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ISSUE REPORT

Ready or Not?

PROTECTING THE PUBLIC'S HEALTH FROM DISEASES, DISASTERS, AND BIOTERRORISM 2005

DECEMBER 2005

PREVENTING EPIDEMICS. PROTECTING PEOPLE.

Trust for America's Health

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TRUST FOR AMERICA'S HEALTH IS A NON-PROFIT, NON-PARTISAN ORGANIZATION DEDICATED TO SAVING LIVES BY PROTECTING THE HEALTH OF EVERY COMMUNITY AND WORKING TO MAKE DISEASE PREVENTION A NATIONAL PRIORITY.

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Introduction

This is the third year that Trust for America's Health (TFAH) has issued a study of the nation's public health emergency response capabilities. The public health system is an integral part of the nation's disaster response efforts, charged with preventing and reducing disease and injury. During catastrophes, ranging from a hurricane to a major disease outbreak to a bioterrorism attack, public health and health care professionals act as first responders, investigators, strategists, and medical care providers. They must diagnose and contain the spread of disease and treat individuals who were injured or may have been exposed to infectious or harmful materials.

After September 11, the subsequent anthrax attacks, and a series of assessments from expert groups including the Institute of Medicine (IOM), Government Accountability Office (GAO), and the Centers for Disease Control and Prevention (CDC), the U.S. Congress recognized that America's public health system was fundamentally unprepared to respond to major modern threats.[1] It passed the Public Health Security and Bioterrorism Act of 2002 to help bolster readiness at the federal, state, and local levels of government. Experts have widely recognized that the nation's public health system had been chronically under-funded for the past several decades and the "infrastructure had greatly deteriorated," and that it would require a long-term, sustained commitment to yield the major improvements required to protect Americans from the range of health threats the country faces in the 21st century.[2]

In order to gauge progress and continued vulnerabilities in the nation's public health preparedness, TFAH issued "Ready or Not? Protecting the Public's Health in the Age of Bioterrorism" reports in December 2003 and 2004. In those reports, TFAH found that the nation was only modestly better prepared to respond to health threats than prior to the 2001 tragedies. The studies concluded that states across the country were still struggling to meet basic preparedness requirements, had inadequate resources to meet emergency needs, and had unresolved jurisdictional issues with local and federal agencies.

This year, Hurricane Katrina was a graphic demonstration of many of the challenges and complications that arise during disasters, and it brought greater awareness of the many continued vulnerabilities in the nation's emergency response capabilities.

Also in 2005, the fear of a pandemic flu outbreak has escalated in the United States and around the world. The emergence of a new, lethal strain of the flu virus, against which people have no immunity, has health experts on high alert. TFAH estimates that a mid-severity pandemic outbreak could cause over half a million deaths and two million hospitalizations in the United States alone and could also disrupt the global economy.[3] The federal government released a long-delayed pandemic preparedness plan, which called for increased funding and modernized vaccine production capacity and detailed many other important public health response strategies, most of which will require implementation at the state and local level. However, U.S. pandemic planning is still lagging in many crucial areas, particularly the preparations at the state and local levels, which would be at the front lines in caring for the public during an outbreak.

READY OR NOT? 2005 -- WE'RE STILL NOT READY

Four years after September 11, 2001, this report examines areas of progress in the country's ability to respond to public health emergencies, and the vulnerabilities that remain. While considerable progress has been achieved in improving America's post-September 11 health emergency preparedness, the nation is still not adequately prepared for the serious threats we face. To achieve an appropriate level of preparedness, efforts must be rapidly enhanced and accelerated, requiring improved policies and funding at all levels of government.

The report is intended to serve as a tool to help the nation move toward an improved, strategic "all-hazards" system for protecting the public's health, capable of responding effectively to health threats posed by diseases, disasters, and bioterrorism. TFAH also presents this report in an effort to provide greater accountability and transparency. The goal of this project is to help inform the American people about what they should expect from the publicly funded programs that are intended to protect their health and safety, and what gaps leave the country at risk. This report gives scores to various aspects of federal and state preparedness. The "scores" are not based on an absolute scale of success, but indicate relative achievements in areas of preparedness, and highlight areas where increased prioritization and investment must be made to address problems.

- **Section 1** examines state-by-state health preparedness. Each state received a score based on 10 key indicators that TFAH developed with input from an advisory committee of experts. The indicators reflect fundamental health emergency capabilities, including public health and healthcare capacities. Currently, no other national standards or evaluations of state preparedness activities are made available to the public.
- **Section 2** examines federal health preparedness programs and activities. TFAH conducted a survey of 20 independent national, state, and local experts who provided their assessments of key federal initiatives. The survey provides an indication of what is going well, and areas that may be more problematic.
- **Section 3** examines a qualitative survey of states about their readiness to counter smallpox and deploy the Strategic National Stockpile.
- **Section 4** offers recommendations for improving all-hazards emergency health preparedness.

READY OR NOT? 2005 KEY FINDINGS

FEDERAL PREPAREDNESS

- The federal government received a **"D+"** grade for post 9/11 public health emergency preparedness activities, based on a survey of experts.
  - The Strategic National Stockpile received a **"C+"** grade
  - Federal initiatives including the Cities Readiness Initiative, BioSurveillance activities, Pandemic Flu Planning, and overall management of federal funds and programs received **"C-"** grades.
  - Coordination among federal agencies, the establishment of measurable goals and directions, BioWatch, and the federal health response to Hurricane Katrina received **"D"** grades.
  - The Smallpox Vaccination Initiative received a **"D-."**

STATE PREPAREDNESS

- Nearly 60 percent of states received a score of 5 or less of 10 possible indicators. Nearly 85 percent of states received a score of 6 or less.
  - Only seven states and two cities have achieved "green" status for the **Strategic National Stockpile,** which means being recognized by the U.S. Centers for Disease Control and Prevention as adequately prepared to administer and distribute vaccines and antidotes in the event an emergency.
  - Only 10 state public health labs have adequate **chemical terrorism response capabilities.** Only 19 states have CHEMPACK repositories of nerve agent antidotes.
  - Over one-quarter of states do not have sufficient **bioterrorism laboratory response capabilities.**
  - Nearly half of states do not use national standards **to track disease outbreak information.**
  - Hospitals in nearly one-third of states and D.C. are not sufficiently prepared, through planning or coordination with local health agencies, **to care for a surge of extra patients** by using non-health facilities, such as community centers, sports arenas, or hotels.
  - Hospitals in only two states have sufficient plans, incentives, or provisions to **encourage healthcare workers to continue to come to work** during a major infectious disease outbreak.
  - Hospitals in nearly one-third of states lack sufficient capabilities to **consistently and rapidly consult with infection control experts** about possible or suspected disease outbreaks.
  - Hospitals in nearly one-third of states have not sufficiently planned for **prioritizing distribution of vaccines or antiviral medications to hospital workers.**
  - Hospitals in over 40 percent of states **do not have sufficient backup supplies of medical equipment to meet surge capacity needs** during a pandemic flu or other major infectious disease outbreak.

[See Appendix A for key findings from the "Ready or Not?" 2003 and 2004 reports.]

THREE YEARS AFTER MAKING THE NATIONAL SMALLPOX PREPAREDNESS INITIATIVE A PRIORITY: ARE WE READY?

- The national smallpox vaccination initiative is full of "glitches," based on a survey of state emergency response and public health officials.
  - States questioned the federal management of the Strategic National Stockpile (SNS) program. For instance, they reported that they have not received clear information about the quantities of vaccines or equipment that would arrive for a mass vaccination event or about how the SNS could be deployed to 50 states simultaneously.
  - Overall, experts felt the smallpox response plan did not match the best bio-medical recommendations.
  - There are ongoing concerns about managing public panic, a shortage of healthcare workers during a crisis, and how the differences in state responses would impact the response effort.

PUBLIC HEALTH PREPAREDNESS POST-SEPTEMBER 11

In June 2002, Congress passed the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, which included the authorization of additional funds to help revitalize public health emergency preparedness. The funds support federal bioterrorism programs as well as provide grants to states [see Appendix B for "cooperative agreement" grant funds to states] through the CDC and the Health Resources and Services Administration (HRSA).

