michigan	Phase 2	$200,000	
Minnesota	Phase 1	$200,000	
Mississippi	Phase 3		$200,000
Missouri	Phase 1	$200,000	
Montana	Phase 3		$200,000
Nebraska	Phase 2	$200,000	
Nevada	Phase 2	$200,000	
New Hampshire	Phase 2	$200,000	
New Jersey	Phase 2	$200,000	
New Mexico	Phase 2	$200,000	
New York	Phase 2	$200,000	
North Carolina	Phase 2	$200,000	
North Dakota	Phase 3		$200,000
Ohio	Phase 1	$200,000	
Oklahoma	Phase 2	$200,000	
Oregon	Phase 2	$200,000	
Pennsylvania	Phase 2	$200,000	
Rhode Island	Phase 3		$200,000
South Carolina	Phase 3		$200,000
South Dakota	Phase 3		$200,000
Tennessee	Phase 3		$200,000
Texas	Phase 1	$200,000	
Utah	Phase 2	$200,000	
Vermont	Phase 3		$200,000

STATE (cont'd)	Phase	FY 2004	FY 2005
Virginia	Phase 2	$200,000	
Washington	Phase 2	$200,000	
West Virginia	Phase 1	$200,000	
Wisconsin	Phase 1	$200,000	
Wyoming	Phase 3		$200,000
STATE SUBTOTAL		$6,200,000	$3,600,000
CITY			
Los Angeles (County)	Phase 3		$200,000
Chicago	Phase 3		$200,000
New York City	Phase 3		$200,000
CITY SUBTOTAL			$600,000
TERRITORY / FREELY ASSOCIATED STATE			
American Samoa**	Phase 3		
Guam**	Phase 3		
Northern Mariana Islands**	Phase 3		
Virgin Islands (U.S.)	Phase 3		$200,000
Federated States of Micronesia**	Phase 3		
Marshall Islands**	Phase 3		
Palau	Phase 3		$200,000
Puerto Rico	Phase 3		$200,000
TERRITORY SUBTOTAL			$600,000
TOTAL OF STATES, CITIES, AND TERRITORIES		$6,200,000	$4,800,000

*****Alaska and Idaho declined the ESAR-VHP supplemental funds.

******American Samoa, Federated States of Micronesia, Guam, Marshall Islands, and Northern Mariana Islands did not receive ESAR-VHP funds directly.

*******Phase 1 consisted of the development of guidelines, standards, and definitions and pilot testing of ten National Bioterrorism Hospital Preparedness

Program (NBHPP) grantees from September 2004 through June 2005. Phase 2 consisted of the implementation of guidelines, standards, and definitions for 20 NBHPP grantees from June 2005 through December 2005. Phase 3 consisted of the implementation of guidelines, standards and definitions for the 32 remaining NBHPP grantees from January 2006 through December 2006.

Table A.12 United States–Canada and United States–Mexico Border States Original Early Warning Infectious Disease Surveillance (EWIDS) Allocations from HHS-ASPR-Office of Medicine, Science, and Public Health (OMSPH)