The CDC funds to states are intended to support:

- Preparedness planning, including planning for deployment of the Strategic National Stockpile.
- Surveillance and epidemiology.
- Laboratory capacity for biological and chemical agents.
- Information technology, including the Health Alert Network.
- Communications about health threats.
- Education and workforce training.[4]

The federal grants are then apportioned among state and local jurisdictions. The states and localities are required to demonstrate a "consensus, approval, or concurrence between state and local public health" officials and departments concerning the use of the federal funds.[5]

HRSA FUNDING DISTRIBUTION OVERVIEW

The June 2002 Congressional passage of the Public Health Security and Bioterrorism Preparedness and Response Act created a HRSA-administered grant program to aid state hospital preparedness for mass emergency situations such as bioterrorism. Congress authorized $520 million for this program in FY2003, and such sums as may be necessary through 2006."[6]

The funds, awarded as cooperative agreements, are distributed "according to a formula of a base amount plus an amount according to population, to the same awardees as the CDC grants (50 states, the District of Columbia, territories, the cities of New York and Chicago, and Los Angeles County), and are also administered by the state, territorial or municipal health officials."[7]

HRSA guidance also stipulates that "80 [percent] of the funding awarded to state health departments should be passed through to hospitals, emergency medical systems, and other healthcare entities," specifically poison control centers and health centers.[8]

The HRSA funds are designed to "ensure that hospitals and other healthcare facilities have the capacity to respond to public health emergencies" and effectively collaborate with CDC grantees during a bioterrorist attack or other mass emergency event.[9] These funds are intended to focus on priority areas, including:

- Administration.
- Surge capacity.
- Emergency medical services.
- Linkages to public health departments.
- Education and preparedness training.
- Terrorism preparedness exercises.[10]

Effective response to any large-scale emergency situation requires a coordinated effort between the public health and healthcare delivery sectors. To facilitate cooperation and competencies between CDC and HRSA grantees, the guidance to states also contains cross-cutting benchmarks relevant for both CDC and HRSA grantees.

Federal Bioterrorism Preparedness Funding Post-September 11, 2001*

Fiscal Year	Centers for Disease Control and Prevention (CDC)	Health Resources and Services Administration (HRSA)	TOTAL
FY2002	$918,000,000	$124,500,000	$1,042,500,000
FY2003	$870,000,000	$498,000,000	$1,368,000,000
FY2004	$849,596,000**	$498,000,000	$1,347,596,000
FY2005	$862,777,000**	$470,755,000	$1,333,532,000

**Prior to September 11, funding for bioterrorism preparedness was $67 million in FY 2001.*

*** This includes money "reprogrammed" from state funds and channeled to the Cities Readiness Initiative (CRI), $27 million in 2004 and $52 million in 2005.*

FEDERAL, STATE, AND LOCAL PUBLIC HEALTH JURISDICTIONS

The "public health system" is not a single entity, but rather a loosely affiliated network of approximately 3,000 federal, state, and local health agencies, often working closely with private sector voluntary and professional health associations.

Some of the ongoing problems resulting from the structure of interrelationships among federal, state and local health systems include:

1. Lack of clear roles among state, local and federal health agencies, and fragmented responsibilities.
2. No minimum standards, guidelines or recommendations for levels of capacity or service required of state and local health departments. This results in wide differences in services and competencies across state and local agencies.
3. Problems arising from federal funding that are largely based on categorical or program grants, which are often restrictive and lack a system of accountability.

Federal Role: Policymaking, financing activities, overseeing national disease prevention efforts, collecting and disseminating health information, building capacity, and directly managing some services.[11] Public health functions are widely diffused across eight federal agencies and two offices.

State and Local Role: Under U.S. law, state governments have primary responsibility for the health of their citizens. Constitutional "police powers" give states the ability to enact laws and issue regulations to protect, preserve, and promote the health, safety, and welfare of their residents. In most states, the laws then charge the local levels of government with responsibility for caring for the health of their citizens.

WHAT DOES ALL-HAZARDS PREPAREDNESS LOOK LIKE?

"All-hazards" refers to how preparedness for health emergencies should be addressed so that the United States may be able to respond to the full range of potential threats, including bioterrorism, naturally occurring infectious disease outbreaks, natural disasters, and accidents.

The goals of a 24x7 public health emergency response include:

- Rapid **detection** of emergency disease threats, including those caused by bioterrorism.
- Intensive **investigative** capabilities to quickly diagnose a rising disease threat or identify the biological or chemical agent used in an attack.
- Mass containment strategies, including plans, surge workforce and equipment, and pharmaceuticals needed for **wide-scale vaccination or antidote administration and isolation and quarantining** when necessary.
- Streamlined and effective **communications** channels so that health workers can communicate with each other and be able to accurately and swiftly inform citizens about 1) the nature of an emergency or attack, 2) the risk of exposure and how to seek treatment when needed, and 3) any actions that they or their families should take to protect themselves. Communications must also be able to reach and take into consideration vulnerable, disadvantaged, and other special needs populations.

What it will take to achieve basic levels of preparedness:

- **Leadership, planning, and coordination:** An established chain-of-command and well-defined roles and responsibilities for seamless operation between different medical and logistical functions and among federal, state, and local authorities during crisis situations, including with police, public safety, and other first responders.
- **An expert and comprehensive workforce:** Highly trained and complete staffs of public health professionals, including health care providers, epidemiologists, lab scientists, and other experts, in addition to backup workers for surge capacity conditions.
- **Modernized technology:** State-of-the-art laboratory equipment and information collection and health tracking systems.
- **Pre-planned, safety-first rapid emergency response capabilities and precautions:** Tested plans and safety precautions to mitigate potential harm to communities, public health professionals and first responders.
- **Immediate, streamlined communications capabilities:** Coordinated, integrated communications among all parts of the public health system and with the public, including back-up systems during power loss.

WHAT IS...

Bioterrorism? The intentional or deliberate use of germs, toxins, pathogens, or other agents that cause disease or death in people, animals, or plants.

Chemical terrorism? The deliberate use of chemical agents, such as poisonous gases, arsenic, or pesticides, that have toxic effects on people, animals, or plants, to cause illness or death.

All-hazards approach? The public health community is responsible for protecting the public from a variety of potential threats to health. This can include a major infectious disease outbreak, an intentional act of bioterrorism or chemical terrorism, a major accident, or the aftermath of a natural disaster. An "all-hazards" approach takes into consideration the significant overlap between bioterrorism preparedness and preparedness for traditional public health functions.

WHERE ARE THE NATIONAL PERFORMANCE MEASURES FOR BIOTERRORISM PREPAREDNESS?

Four years after September 11, there are still no official, agreed upon, measurable performance standards of accountability for state bioterrorism and emergency public health preparedness programs and activities. Despite assurances from HHS and CDC that these standards were forthcoming over the past few years, they are still not in place.

Without these measures, states cannot appropriately demonstrate their progress or document how they have used taxpayer-supported preparedness funds. In the spring of 2005, HHS released preliminary objectives for "six priority areas for national readiness"; however, only goals and measures for two of the six areas are available, and many of those remain vague or without specific accountability metrics. [See Appendix D for more on the National Preparedness Goals.]

While states are considered to have primary responsibility for public health functions, health officials in the states look to the federal government for guidance, and the federal funds provided to states should include both guidance and accountability measures. A fall 2004 survey of 42 states found that nearly 60 percent of states had not developed state-specific public health or bioterrorism preparedness metrics or other performance measures.[12]

For the past two years, and again this year, TFAH recommends that:

- The establishment of measurable performance standards should become a federal priority.
- In order for states and the four directly funded metropolitan areas to be eligible to continue to receive bioterrorism and public health preparedness funds, they should be required to demonstrate 1) how they have used funds to make tangible improvements based on the standards once they have been developed, and 2) how they are adequately providing resources for their ongoing public health needs and programs, by providing a certified "maintenance of effort" that they are protecting the health of their citizens.

In the absence of government-supported and publicly available measures, this report concentrates on 10 measurable performance indicators from a variety of public sources to help supply policymakers and the public with information about the nation's preparedness for health emergencies.

"None of this emergency preparedness stuff has actually been researched, so we don't know what a good target is. ...[I]n the grant guidance [to states] this year we have...34 such [draft measures]. The response is mixed: Some states [respond positively], and some states [question them]. So we are really trying to balance that with our accountability to the nation with this investment."

-- Remarks by a CDC senior official, Office of Terrorism Preparedness and Emergency Response, before the Defense Forum Foundation, May 24, 2005.[13]

Public health is typically difficult to evaluate due to a general dearth of available, accessible, accurate, and specific information about public health systems and performance, such as tracking the use of taxpayer dollars or measuring rates of many diseases in communities. TFAH has recommended that this information should be considered essential for maintaining an accountable, responsive, and coordinated system designed to protect the health of communities.

SECTION 1

State-By-State Health Preparedness Indicators And Scores

WHY STUDY STATES' PREPAREDNESS?

Each of the 50 states has primary legal jurisdiction and responsibility for the health of its citizens under the U.S. Constitution. The states all differ in how they structure and deliver public health services. In some states, the public health system is centralized, and the state has direct control and supervision over local health agencies. In other states, local public agencies developed separately from the state and are run by counties, cities, or townships and usually report to one or more elected officials.[14]

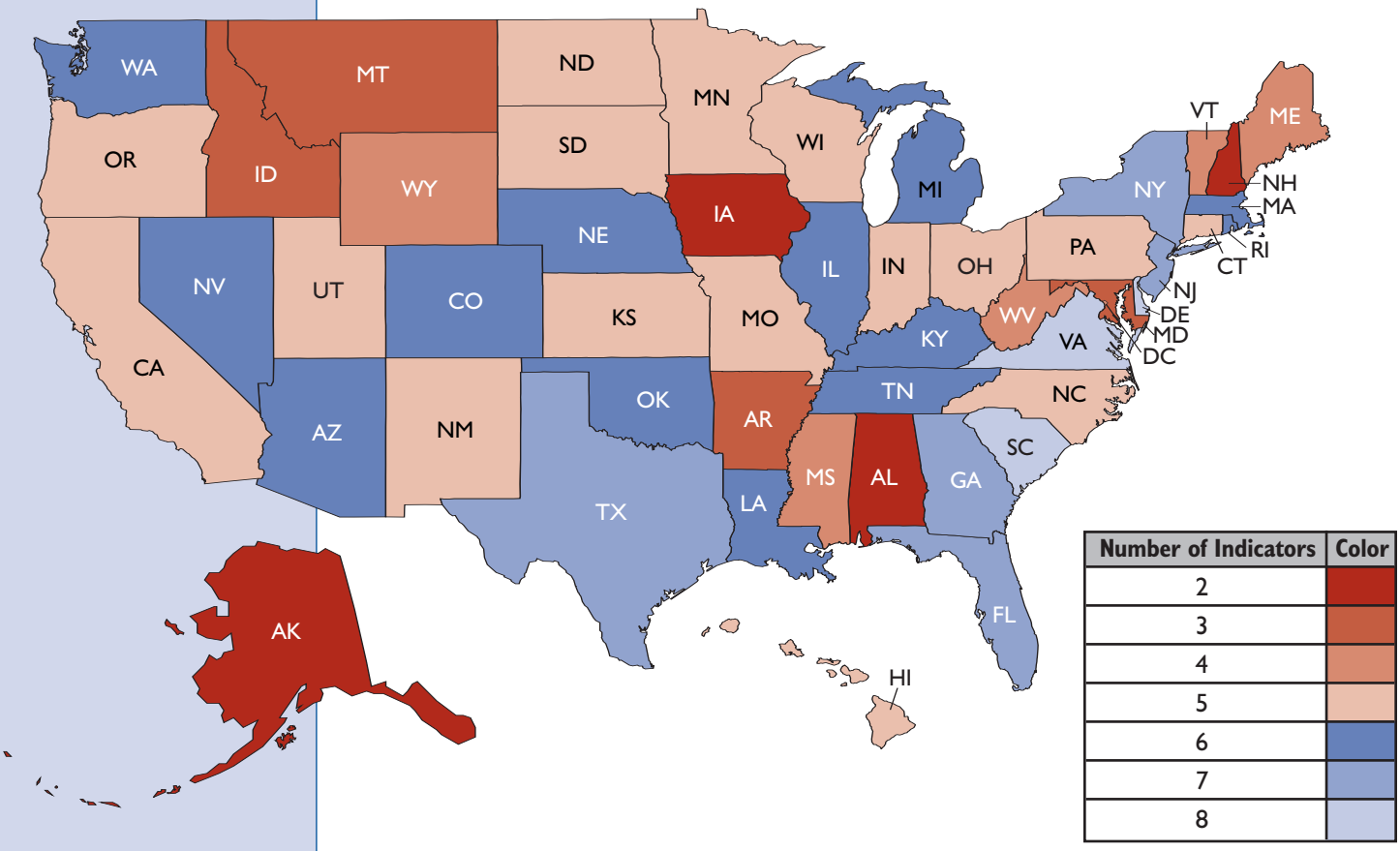
Regardless of where Americans live, however, there are fundamental health protections that the public should expect. Emergency response to disasters, such as a hurricane or earthquake, and the containment of infectious diseases with the potential for mass-contagion, are two extreme and serious examples of such protections.

State Scores

Each state received a score based on 10 key indicators to assess its health emergency preparedness capabilities. The indicators were developed with input from an advisory committee of experts. Taken collectively, these indicators offer a composite snapshot of preparedness, including strengths and vulnerabilities. [Details about the indicator measures are described in the following section.]

States received one point for achieving an indicator or zero points if they did not achieve the indicator. Zero was the lowest possible overall score and 10 the highest.

Nearly 60 percent of states received a score of 5 or less of 10 possible indicators. Nearly 85 percent of states received a score of 6 or less. Delaware, South Carolina and Virginia scored the highest, with a score of eight. Alabama, Alaska, Iowa and New Hampshire scored the lowest, achieving only a score of two.



SCORES BY STATE

8	7	6	5	4	3	2
Delaware	Florida	Arizona	California	D.C.	Arkansas	Alabama
South Carolina	Georgia	Colorado	Connecticut	Maine	Idaho	Alaska
Virginia	New Jersey	Illinois	Hawaii	Mississippi	Maryland	Iowa
	New York	Kentucky	Indiana	Vermont	Montana	New Hampshire
	Texas	Louisiana	Kansas	West Virginia		
		Massachusetts	Minnesota	Wyoming		
		Michigan	Missouri			
		Nebraska	New Mexico			
		Nevada	North Carolina			
		Oklahoma	North Dakota			
		Rhode Island	Ohio			
		Tennessee	Oregon			
		Washington	Pennsylvania			
			South Dakota			
			Utah			
			Wisconsin			

STATE PREPAREDNESS SCORES

States	1 Achieved green status for Strategic National Stockpile Delivery	2 Has sufficient BSL-3 labs	3 Has enough lab scientists to test for anthrax or plague	4 Has sufficient capabilities to respond to a chemical terrorism threat	5 Has a disease tracking system to collect and monitor data electronically via the Internet	6 Has plan or is part of state/local planning effort to care for patients at non-healthcare facilities	7 Has plans, incentives, or provisions to ensure continuity of care in the event of a major outbreak	8 Has an infection control professional available within 15 minutes on a 24 hour/ 7 day basis	9 Has worked with state or local health department to prioritize hospital workers' receipt of vaccine or antivirals	10 Has sufficient medical equipment and supplies for 10 additional patients requiring ventilation	2005 Total Score
Alabama					✓			✓			2
Alaska		✓	✓								2
Arizona		✓	✓		✓	✓		✓	✓		6
Arkansas		✓						✓	✓		3
California		✓	✓	✓				✓		✓	5
Colorado		✓	✓		✓	✓			✓	✓	6
Connecticut		✓	✓					✓	✓	✓	5
Delaware	✓	✓	✓		✓	✓		✓	✓	✓	8
District of Columbia			✓					✓	✓	✓	4
Florida	✓	✓	✓	✓	✓			✓		✓	7
Georgia		✓	✓		✓	✓		✓	✓	✓	7
Hawaii			✓			✓		✓	✓	✓	5
Idaho			✓		✓	✓					3
Illinois	✓				✓	✓		✓	✓	✓	6
Indiana		✓	✓			✓		✓	✓		5
Iowa			✓			✓					2
Kansas		✓	✓		✓	✓			✓		5
Kentucky		✓	✓		✓	✓		✓	✓		6
Louisiana	✓		✓		✓	✓		✓	✓		6
Maine		✓	✓			✓		✓			4
Maryland								✓	✓	✓	3
Massachusetts		✓	✓	✓				✓	✓	✓	6
Michigan			✓	✓	✓	✓		✓		✓	6
Minnesota		✓	✓	✓		✓			✓		5
Mississippi		✓	✓			✓				✓	4
Missouri	✓	✓	✓					✓		✓	5
Montana		✓	✓			✓					3
Nebraska			✓		✓	✓		✓	✓	✓	6
Nevada		✓			✓	✓		✓	✓	✓	6
New Hampshire		✓							✓		2
New Jersey		✓	✓		✓	✓		✓	✓	✓	7
New Mexico		✓	✓	✓				✓	✓		5
New York		✓	✓	✓	✓			✓	✓	✓	7
North Carolina		✓	✓			✓		✓		✓	5
North Dakota		✓			✓	✓			✓	✓	5
Ohio			✓		✓			✓	✓	✓	5
Oklahoma		✓	✓		✓	✓		✓	✓		6
Oregon			✓		✓	✓			✓	✓	5
Pennsylvania		✓	✓		✓			✓		✓	5
Rhode Island			✓			✓	✓	✓	✓	✓	6
South Carolina		✓	✓	✓	✓	✓		✓	✓	✓	8
South Dakota		✓	✓			✓	✓		✓		5
Tennessee		✓			✓	✓		✓	✓	✓	6
Texas	✓	✓	✓		✓			✓	✓	✓	7
Utah			✓			✓		✓	✓	✓	5
Vermont		✓	✓		✓	✓					4
Virginia	✓	✓	✓	✓	✓	✓		✓		✓	8
Washington		✓	✓			✓		✓	✓	✓	6
West Virginia		✓			✓	✓			✓		4
Wisconsin		✓	✓	✓		✓			✓		5
Wyoming		✓	✓			✓		✓			4
Total	7	37	41+D.C.	10	27	35	2	35+D.C.	34+D.C.	29+D.C.	