STATE	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2008 Supplement	FY 2009	TOTAL
Alaska	$10,000	$15,000	$15,000	$15,000	$15,000	$15,000	$29,411	$15,000	$129,411
Idaho	$10,000	$15,000	$15,000	$15,000	$15,000	$15,000	$0	$15,000	$100,000
Maine	$74,220	$100,121	$105,825	$117,309	$122,283	$96,856	$29,411	$76,963	$722,988
Michigan	$234,139	$315,848	$301,285	$296,641	$308,096	$239,552	$29,411	$238,912	$1,963,883
Minnesota	$32,033	$43,211	$47,429	$50,928	$50,512	$38,195	$29,411	$33,842	$325,562
Montana	$28,279	$38,148	$23,414	$23,837	$26,487	$22,876	$0	$19,036	$182,077
North Dakota	$341,493	$460,667	$401,281	$427,665	$28,972	$23,132	$29,411	$23,393	$1,736,014
New York	$20,105	$27,121	$27,535	$28,198	$399,589	$322,137	$29,411	$330,193	$1,184,290
Vermont	$36,910	$49,797	$48,659	$47,557	$39,717	$41,316	$29,411	$42,969	$336,342
Washington	$125,752	$169,636	$170,252	$182,822	$186,959	$160,783	$29,411	$160,078	$1,185,691
Illinois	$10,000	$15,000	$15,000	$15,000	$15,000	$15,000	$29,411	$15,000	$129,411
Indiana	$10,000	$15,000	$15,000	$15,000	$15,000	$15,000	$29,411	$15,000	$129,411
New Hampshire	$10,000	$15,000	$15,000	$15,000	$15,000	$15,000	$0	$15,000	$100,000
Ohio	$10,000	$15,000	$15,000	$15,000	$15,000	$15,000	$29,411	$15,000	$129,411
Pennsylvania	$10,000	$15,000	$15,000	$15,000	$15,000	$15,000	$29,411	$15,000	$129,411
Wisconsin	$10,000	$15,000	$15,000	$15,000	$15,000	$15,000	$29,411	$15,000	$129,411
TOTAL U.S. – Canada Border	$972,935	$1,324,550	$1,245,681	$1,294,958	$1,282,612	$1,064,847	$382,343	$1,045,386	$8,613,312
Arizona	$439,378	$592,711	$573,948	$587,973	$575,691	$456,569	$29,411	$475,290	$3,730,970
California	$1,059,378	$1,429,078	$1,537,683	$1,463,654	$1,476,742	$1,170,732	$29,411	$1,135,736	$9,302,415
New Mexico	$23,442	$63,630	$46,114	$46,838	$75,922	$66,150	$29,411	$89,668	$441,175
Texas	$1,504,867	$2,030,032	$2,036,574	$2,046,577	$2,029,033	$1,593,702	$29,411	$1,605,920	$12,876,115

STATE	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2008 Supplement	FY 2009	TOTAL
TOTAL U.S. — Mexico Border	$3,027,065	$4,115,450	$4,194,319	$4,145,042	$4,157,388	$3,287,153	$117,644	$3,306,614	$26,350,675
Total for Both U.S. Borders	$4,000,000	$5,440,000	$5,440,000	$5,440,000	$5,440,000	$4,352,000	$499,987	$4,352,000	$34,963,987

APPENDIX B. GAP ASSESSMENT OF PERFORMANCE MEASURES

This appendix contains a gap assessment of performance measures of health security conducted in spring 2009. The assessment is based on an HHS-wide survey of performance measures currently in use or under development. The performance measures collected through the survey were categorized into capability areas. It should be noted that the capabilities included in this analysis (seen in Table B.1 below), have been revised extensively since the gap assessment was conducted; the up-to-date list of capabilities can be found in Appendix A of the National Health Security Strategy.

Introduction

The NHSS outlines a set of goals and objectives and the capabilities needed to achieve them. A strong performance measurement system is needed to effectively monitor progress toward those goals and hold stakeholders accountable. To inform the development of the performance measures for the NHSS and the associated Implementation Plan, it is important to know what performance measures currently exist or are under development within HHS and to understand the quality of these measures. Having a clear picture of existing measures and their quality allows ASPR to take advantage of measure development efforts that have already taken place and to more effectively target future measure development efforts.

Toward that end, ASPR led an effort to survey HHS Staff Divisions (e.g., ASPR, Assistant Secretary for Planning and Evaluation, and Office of Civil Rights) and Operating Division (e.g., Food and Drug Administration, Centers for Disease Control and Prevention, and Health Resources and Services Administration) regarding their efforts to develop and utilize evidence-based performance measures, benchmarks, and objective standards to assess federal, state, and local progress toward the preparedness goals. The results from the survey identify both strengths and areas for improvement in performance measure development.

Approach

The objective of the survey of HHS Staff and Operating Divisions was to collect information on performance measures that are currently used or under development and to use that information to understand whether and how such measures can support the NHSS and associated Implementation Plan.