Indicators 1-5 measure the capabilities of state and local health departments, and reflect states' use of funds received through CDC bioterrorism and public health grants. The data for these indicators are from a variety of public sources, CDC reports, a survey conducted by the Association of Public Health Laboratories (APHL), public announcements from states, and interviews with government officials.

Indicators 1-5 measure:

1. Whether the state meets the highest rating for preparedness to provide emergency vaccines, antidotes, and medical supplies from the Strategic National Stockpile.
2. Whether the state reports having adequate laboratories to meet anticipated preparedness and response needs to bio-threats as outlined in its state preparedness plan.
3. Whether the state has enough trained lab scientists needed to perform tests in the event of a potential outbreak of anthrax or the plague.
4. Whether the state has laboratory capabilities to adequately respond to a chemical terrorist attack.
5. Whether the state uses the Internet-based disease outbreak tracking system that meets national standards.

Indicators 6-10 measure the capabilities of hospitals and other healthcare facilities and reflect states' use of funds received through the HRSA hospital preparedness grants. The data for the indicators are from a survey conducted by TFAH and the Association for Professionals in Infection Control and Epidemiology (APIC) of 1,878 APIC members in June 2005. APIC members are experts in infection prevention and serve a "watchdog" role for infectious disease issues in hospitals. The survey questions were developed by members of the APIC Emergency Preparedness Committee Advisory Board and TFAH. [See Appendix E for additional details on the survey.]

Indicators 6-10 measure:

6. Whether hospitals in the state have established plans or have been involved in state/local planning efforts to care for patients at a non-healthcare facility, such as a community center, sports arena, or hotel.
7. Whether hospitals in the state have a plan, incentives, or provisions to encourage healthcare workers to continue coming to work in the event of a major disease outbreak.
8. Whether hospitals in the state have infection control personnel available for an immediate (within 15 minutes) verbal consultation (via phone or face-to-face) with hospital or public health personnel on a 24-hour/7-day basis.
9. Whether hospitals in the state have worked with state or local health officials to plan for prioritizing hospital workers to receive health agency-managed vaccine or antivirals in the event of an infectious outbreak.
10. Whether hospitals in the state have sufficient medical equipment and supplies for surge capacity needs for 10 additional ventilated patients requiring mechanical ventilation.

Note: The "Ready or Not?" reports in 2003 and 2004 also contained 10 indicators; however, the indicators are adapted annually to reflect changing expectations for preparedness each year. Expectations for preparedness in 2005 should be greater than in previous years.

Indicator 1: ONLY SEVEN STATES AND TWO CITIES ARE RATED AT THE HIGHEST PREPAREDNESS LEVEL REQUIRED TO PROVIDE EMERGENCY VACCINES, ANTIDOTES, AND MEDICAL SUPPLIES FROM THE STRATEGIC NATIONAL STOCKPILE.

7 states have achieved "green" status for Strategic National Stockpile delivery and administration capabilities	**43 states and D.C. have NOT achieved "green" status for Strategic National Stockpile delivery and administration capabilities**
Chicago*	Alabama
Delaware	Alaska
Florida	Arizona
Illinois	Arkansas
Louisiana	California
Missouri*	Colorado
New York City**	Connecticut
Texas*	D.C.
Virginia	Georgia
	Hawaii
	Idaho
	Indiana
	Iowa
	Kansas
	Kentucky
	Maine
	Maryland
	Massachusetts
	Michigan
	Minnesota
	Mississippi
	Montana
	Nebraska
	Nevada
	New Hampshire
	New Jersey
	New Mexico
	New York**
	North Carolina
	North Dakota
	Ohio
	Oklahoma
	Oregon
	Pennsylvania
	Rhode Island
	South Carolina
	South Dakota
	Tennessee
	Utah
	Vermont
	Washington
	West Virginia
	Wisconsin
	Wyoming

Source: CDC

** Chicago, Missouri, and Texas are recognized as achieving "green minus" status rather than "full green."*

*** New York City has achieved "green" status, but the full state has not.*

The CDC has not released its criteria for its rating system; however, green is the highest, followed by amber and red, based on a "stop-light" model. The CDC has also not released details for which states have achieved which levels, but did release an aggregate tally of the number of states and cities reaching the different levels. TFAH received information about the states with "green" status by reviewing public announcements from states and interviews with state officials as of October 2005.

Color Status	January 2003	January 2004	October 2005
Green	3	3	10
Amber	48	48	38
Red	3	3	6

Note: States, plus New York City, Los Angles County, D.C., Chicago, and Puerto Rico are included. Identification of one of the green states has yet to be made publicly available. The CDC measurement system also gives states "plus" or "minus" designations within their color categories. This chart includes the "plus" and "minus" scores with the "green," "amber," and "red" designees. The standards for SNS grading have evolved to reflect higher standards over time, which is why some states that were previously amber have dropped to red.

THE STRATEGIC NATIONAL STOCKPILE (SNS)

The SNS is a national repository of antibiotics, chemical antidotes, antitoxins, various pharmaceuticals, and other medical supplies and equipment to be used in the event of a terrorist attack or major natural disaster. The stockpile is kept in 12 undisclosed locations throughout the United States containing "12-hour push packages" of materials, which are supposed to be able to be delivered anywhere in the United States within 12 hours. There is a "vendor-managed inventory" component to the SNS, where some manufacturers maintain control of the SNS supplies.[15] Some of the contents of the stockpile include:[16]

- Smallpox vaccine for the entire U.S. population.
- "Millions" of doses of countermeasures against anthrax, plague, and tularemia.
- Botulinum antitoxin (which the Department of Defense started stockpiling in the early 1990s).
- Countermeasures to address radiation exposure (including diethylenetriaminepentaacetate [DTPA] and Prussian Blue).
- Potassium iodide, which protects the thyroid from radioactive iodide.
- Over one million doses of the licensed anthrax vaccine (with more ordered).[17]

As of FY2004, the stockpile, which is considered a "federal asset," is managed by HHS in coordination with the U.S. Department of Homeland Security (DHS). The SNS is operated out of CDC.

Governors, the president, or, in some cases, state health officers can request deployment of the SNS. The federal responsibility is to deliver the medical supplies to states, which then have the responsibility of distributing the materials to their citizens. A handful of federal technical advisors help advise local authorities, but otherwise the distribution and administration of the SNS becomes the responsibility of the states and localities.

THE STRATEGIC NATIONAL STOCKPILE ON SEPTEMBER 11 AND ANTHRAX ATTACKS

"On September 11, 2001, the Strategic National Stockpile (formerly the National Pharmaceutical Stockpile) delivered fifty tons of medical supplies, including prophylaxis and intravenous fluid, to New York City within seven hours of the attack on the World Trade Centers. In response to the anthrax attacks, between Oct. 15 and Dec. 30, the stockpile helped deliver 3.79 million tablets of three key antibiotics -- amoxicillin, ciprofloxacin and doxycycline -- for post-exposure preventative treatment of postal workers, mail handlers, and other occupants of affected buildings."[18]

CHEMPACK

CHEMPACK is a sub-unit of the SNS program, created to build repositories of nerve agent antidotes for response to a chemical or nerve agent attack. The response time to treat nerve agent and chemical exposure is much shorter than the 12 hours required to deploy the SNS, so CHEMPACK is maintained separately and is housed in local jurisdictions throughout the country to be available for faster use.

The goal was to have CHEMPACK in place around the country by the end of 2005. Currently, according to a number of sources in states, the system is deployed in only 19 states, due to shortages in product availability.

As of May 2005, according to a CDC official, "we are trying to get out 2,300 [CHEMPACK] containers. Right now we have 591, and these are usually stored in hospitals..."[19]

Also, CHEMPACK only includes nerve agent antidotes. It does not include possible available antidotes for some chemical blood or blister agents, such as hydrogen cyanide (which is commercially used in 41 states) and lewisite (a blister agent used in World War I).[20]

It is unclear what support would be available for chemical attacks or accidents where there is no antidote available, as would be the case for most chemical threats, such as chlorine or mustard gas. There are also "shelf-life" concerns for the materials in CHEMPACK, which need to be systematically replaced based on expiration dates.