The performance measures collected through the survey were classified according to the capability area that it addressed. While the survey was the primary method of data collection, the survey results were supplemented with information on HHS measures that were collected through web searches. Based on these data, a gap analysis was conducted to identify areas where measure development is needed.

Results

In total, 49 representatives of 26 different divisions within HHS were invited to participate in the survey, and 30 individuals responded. Thirteen respondents, representing nine divisions, indicated that they had measures in development or already in use and reported them; the remaining 17 respondents reported that there were no measures in development or in use. A total of 948 measures were identified from the survey responses and web searches. Only measures collected from HHS agencies (i.e., through the survey or the related web searches of HHS sites) were included in the database.

As used here, the term "measures" is broadly defined. Some of the agencies surveyed submitted goals or standards, which may inform measure development but would not generally be considered measures by a more stringent definition. To accommodate the range of survey responses, we include goals and standards in our tabulation of measures.

The number of measures identified for each capability area is displayed in Table B.1 below. It should be noted that measures were assigned to all relevant capability areas. Therefore, the capability area counts are not mutually exclusive and the total in Table B.1 exceeds the total number of unique measures. It is evident from the table that more attention has been devoted to the measurement of the countermeasures and medical response capabilities than to other capabilities. In contrast, little attention has been paid to the measurement of community involvement, long-term recovery, and ensuring population safety and health.

As PHEP capacities and capabilities are more often executed at the state, local, and tribal levels, it is not surprising that most measures were designed to assess performance at the state, local, or tribal level rather than at the federal level: Across capability areas, the percentage of measures at the state, local, or tribal level ranged from 56% to 100%. The percentage of measures at the state, local, or tribal level is listed in Table B.1 below by capability area.

The measures collected represent a wide range of quality. At the low end are measures that consist of vaguely worded goals for the agency without any attempt to quantify attainment of, or progress toward, the goal. At the high end are more precisely worded measures that include quantitative assessments, which can be aggregated to derive a composite score of overall performance.

Reporting of targets or benchmarks for measures was rare, and when targets were cited, the basis for determining the target was not clear. To our knowledge, none of the measures is evidence-based. Aggregation of scores to generate a composite score that could be used for comparative purposes was the exception, not the rule. With regard to content, measures tended to focus more on capacity (i.e., resources) than on capability (execution of activities). Thus, measures are currently more focused on the availability of sufficient resources than on their implementation in an emergency event, thereby

leaving considerable ambiguity regarding the extent to which resources can be effectively mobilized. Below is a synopsis of the measures within each capability area.

Table B.1: Number of Performance Measures, by Capability Area

Capability	Number of Measures	Percentage of Measures at the State and Local Levels
Situational awareness	79	63
Community involvement	9	56
Incident management	124	99
Disease containment and mitigation	95	97
Countermeasures	359	91
Medical response	208	91
Ensuring population safety and health	20	90
Long-term recovery	11	100
Crosscutting issues	76	91

Discussion

The evaluation of the measures collected through the survey of HHS Staff and Operating Divisions revealed several strengths and weaknesses. For instance, the set of performance measures for countermeasure delivery are relatively well developed and touch on both capacity and capability. In other capability areas, however, there were deficiencies in both the coverage (i.e., a set of measures that cover performance in all important elements of the capability area) and quality of the existing measures. A recurrent theme across these capability areas is the need for measures with a greater focus on the capability to execute key activities and mobilize resources in the face of an emergency. Moreover, there is a need for more measures that include sufficiently well-defined criteria to allow for greater quantification of performance.

Given the nascent stage of measure development for public health and medical preparedness, it is not surprising there is a lack of evidence-based measures and that the reliability and validity of existing measures have not yet been evaluated. Well-defined criteria and quantifiable indicators of performance are measure characteristics that would facilitate the achievement of adequate reliability and validity. In addition, although some measures were accompanied by targets or benchmarks for determining an optimal level of performance, most were not. The identification of targets or benchmarks for performance is important, as the presence of a clearly articulated goal will help agencies to chart a path forward to improve their preparedness for emergency response.

Finally, there was a noteworthy lack of attention to outcomes, namely morbidity and mortality. This omission is surely attributable to the difficulty of assessing outcomes outside real-world emergency events or functional exercises designed to simulate emergency events, all of which are fairly infrequent. However, as this field progresses, it

is expected that computer-based models that simulate emergency events will aid in the assessment of outcomes in relation to measures of structure and process.

APPENDIX C. STATUS OF PERFORMANCE MEASURE DEVELOPMENT FOR CAPABILITIES

This appendix displays the status of performance measure development for each NHSS capability, grouped into eight general areas: Community Resilience and Recovery, Infrastructure, Situational Awareness, Incident Management, Disease Containment and Mitigation, Health Care Services, Population Safety and Health, and Quality Improvement and Accountability. Information in the table (as it is ordered in columns from left to right) includes the NHSS capability, status of measure development efforts for that capability (e.g., whether measures have already been developed and data are being collected, measures have been developed but data have not yet been collected, or no measures exist), what the measure is, the source of the measure (e.g., grant guidance), who collects the data, who reports the data, and the frequency with which data are reported to the overseeing agency or data collector. Only those existing measures that are considered viable and ready for widespread use are listed here as having been developed; thus, the existing measures listed here constitute a short list of usable measures that are worthy of consideration for data collection and reporting in the NHSS public report, although their inclusion here does not indicate that they necessarily should be included. This appendix differs from the gap assessment contained in Appendix B in that it indicates at a more granular level what the status of measures is for each capability; by contrast, the gap assessment was conducted at a higher level of analysis.

Table C.1 Status of Performance Measures for Community Resilience and Recovery

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
Public education to inform and prepare individuals and communities	Included in community resilience measures to be developed by ASPR in 2010					

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
Citizen engagement in local decision-making	Included in community resilience measures to be developed by ASPR in 2010					
Local social networks for preparedness and resilience	Included in community resilience measures to be developed by ASPR in 2010					
Integrated support from non-governmental organizations	Included in community resilience measures to be developed by ASPR in 2010					
Emergency public information and warning	Measure already developed and data being collected	Crisis and Emergency Risk Communication (CERC) Public Message Dissemination: Time to issue a risk communication message for dissemination to the public	PHEP Cooperative Agreement FY 2008-BP9	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
Post-incident social network re-engagement	Included in community resilience measures to be developed by ASPR in 2010					
Case management support or individual assistance	No measures					
Reconstitution of the public health, medical and behavioral health infrastructure	No measures					
Mitigated hazards to health and public health facilities and systems	No measures					
Support services network for long-term recovery	Included in community resilience measures to be developed by ASPR in 2010					

Table C.2 Status of Performance Measures for Infrastructure

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
Sufficient, culturally competent and proficient public health, health care and emergency management workforce	Measure developed and data being collected for health care facilities only	Percentage of participating hospitals that have identified appropriate hospital personnel for training and have verified their completion of the following courses or their equivalent: IS 100, IS 200, IS 700, IS 800B	Hospital Prepared-ness Program, FY 2008	ASPR	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Twice annually
Volunteer recruitment and management	Measures developed and data being collected	Generation of a list of potential volunteer health professionals Time to query ESAR-VHP system to generate list of volunteer health professionals Time to compile an initial list of willing volunteer health professionals	Hospital Prepared-ness Program– FY 2008	ASPR	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Twice annually

		Time to report a verified list of available volunteer health professionals				
Inter-operable and resilient communications systems	Measure developed and data being collected for healthcare facilities only	Number of hospitals that demonstrate dedicated, redundant communications capability during an exercise or incident	Hospital Prepared-ness Program - FY08	ASPR	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Twice annually
Legal protections and authorities	No measures					