The antidote contents reported to be available in CHEMPACKs include:[21]

- "Atropine -- alleviates symptoms such as excess salivation, urination, defecation, vomiting, and excess secretions.
- Pralidoxime -- helps reactivate the enzyme that is compromised by the nerve agent and alleviates symptoms such as muscle weakness, rapid heart rate, high blood pressure, and muscle twitching.
- Diazepam -- stops seizures that may occur."[22]

Indicator 2: OVER ONE-FORTH OF STATES REPORT THAT THEY DO NOT HAVE SUFFICIENT BIO-THREAT RESPONSE LABORATORY CAPABILITIES (FACILITIES, TECHNOLOGY, AND/OR EQUIPMENT).

37 states report they do have adequate bio-safety level 3 (BSL-3) laboratories to meet anticipated preparedness needs as outlined in their state's bioterrorism preparedness plan	**13 states and D.C. report they do NOT have adequate bio-safety level 3 (BSL-3) laboratories to meet anticipated preparedness needs as outlined in their state's bioterrorism preparedness plan**
Alaska	Alabama
Arizona	D.C.
Arkansas	Hawaii
California	Idaho
Colorado	Illinois*
Connecticut	Iowa
Delaware	Louisiana
Florida	Maryland
Georgia	Michigan
Indiana	Nebraska
Kansas	Ohio
Kentucky	Oregon
Maine	Rhode Island
Massachusetts	Utah
Minnesota	
Mississippi	
Missouri	
Montana	
Nevada	
New Hampshire	
New Jersey	
New Mexico	
New York	
North Carolina	
North Dakota	
Oklahoma	
Pennsylvania	
South Carolina	
South Dakota	
Tennessee	
Texas	
Vermont	
Virginia	
Washington	
West Virginia	
Wisconsin	
Wyoming	

Source: APHL September-October 2005 Survey.

**Illinois did not respond to the survey. Illinois reported it did not have sufficient capabilities in the 2004 "Ready or Not?" report.*

Puerto Rico responded that it did NOT have sufficient BSL-3 capabilities.

Most states currently have at least one bio-safety level 3 (BSL-3) laboratory, which requires a level of equipment and staff capable of safely handling "infectious agents that may cause serious or potentially lethal disease as a result of exposure" via inhalation.[23] However, only 37 states report that they have sufficient capacity to meet current testing demands and any surge that would accompany an emergency.

TFAH's 2003 "Ready or Not?" report found that 43 states reported having one BSL-3 laboratory, but only six states reported having sufficient biological response capabilities. Last year's "Ready or Not?" found that 16 states reported sufficient bio-capabilities, so this year's increase to 37 is significant.

Public health laboratories are responsible for identifying naturally occurring and man-made health threats. The identification and diagnosis process determines the disease containment and treatment strategies in response to whatever emergency may arise. The term "public health laboratories" actually refers to a "loose network of federal, state, and local laboratories that work in undefined collaboration with private clinical laboratories."[24]

LABORATORY RESPONSE NETWORK

In lieu of bolstering laboratory preparedness in each state, a Laboratory Response Network (LRN) was established in 1999 to provide "surge capacity" support to states. Overseen by the CDC, the LRN is an integrated network of approximately 120 labs encompassing federal, state, local, veterinary, military, environmental, food testing, and international labs.[25]

The LRN provides emergency assistance and support though the pooling of resources and personnel based on cooperative agreements. During the anthrax attacks of 2001, a Florida LRN lab conducted over one million separate anthrax tests. Additionally, during a crisis, some experts note that police, military, and Federal Bureau of Investigation (FBI) lab facilities would also be used.

FLASHBACK TO OCTOBER 2001 ANTHRAX ATTACKS: LABS QUICKLY OVERWHELMED

The anthrax attacks of 2001 emphasized the stresses placed on the network of public health laboratories during a health crisis. Given that laboratory professionals are not only charged with helping to identify harmful agents, but also with preventing their spread and facilitating rapid treatment, their role is a critical component of an effective national response. The anthrax attacks demonstrated that the public health laboratory system, comprised of approximately 2,000 federal, state, and local labs, needed an upgrade in resources and capacity to meet the continued threat posed by intentionally released agents and fast-moving, natural disease threats.[26]

A 2003 study in the journal, "Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science," analyzed the medical and public health response to the anthrax attacks, including an examination of the burdens that were placed on public health laboratories. "Too many citizens, elected leaders, and national security officials still have limited understanding of the degree to which 22 cases of anthrax rocked the public health agencies and hospitals involved in the response to this small bioterrorist attack... State public health laboratories across the country were highly stressed by the quantity of potentially contaminated items brought in for testing. CDC laboratorians worked around the clock, sometimes sleeping in the lab, to analyze clinical samples... Many public health officials noted there was a lack of space to store samples and inadequate procedures to receive them." [27]

A 2002 CDC study, "Laboratory Response to Anthrax Bioterrorism, New York City, 2001," examined the performance of local health department laboratories in New York during the anthrax crisis. Though the workload "threatened to overwhelm" the system, a collaborative effort with CDC and the Department of Defense made the effort "largely successful."[28] However, the authors cautioned that "before October 2001, we thought we were prepared to confront an event on the scale of this bioterrorism attack. An important lesson from this experience is that, despite all additional precautions and enhancements made to the laboratory and the response network, another attack, if and when it occurs, will present further surprises."[29]

Indicator 3: NEARLY 20 PERCENT OF STATES REPORT THAT THEY DO NOT HAVE ADEQUATE NUMBERS OF LAB SCIENTISTS TO MANAGE TESTS FOR ANTHRAX OR THE PLAGUE IF THERE WERE TO BE A SUSPECTED OUTBREAK.

41 states and D.C. report that, in a likely bioterrorism scenario, they would have sufficient, trained laboratory scientists to manage tests for anthrax or the plague if there were to be a suspected outbreak	**9 states report that, in a likely bioterrorism scenario, they would NOT have sufficient, trained laboratory scientists to manage tests for anthrax or the plague if there were to be a suspected outbreak**
Alaska	Alabama
Arizona	Arkansas
California	Illinois*
Colorado	Maryland
Connecticut	Nevada
Delaware	New Hampshire
D.C.	North Dakota
Florida	Tennessee
Georgia	West Virginia
Hawaii	
Idaho	
Indiana	
Iowa	
Kansas	
Kentucky	
Louisiana	
Maine	
Massachusetts	
Michigan	
Minnesota	
Mississippi	
Missouri	
Montana	
Nebraska	
New Jersey	
New Mexico	
New York	
North Carolina	
Ohio	
Oklahoma	
Oregon	
Pennsylvania	
Rhode Island	
South Carolina	
South Dakota	
Texas	
Utah	
Vermont	
Virginia	
Washington	
Wisconsin	
Wyoming	

Source: APHL September-October 2005 Survey.

**Illinois did not respond to the survey. In the 2004 "Ready or Not?" report, Illinois indicated it did not have sufficient lab scientists to test for a potential outbreak of anthrax or the plague.*

Puerto Rico reported that it had sufficient lab scientists.

In 2004, 29 states and D.C. reported they did not have adequate numbers of lab scientists to test for a potential anthrax or plague incident. The major change can be attributed in many cases to increased cross-training of the scientists rather than increases in the total number of staff in labs.

Public health laboratories face critical workforce shortages, along with the rest of the public health system. This indicator helps demonstrate the severity of the problem. A wider scale emergency requiring surge capacity in which labs would be inundated with large numbers of samples would compound and demonstrate the workforce shortage.

IMMINENT PUBLIC HEALTH WORKFORCE BRAIN DRAIN

In nearly half of the states, 25 percent or more of the state public health workforce will be eligible for retirement within the next five years, according to a 2003 survey conducted by the Association of State and Territorial Health Officials (ASTHO) and the Council of State Governments (CSG). Eight states face potential retiree levels of 40 percent or higher.[30] This will likely lead to severe staffing shortages. Baby boomers are retiring and the recruitment of the next generation of public health professionals is falling short of the need. The survey has not been updated, and, therefore, was not used as an indicator in this 2005 "Ready or Not?" report. However, there is no evidence that the retiree problem has improved.

In 2005, for the second year in a row, Senators Charles Hagel (R-NE) and Richard Durbin (D-IL) introduced "The Public Health Workforce Act" to help address the problem, but no action has been taken to date.

Indicator 4: ONLY 10 STATE LABS HAVE CAPABILITIES (FACILITIES, TECHNOLOGY, EQUIPMENT, AND/OR STAFFING) TO ADEQUATELY RESPOND TO A CHEMICAL TERRORISM THREAT.

10 states have adequate capabilities to test for chemical terrorism in human samples	**40 states and D.C. do NOT have adequate capabilities to test for chemical terrorism in human samples**
California	Alabama
Florida	Alaska
Massachusetts	Arizona
Michigan	Arkansas
Minnesota	Colorado
New Mexico	Connecticut
New York	Delaware
South Carolina	D.C.
Virginia	Georgia
Wisconsin	Hawaii
	Idaho
	Illinois
	Indiana
	Iowa
	Kansas
	Kentucky
	Louisiana
	Maine
	Maryland
	Mississippi
	Missouri
	Montana
	Nebraska
	Nevada
	New Hampshire
	New Jersey
	North Carolina
	North Dakota
	Ohio
	Oklahoma
	Oregon
	Pennsylvania
	Rhode Island
	South Dakota
	Tennessee
	Texas
	Utah
	Vermont
	Washington
	West Virginia
	Wyoming

Sources: CDC.