Table C.3 Status of Performance Measures for Situational Awareness

Capability	Measure Develop-ment Status	Measure	Source	Collected By	Reported By	Frequency
Risk assessment and risk management	No measures					
Epidemiological surveillance and investigation	Draft measure developed and planned for data collection	Percentage of state and local public health agencies in compliance with CDC recommendations for using standards-based, electronic disease surveillance systems for appropriate routine public health information collection, analysis, and reporting to appropriate public health authorities	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually
Draft	measure developed and planned for pilot testing	Percentage of exposure and outbreak investigation reports generated	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually

Capability	Measure Develop-ment Status	Measure	Source	Collected By	Reported By	Frequency
Draft	measure developed and planned for pilot testing	Percentage of exposure and outbreak investigation reports containing the minimal elements	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually
Draft	measure developed and planned for pilot testing	Percentage of recommendations and/or corrective actions implemented	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually
Draft	measure developed and planned for pilot testing	Proportion of reports of selected disease received by a public health agency within the awardee-required timeframe	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually

Capability	Measure Develop-ment Status	Measure	Source	Collected By	Reported By	Frequency
Draft	measure developed and planned for pilot testing	Proportion of reports of selected disease for which initial public health control measure(s) were initiated within an appropriate timeframe	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually
Animal disease surveillance and investigation	No measures					
Agriculture surveillance and food safety	No measures					
Chemical, biological, radiological, nuclear, and explosives (CBRNE) detection	Draft measure developed and planned for data collection in 2010	Time from when surveillance data suggests that a public health outbreak may be underway to time of management decision by Agency Director (or designee) to report CDC's scientific determination that an event is naturally occurring or terrorism. Target = below established standard for each agent on the CDC	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually

Capability	Measure Develop-ment Status	Measure	Source	Collected By	Reported By	Frequency
		priority agent list (must establish standard for each agent on list)				
Monitoring of available health care resources	No measures					
Laboratory testing	Draft measure developed and planned for pilot testing	Time for initial laboratorian to report for duty at the public health laboratory	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually
	Draft measure developed and planned for pilot testing	Time for public health laboratory to notify public health partners of index test results	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually
	Draft measure developed and planned for pilot	Time for sentinel labs to acknowledge receipt of communication from public health laboratory	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los	Annually

Capability	Measure Develop-ment Status	Measure	Source	Collected By	Reported By	Frequency
	testing				Angeles County, New York City, and Washington, D.C.	
	Draft measure developed and planned for pilot testing	Percentage of Laboratory Response Network (LRN) clinical specimens received for confirmation or rule-out testing from sentinel laboratories to public health laboratory without any quality assurance events	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually
	Draft measure developed and planned for pilot testing	Percentage of LRN environmental samples received for confirmation or rule-out testing from first responders to public health laboratory without any quality assurance events	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually
	Measure developed and data being collected	Percentage of pulsed field gel electrophoresis (PFGE) subtyping data results for E. coli O157:H7 submitted to the	PHEP Cooperative Agreement - FY08/BP9	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County,	Annually

Capability	Measure Develop-ment Status	Measure	Source	Collected By	Reported By	Frequency
		PulseNet national database within four working days of receiving isolate at the PFGE laboratory			New York City, and Washington, D.C.	
	Measure developed and data being collected	Percentage of PFGE subtyping data results for Listeria monocytogenes submitted to the PulseNet national database within four working days of receiving isolate at the PFGE laboratory	PHEP Cooperative Agreement, FY 2008/BP9	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually
	Draft measure developed and planned for data collection in 2010	Time from when sample is received at CDC or a CDC networked lab to time Agency Director (or designee) receives an identifying report. Target = below established standard for each agent on the CDC priority agent list. (must establish standard for each agent on list)	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually

Capability	Measure Develop-ment Status	Measure	Source	Collected By	Reported By	Frequency
	Draft measure developed and planned for data collection in 2010	Percentage of LRN labs reporting routine public health testing results through standards-based electronic disease surveillance systems and have protocols for immediate reporting by telephone for Category A agents (bacillus anthracis, yersina pestis, francisella tularensis, clostridium botulinum toxin, and variola major) for which they conduct testing	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually
	Draft measure developed and planned for data collection in 2010	LRN labs with cumulative proficiency testing scores of 90% or better	PHEP Cooperative Agreement	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually
Near-real-time systems for data capture and	No measures					

Capability	Measure Develop-ment Status	Measure	Source	Collected By	Reported By	Frequency
analysis						
Information gathering and recognition of indicators and warning (this is an intelligence community item)	No measures					
Coordination with U.S. and international partners	No measures					

Table C.4 Status of Performance Measures for Incident Management

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
On-site incident management and multiagency coordination	Measures developed and data being collected	Time to notify pre-identified staff with public health agency incident management functional responsibilities Time for staff with public health agency incident management functional responsibilities to report for duty	PHEP Cooperative Agreement, FY 2008/BP9	CDC	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Annually
Communications among responders	Measures developed and data being collected	Number of hospitals that demonstrate sustained two-way communications capability with the local Emergency Operations Center (EOC) and Tier 2 partners during an exercise or incident, as evidenced by exercise evaluations or after action reports at least once during	Hospital Prepared-ness Program, FY 2008	ASPR	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Twice annually

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
		the current project period.				
Critical resource monitoring, logistics and distribution	No measures					

Table C.5 Status of Performance Measures for Disease Containment and Mitigation

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
Research, development, and procurement of medical countermeasures	No measures					
Management and distribution of medical countermeasures	Measures in use (data being collected).	Time within which personnel can be contacted, in a drill	PHEP Cooperative Agreement, FY 2008-BP9	CDC	72 CRI metropolitan statistical areas (MSA)	Annually
	Measures in use (data being collected).	Percentage of personnel who can be reached, in a drill	PHEP Cooperative Agreement, FY 2008-BP9	CDC	72 CRI metropolitan statistical areas (MSA)	Annually
	Measures in use (data being collected).	Percentage of personnel who report being able to respond, in a drill	PHEP Cooperative Agreement, FY 2008-BP9	CDC	72 CRI metropolitan statistical areas (MSA)	Annually
	Measures in use (data being collected).	Set-up completion time	PHEP Cooperative Agreement, FY 2008-BP9	CDC	72 CRI metropolitan statistical areas (MSA)	Annually

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
	Measures in use (data being collected)	Completion rate	PHEP Cooperative Agreement, FY 2008-BP9	CDC	72 CRI metropolitan statistical areas (MSA)	Annually
	Measures in use (data being collected)	Pick list generation time (minutes)	PHEP Cooperative Agreement, FY 2008-BP9	CDC	72 CRI metropolitan statistical areas (MSA)	Annually
	Measures in use (data being collected)	Inventory data upload time (minutes)	PHEP Cooperative Agreement, FY 2008-BP9	CDC	72 CRI metropolitan statistical areas (MSA)	Annually
Administration of medical countermeasures	Measures in use (data being collected)	Expected rate at which patients can receive countermeasures at points of dispensing (PODs), in a drill	PHEP Cooperative Agreement, FY 2008-BP9	CDC	72 CRI metropolitan statistical areas (MSA)	Annually
Community interventions for disease control	No measures in PHEP Cooperative Agreement now, but a candidate for development in PHEP metrics					

Table C.6 Status of Performance Measures for Health Care Services

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
Access to health care and social services	No measures					
Evidence-based mental/behavioral health prevention and treatment services	No measures					
Medical equipment and supplies monitoring, management, and distribution	Measure developed and data being collected	According to HAvBED definitions, the number of participating hospitals that can report available beds to the state EOC within 60 minutes or less of a state request at least once during the current project period	Hospital Prepared-ness Program, FY 2008	ASPR	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Twice annually
	Measure developed and data being collected	The state EOC can report available beds for at least 75% of participating hospitals, according to HAvBED definitions, to the	Hospital Prepared-ness Program, FY 2008	ASPR	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City,	Twice annually