The 10 states that currently have chemical terrorism testing capabilities represent an increase from five in 2004. Other states have expressed an interest in developing these capabilities, but have not received resources to purchase equipment, train scientists, or take the other measures needed to build this capacity. This capacity is separate from a state's capabilities for environmental testing of chemical agents.

The CDC has identified over 60 toxic substances that could be used as chemical weapons by terrorists.[31] Many of these substances are used regularly for commercial and industrial purposes in the United States. Public health labs are responsible for proper identification of the agent used in an attack, which then drives treatment, containment and clean-up decisions.

In the first wave of bioterrorism preparedness funds in FY2002, states were restricted from using these dollars for chemical terrorism preparedness activities. In its guidance for FY2003, the CDC reversed policies and allowed states to use the funds for chemical as well as biological laboratory preparedness. However, no new funds were specifically allocated to support these additional responsibilities.

There are now 62 state, territorial, and metropolitan public health labs that participate in a "chemical laboratory response network." These labs are able to collect, package, and ship chemical terrorism clinical specimens to the CDC for analysis. In the midst of a crisis, this could cause significant delays and overwhelm the limited CDC lab. Thirty-six of the 62 labs are considered "Level 2" labs, where personnel are trained to test for human exposure to a limited number of toxic chemicals. Ten of the 62 labs are "Level 1," where personnel are trained to detect an expanded number of chemicals in humans, including mustard agents, nerve agents, and other toxic chemicals.[32] In an emergency, it is likely that in addition to the network of public health labs, other resources, such as HAZMAT, FBI, police, military, and private labs would be used for surge capacity or special needs.

Funding states for "biomonitoring" capacity, the ability to test human blood, urine, or other biological samples for dangerous chemicals, also strengthens the nation's ability to detect and respond to terrorism. State public health laboratory biomonitoring programs have strong linkages to a state's response to chemical terrorism and other chemical exposure incidents. To monitor individuals that may have been exposed to chemicals, the same laboratory instrumentation, supplies, and trained staff may be used.

Indicator 5: NEARLY HALF OF STATES DO NOT USE A WEB-BASED SYSTEM TO COLLECT DISEASE OUTBREAK INFORMATION THAT MEETS NATIONAL STANDARDS, CAUSING SERIOUS DELAYS IN REPORTING AND RENDERING RAPID OR EARLY WARNING OF DISEASE THREATS DIFFICULT.

27 states use a disease tracking system (NEDSS) where information can be collected and monitored electronically via a Web-based system	**23 states and D.C. do NOT use a disease tracking system (NEDSS) where information can be collected and monitored electronically via a Web-based system**
Alabama	Alaska
Arizona	Arkansas
Colorado	California
Delaware	Connecticut
Florida	D.C.
Georgia	Hawaii
Idaho	Indiana
Illinois	Iowa
Kansas	Maine
Kentucky	Maryland
Louisiana	Massachusetts
Michigan	Minnesota
Nebraska	Mississippi
Nevada	Missouri
New Jersey	Montana
New York	New Hampshire
North Dakota	New Mexico
Ohio	North Carolina
Oklahoma	Rhode Island
Oregon	South Dakota
Pennsylvania	Utah
South Carolina	Washington
Tennessee	Wisconsin
Texas	Wyoming
Vermont	
Virginia	
West Virginia	

Source: CDC.

The 27 states that currently use NEDSS to track infectious diseases[33] represent an increase from only 18 in 2004. Some public health experts argue that other tracking systems would be preferable to NEDSS; however, most agree about the strong need for national standards and interoperability in information collection and sharing to detect outbreaks.

Delivering effective public health services depends on timely and reliable information. Health departments cannot protect people from existing or emerging health threats, such as a new disease outbreak or bioterrorism attack, without the right information. The lack of timely and comprehensive data can cause delays in identifying and responding to serious and mass-impacting health problems. Additionally, federal, state, and local health departments and private healthcare providers must all work in cooperation if the country is to effectively track information about and respond to health threats.

The CDC has created a National Electronic Disease Surveillance System (NEDSS) to try to integrate and standardize the tracking of infectious diseases. NEDSS is intended to allow

medical professionals and public health investigators to enter data directly on the Web, creating a database accessible by health investigators and public health professionals throughout the system. This approach is meant to speed up reporting and to modernize the traditional data entry and paper-based systems. Another component of NEDSS is Electronic Laboratory Results (ELR) Reporting, which allows labs to report information about communicable diseases to health departments.

Some states point out that the CDC preparedness guidance does not require NEDSS compatibility. However, this is currently one of the few data points about state preparedness activities that is collected and made publicly available by the CDC. A number of states that are not currently compatible with NEDSS have requested the resources they would need to accomplish this, but have not received them. The current trend toward increased use of electronic medical records (EMR) raises new issues for health tracking, including questions about how to modernize systems to take advantage of the most recent technologies.

NEED TO MODERNIZE ANTIQUATED DISEASE TRACKING TECHNIQUES

Before 2000, "state health departments received most case-report forms by mail and then entered the data into computer systems, sometimes weeks after the cases of notifiable disease had occurred, including cases that warranted immediate public health investigation or intervention. In addition, depending on the disease, only 10 percent to 85 percent of cases were reported, and more than 100 different systems were used to transmit these reports from the states to CDC."[34]

WHAT'S THE DIFFERENCE BETWEEN BIOSENSE AND NEDSS?

BioSense "establishes the capacity for rapid, real-time electronic data transmissions to public health agencies from health data sources such as hospitals, laboratories, doctor's offices, and pharmacies to identify early signs of a possible event." BioSense will "support early event detection by complementing astute clinicians in identifying initial events and also supporting public health's needs to immediately understand the scope of an event and where it is occurring."

"Electronically enabling case reporting is also critical to national preparedness and emergency response. CDC is continuing to implement the **National Electronic Disease Surveillance Systems (NEDSS)** -- as a component of PHIN in this area. NEDSS promotes a standards-based implementation of electronic case reporting to the state and local levels as well as to the federal level. The initiative includes the use of electronic laboratory result reporting for notifiable disease conditions to improve on the number of cases and how fast cases are reported." [35]

BioSense is a component of Public Health Information Network (PHIN), which "seeks to use industry data and technical standards to develop specifications and software elements, allowing for a national electronic network to support public health needs. In addition to inclusion of functional and technical specifications for early event detection, PHIN also provides routine public health surveillance (e.g., the National Electronic Disease Surveillance System [NEDSS]), secure communications, analysis and visualization, information dissemination and knowledge management, health alerting, outbreak management, laboratory information systems, and vaccine and prophylaxis administration."[36]

TFAH has called for an improved, integrated system of tracking health data in the U.S.

GAO: CHALLENGES REMAIN FOR PUBLIC HEALTH INFORMATION TECHNOLOGY

In a June 2005 report,[37] the GAO outlined unresolved public health information technology (IT) issues for the Department of Homeland Security and CDC, including:

1. **Integrating current systems into a nationwide infrastructure** without duplication of efforts.
2. **Developing and implementing standards** across and within the system(s).
3. **Coordinating with state and local authorities.**
4. Overcoming known **federal IT problems to continue to make progress.**

Despite these issues, the GAO highlights **CDC's Public Health Information Network (PHIN)** as an area where some tangible preparedness progress has been made. The initial communications systems and standards are active, although work remains on its "associated surveillance systems."[38] NEDSS is one component of the PHIN.

The GAO recommends the following to improve public health IT initiatives:

1. Establish **clear linkage** between the initiatives and the national healthcare strategy and federal health architecture.
2. Encourage **better interoperability** through stricter standards across all data and communications systems.

EMERGENCY COMMUNICATIONS

The CDC funds the Health Alert Network (HAN), which coordinates electronic communications among health departments and the CDC through the Internet. The information transmitted over the network is intended to allow state, local, and federal health departments to rapidly share details about current, pending, or possible threats.

According to TFAH's December 2003 "Ready or Not?" report, local health agencies in counties that include approximately 89 percent of the U.S. population were linked with the HAN. There is currently no publicly available state-specific data about the progress of the next stage in the HAN development, which is needed to ensure rapid communications with key health partners, such as labs, hospitals, and pharmacies.

According to CDC in May 2005, states still had room for improvement in emergency outreach; only 16% of states could contact all of their response partners within 20 minutes, while 56% of states could contact most partners, and 28% could contact some partners in that same time period.[39]

Indicator 6: HOSPITALS IN NEARLY ONE-THIRD OF STATES LACK SUFFICIENT CAPABILITIES TO CARE FOR A SURGE OF EXCESS PATIENTS AT NON-HEALTHCARE "OVERFLOW" FACILITIES, SUCH AS COMMUNITY CENTERS, SPORTS ARENAS, OR HOTELS.

Survey participants were asked: "In the event of a major health emergency, has your hospital established plans or been involved in state/local planning efforts to care for patients at a non-healthcare facility, such as a community center, sports arena, or hotel?"

States with 25 percent or fewer "no" responses received a point for the indicator. Twenty-five percent was selected as the threshold rather than zero to acknowledge that there are differing expectations and sizes among hospitals.

A sufficient number of hospitals in 35 states have established plans to care for a surge of extra patients by using non-health facilities, such as community centers, sports arenas, or hotels.	**An insufficient number of hospitals in 15 states and D.C. have established plans to care for a surge of extra patients by using non-health facilities, such as community centers, sports arenas, or hotels.**
Arizona	Alabama
Colorado	Alaska
Delaware	Arkansas
Georgia	California
Hawaii	Connecticut
Idaho	D.C.
Illinois	Florida
Indiana	Maryland
Iowa	Massachusetts
Kansas	Missouri
Kentucky	New Hampshire
Louisiana	New Mexico
Maine	New York
Michigan	Ohio
Minnesota	Pennsylvania
Mississippi	Texas
Montana	
Nebraska	
Nevada	
New Jersey	
North Carolina	
North Dakota	
Oklahoma	
Oregon	
Rhode Island	
South Carolina	
South Dakota	
Tennessee	
Utah	
Vermont	
Virginia	
Washington	
West Virginia	
Wisconsin	
Wyoming	

Source: APIC/TFAH Survey, June 2005.

During mass-emergency and infectious disease situations, many hospitals and healthcare delivery providers face surge conditions, the demand for hospital beds and equipment far surpassing the available supply. During these times, it is essential that locales rely on existing community resources as temporary, makeshift health centers. Due to logistical hurdles, it is critical that states and communities address related planning procedures and statutory concerns before the event occurs. Even small or regional hospitals that would rely on an outside jurisdiction to take on excess patients need to be included in pre-event contingency planning efforts. According to the APIC/TFAH survey, 15 states and D.C. have not sufficiently prepared for a surge of excess patients by planning to use non-health facilities as overflow/temporary patient sites.

During the post-Hurricane Katrina response, officials in Baton Rouge, LA, established temporary hospitals and health sites at places such as Louisiana State University's Pete Maravich Center basketball stadium and an abandoned Kmart store.[40] The Maravich Center alone treated over 6,000 patient evacuees in the 10 days following the hurricane. These plans "stemmed from a stark reality. Other hospitals around the state, as is true in much of the nation, are too lean, too small, or too cash-strapped to instantly accommodate thousands of new patients."[41]

NORTH CAROLINA'S MOBILE SURGE CAPACITY SUCCESS

Mississippi's Hancock County received a direct hit from Hurricane Katrina. The resultant devastation left the area hospital flooded and inoperable -- and local residents without sufficient healthcare delivery services.

Under the Emergency Management Assistance Compact (EMAC), North Carolina responded to Mississippi's request for assistance by deploying State Medical Assistance Teams (SMATs) to establish a field hospital in the afflicted area. A 23-vehicle convoy traveled from North Carolina to Mississippi, packed with building supplies for the temporary hospital and medical supplies for the needy residents.[42]

"Using beds, medical equipment and training paid for by HRSA Hospital Preparedness grants," North Carolina healthcare and trauma professionals set up "a mobile hospital in the parking lot of a K-Mart in Waveland, MS...As of Oct. 6, the 450 medical personnel who staffed the unit on a rotating basis had treated 7,000 local residents."[43] North Carolina also relied upon federal funds from CDC and DHS to establish, staff, and operate the mobile hospital.

SURGE CAPACITY

Among the major issues confronting the healthcare sector during an emergency situation is the question of surge capacity, the ability to rapidly mobilize to meet an increased demand.[44] FY2005 HRSA critical benchmarks areas related to surge capacity include:

- Beds (including beds for trauma and burn care patients).
- Isolation capacity.
- Health care personnel/Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP).
- Pharmaceutical caches.
- Personal protective equipment (PPE) such as masks, respirators, gloves and gowns.
- Decontamination.
- Behavioral (psychosocial) health considerations.
- Communications and information technology. [45]

THE HRSA GUIDANCE REQUIRES GRANTEES TO...

...establish systems that, at a minimum, can provide triage treatment and initial stabilization, above the current daily staffed bed capacity, for the following classes of adult and pediatric patients requiring hospitalization within three hours of a terrorist incident or other public health emergency:

- 500 cases per million population for patients with symptoms of acute infectious disease, especially smallpox, anthrax, plague, tularemia and influenza.
- 50 cases per million population for patients with symptoms of acute botulinum intoxication or other acute chemical poisoning, especially those resulting from nerve agent exposure.
- 50 cases per million population for patients suffering burn or trauma.
- 50 cases per million population for patients manifesting the symptoms of radiation-induced injury, especially bone marrow suppression.

"In January 2004, HRSA reported progress toward achieving Critical Benchmarks in the hospital preparedness program. Despite this, the program has been charged over the years with lacking sufficient focus to adequately direct funds in meaningful directions, or with failing to assure that emergency healthcare services will be available consistently across jurisdictions. The healthcare sector, in response to growing costs and constrained resources, is marching to an ever-louder drumbeat of efficiency, and eliminating unused capacity. Ensuring that unused assets (e.g., beds, workers, equipment) will be held in reserve for a crisis will remain a challenge."[46]
--Congressional Research Service, "An Overview of the U.S. Public Health System in the Context of Emergency Preparedness," March 17, 2005.

POTENTIAL STRATEGIES FOR INCREASING HOSPITAL SURGE CAPACITY

- Discharge patients early; establish discharge holding area.
- Convert outpatient procedure beds into inpatient beds.
- Use hallways or create alternate treatment areas (e.g., the cafeteria).
- Partner with local health department and emergency management agency to create emergency treatment capacity outside the hospital.
- Initiate mutual agreements with other healthcare facilities.
- Include acute, long-term care, and rehabilitation facilities.
- Implement communications systems to allow rapid dissemination of information to key players and planners in a mass-casualty event.[47]

—From a presentation by a HRSA official, to the HHS Council on Public Health Preparedness, 2004.

SURGE WORKFORCE FOR EMERGENCIES?

A state-based program at HRSA is designed to secure a volunteer healthcare delivery workforce in the event of an emergency.[48] The Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP), created after the terrorist attacks of 2001, helps state and local authorities to verify "the status of volunteer health-care workers by developing standards for state-based databases and providing funding and technical assistance to states in linking to the database."[49] The ESAR-VHP operates independently from the Medical Reserve Corps (MRC), a component of the USA Freedom Corps. However, both programs are aimed at bolstering state and local capacity to meet a health emergency and are designed to collaborate. The MRC can draw upon the ESAR-VHP's emergency credentialing program, and adding "the MRC members to the new ESAR-VHP System will assist in populating the database with credentialed and qualified volunteers."[50]

Indicator 7: HOSPITALS IN ONLY TWO STATES HAVE SUFFICIENT PLANS, INCENTIVES, OR PROVISIONS TO ENCOURAGE HEALTHCARE WORKERS TO CONTINUE COMING TO WORK IN THE EVENT OF A MAJOR INFECTIOUS DISEASE OUTBREAK.

Survey participants were asked: "Does your hospital have a plan, incentives, or provisions to encourage healthcare workers to continue coming to work in the event of a major infectious disease outbreak?" States with 25 percent or fewer "no" responses received a point for the indicator. Twenty-five percent was selected as the threshold rather than zero to acknowledge that there are differing expectations and sizes among hospitals.

A sufficient number of hospitals in two states have plans, incentives, or provisions to encourage healthcare workers to continue coming to work in the event of a major infectious disease outbreak	**An insufficient number of hospitals in 48 states and D.C. have plans, incentives, or provisions to encourage healthcare workers to continue coming to work in the event of a major infectious disease outbreak**
Rhode Island South Dakota	Alabama Alaska Arizona Arkansas California Colorado Connecticut Delaware D.C. Florida Georgia Hawaii Idaho Illinois Indiana Iowa Kansas Kentucky Louisiana Maine Maryland Massachusetts Michigan Minnesota Mississippi Missouri Montana Nebraska Nevada New Hampshire New Jersey New Mexico New York North Carolina North Dakota Ohio Oklahoma Oregon Pennsylvania South Carolina Tennessee Texas Utah Vermont Virginia Washington West Virginia Wisconsin Wyoming

Source: APIC/TFAH Survey, June 2005.