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
		HHS SOC within 4 hours or less of a request, during an incident or exercise at least once during the current project period			and Washington, D.C.	
	No measures, but is mentioned in JCAHO standards	Hospital's ability to track resources during an emergency	JCAHO standards	JCAHO	Hospitals	At least once every 3 years
Use of remote medical care technology	No measures					
Emergency triage and pre-hospital treatment	No measures					
Patient transport	Measures developed and data being collected.	Number of hospitals that have plans to address medical evacuation	Hospital Prepared-ness Program, FY 2008	ASPR	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Twice annually
Medical surge	No measures					
Palliative care education for stakeholders	No measures					

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
Fatality management	Measures developed and data being collected	Number of hospitals that have written plans to address mass fatality management	Hospital Prepared-ness Program, FY 2008	ASPR	50 states, Puerto Rico, Virgin Islands, Pacific Island Jurisdictions, Chicago, Los Angeles County, New York City, and Washington, D.C.	Twice annually
Monitoring of physical and behavioral health outcomes	No measures					
Application of clinical practice guidelines	No measures					

Table C.7 Status of Performance Measures for Population Safety and Health

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
Responder safety and health	No measures					
Emergency public safety and security	No measures					
Citizen evacuation and shelter-in-place	No measures					
Mass care (sheltering, feeding, and related services)	No measures					
Environmental health	No measures					
Potable water/wastewater and solid waste disposal	No measures					

Table C.8 Status of Performance Measures for Quality Improvement and Accountability

Capability	Measure Development Status	Measure	Source	Collected By	Reported By	Frequency
Use of capability-based performance measures	No measures					
Use of quality improvement methods	No measures					

APPENDIX D. ACRONYMS

ASPR	Assistant Secretary for Preparedness and Response
BARDA	Biomedical Advanced Research and Development Authority
CBRN	chemical, biological, radiological, and nuclear
CBRNE	chemical, biological, radiological, nuclear, and explosives
CDC	Centers for Disease Control and Prevention
CERC	Crisis and Emergency Risk Communication
CHA	community health assessment
CRI	Cities Readiness Initiative
CSTE	Council of State and Territorial Epidemiologists
DHS	Department of Homeland Security
ECP	Emergency Care Partnership Program
EOC	Emergency Operations Center
EOY	end of year
ESAR-VHP	Emergency System for Advance Registration of Volunteer Health Professionals
EWIDS	Early Warning Infectious Disease Surveillance
FEMA	Federal Emergency Management Agency
FOIA	Freedom of Information Act
FY	fiscal year
GAO	Government Accountability Office
HAvBED	National Hospital Available Beds for Emergencies and Disasters
HFPP	Healthcare Facilities Partnership Program
HHS	Department of Health and Human Services
HIPAA	Health Insurance Portability and Accountability Act
HPP	Hospital Preparedness Program
HRSA	Health Resources and Services Administration
HSPD	Homeland Security Presidential Directive

JCAHO	Joint Commission on the Accreditation of Healthcare Organizations
LRN	Laboratory Response Network
MSA	metropolitan statistical area
NACCHO	National Association of County and City Health Officials
NBHPP	National Bioterrorism Hospital Preparedness Program
NDMS	National Disaster Medical System
NHSS	National Health Security Strategy
NIMS	National Incident Management System
NRF	National Response Framework
OIG	Office of Inspector General
OMSPH	Office of Medicine, Science, and Public Health
PAHPA	Pandemic and All Hazards Preparedness Act
PEDSS	Pediatric Emergency Decision Support System
PFGE	pulsed field gel electrophoresis
PHEMCE	Public Health Emergency Medical Countermeasures Enterprise
PHEP	Public Health and Emergency Preparedness
PHER	Public Health Emergency Response
POD	point of dispensing
QI	quality improvement
RFA	Request for Application
SOC	Secretary Operations Center
TCL	Target Capabilities List
UPMC	University of Pittsburgh Medical Center
WHO	World Health Organization