Workforce continuity is a critical component of an effective response to a mass-emergency event. Recent lessons learned from the aftermath of Hurricane Katrina demonstrated the necessity of planning for real-world contingencies that can complicate the planned response effort. During the Katrina response, "there were reports of overwhelmed field hospitals and triage centers, and urgent calls from hospitals for more medical personnel."[51] While continued development and credentialing efforts associated with the national volunteer health professionals (VHPs) program may provide future supplemental assistance, states must also include measures to address existing workers' real-world concerns. But 48 states and D.C. report they do not have sufficient plans, incentives, or provisions to encourage healthcare workforce continuity during an infectious disease outbreak. Incentives, such as healthcare workforce priority for vaccines and medicines and extra compensation for workers, offer potential encouragement for workforce continuity during a mass-emergency event.

THE HRSA GUIDANCE REQUIRES GRANTEES TO...

...develop a system that allows for the advance registration and credentialing of clinicians needed to augment a hospital or other medical facility to meet patient/victim care and increased surge capacity needs. However, the guidance does not currently require plans to provide incentives for current employees to come to work during a major crisis or outbreak, even though this has been raised as a serious potential vulnerability.

A 2004 study by Dr. Roz Lasker of the New York Academy of Medicine found that during a "dirty bomb" or smallpox attack, many people would not follow planners' protective instructions because "current plans have been developed without the direct involvement of the public...do not account for all the risks people would face...[and] make it very difficult for people to decide on the best course of action to protect themselves and their family."[52] In the days after Katrina, over 30 percent of the New Orleans Police Department did not report for duty due to a variety of reasons, a further indication that planning must not only account for absences, but also seek to address worker concerns. Liability issues, prioritization of the worker populations for vaccines and antiviral medications, and worker-specific risk communications materials are among the areas emergency plans ought to address.

States should also conduct and maintain an inventory of local healthcare professionals, including current and retired doctors, nurses, veterinarians, emergency medical staff, pharmacists, and other potential volunteers to help supplement their regular workforce during wide-scale emergencies. These workers could be an essential expanded workforce during a major infectious disease outbreak such as a pandemic flu or other mass-emergency scenario. Pandemic flu survivors would also comprise a population of potential workers, due to their presumed immunity to the virus.

Indicator 8: HOSPITALS IN NEARLY ONE-THIRD OF STATES LACK SUFFICIENT CAPABILITIES TO CONSISTENTLY AND RAPIDLY CONSULT WITH PUBLIC HEALTH PERSONNEL ABOUT POSSIBLE OR SUSPECTED DISEASE OUTBREAKS.

Survey participants were asked: "Can an infection control professional from your hospital be available for an immediate (within 15 minutes) verbal consultation (via phone or face-to-face) on a 24-hour/7-day basis with hospital or public health personnel?" States with 25 percent or fewer "no" responses received a point for the indicator. Twenty-five percent was selected as the threshold rather than zero to acknowledge that there are differing expectations and sizes among hospitals.

A sufficient number of hospitals in 35 states and D.C. have an infection control professional who is available for an immediate (within 15 minutes) verbal consultation (via phone or face-to-face) on a 24-hour/7-day basis with hospital or public health personnel in the event of a major health emergency	**An insufficient number of hospitals in 15 states have an infection control professional who is available for an immediate (within 15 minutes) verbal consultation (via phone or face-to-face) on a 24-hour/7-day basis with hospital or public health personnel in the event of a major health emergency**
Alabama	Alaska
Arizona	Colorado
Arkansas	Idaho
California	Iowa
Connecticut	Kansas
Delaware	Minnesota
D.C.	Mississippi
Florida	Montana
Georgia	New Hampshire
Hawaii	North Dakota
Illinois	Oregon
Indiana	South Dakota
Kentucky	Vermont
Louisiana	West Virginia
Maine	Wisconsin
Maryland	
Massachusetts	
Michigan	
Missouri	
Nebraska	
Nevada	
New Jersey	
New Mexico	
New York	
North Carolina	
Ohio	
Oklahoma	
Pennsylvania	
Rhode Island	
South Carolina	
Tennessee	
Texas	
Utah	
Virginia	
Washington	
Wyoming	

Source: APIC/TFAH Survey, June 2005.

Rapid diagnosis and response capabilities are an essential component of emergency preparedness. CDC guidance established in 2003 contained four recommendations for rapid response and diagnosis for local health agencies. These agencies should have:

- A "single, well-publicized telephone number to receive all urgent case reports because telephones are the simplest, quickest, and most direct method of communication."
- A "phone triage protocol to process urgent case reports."
- Capabilities to receive "urgent case reports twenty-four hours a day, seven days a week."
- A trained public health professional who responds to "urgent case reports within thirty minutes of receiving the report."[53]

RAND STUDY OF PUBLIC HEALTH RAPID RESPONSE AND DIAGNOSTIC CAPABILITIES

An August 2005 study by the RAND Corporation also examined public health's rapid response and diagnostic capacities. RAND researchers posing as doctors called 19 local public health agencies (LPHAs) in 18 states reporting symptoms of communicable diseases such as smallpox and the plague. The study examined the diagnoses and responses and found that "42 percent of LPHAs returned all calls within 30 minutes, 21 percent returned all calls within in 15 minutes, and 21 percent "received one or more calls that were not returned."[54] Additionally, the study highlighted a number of troubling diagnoses made by the "action officer" on call at the LPHA. "When presented with a case consistent with botulism, one action officer responded, "You're right, it does sound like botulism. I wouldn't worry too much if I were you." In response to classic symptoms of bubonic plague, the action officer told the caller not to worry and to "go back to bed" because no similar cases had been reported that day."[55]

THE HRSA GUIDANCE REQUIRES GRANTEES TO...

...enhance the capability of rural and urban hospitals, clinics, emergency medical services systems, and poison control centers to report syndromic and diagnostic data that are suggestive of terrorism or other highly infectious disease outbreak to their associated local and state health departments on a 24-hour-a-day, 7-day-a-week basis.

Indicator 9: NEARLY ONE-THIRD OF STATES LACK SUFFICIENT HOSPITAL CAPABILITIES TO PLAN FOR PRIORITIZING MEDICAL CARE NEEDS OF HOSPITAL WORKERS DURING AN INFECTIOUS EMERGENCY.

Survey participants were asked: "Has your hospital worked with state and local health departments to plan for prioritizing hospital workers to receive health agency-managed vaccine or antivirals in the event of an infectious emergency?" States with 25 percent or fewer "no" responses received a point for the indicator. Twenty-five percent was selected as the threshold rather than zero to acknowledge that there are differing expectations and sizes among hospitals.

A sufficient number of hospitals in 34 states and D.C. report that they have worked with the state or local health department to plan for prioritizing hospital workers to receive vaccine or antivirals in the event of an infectious emergency	**An insufficient number of hospitals in 16 states report that they have worked with the state or local health department to plan for prioritizing hospital workers to receive vaccine or antivirals in the event of an infectious emergency**
Arizona	Alabama
Arkansas	Alaska
Colorado	California
Connecticut	Florida
Delaware	Idaho
D.C.	Iowa
Georgia	Maine
Hawaii	Michigan
Illinois	Mississippi
Indiana	Missouri
Kansas	Montana
Kentucky	North Carolina
Louisiana	Pennsylvania
Maryland	Vermont
Massachusetts	Virginia
Minnesota	Wyoming
Nebraska	
Nevada	
New Hampshire	
New Jersey	
New Mexico	
New York	
North Dakota	
Ohio	
Oklahoma	
Oregon	
Rhode Island	
South Carolina	
South Dakota	
Tennessee	
Texas	
Utah	
Washington	
West Virginia	
Wisconsin	

Source: APIC/TFAH Survey, June 2005.

At the beginning of a major infectious disease outbreak, there may be an insufficient supply of vaccines and medications to cover the entire population. Priorities must be established for which segments of the population should receive the limited amounts of vaccines and medications based on potential risk. Public health experts suggest that priorities be established before an emergency occurs to ensure that groups like medical workers, those most needed to keep society functioning and those most likely to contract a disease receive medications or vaccines first. Yet hospitals in 16 states report that they have not worked with the state or local health department to plan for prioritizing hospital workers to receive vaccine or antivirals.

THE HRSA GUIDANCE REQUIRES GRANTEES TO...

...establish a regional system that ensures a sufficient supply of pharmaceuticals to provide prophylaxis for three days to hospital personnel (medical and ancillary staff) and hospital-based emergency first responders and their families in the wake of a terrorist-induced outbreak of anthrax or other disease for which such countermeasures are appropriate.

The potential of the H5N1 avian influenza virus to become a deadly flu pandemic illustrates the importance of setting priorities.

If a strain of influenza emerged against which humans had no natural immunity, the resultant pandemic could kill millions and disrupt economies across the globe. Yet outdated vaccine manufacturing processes and a reliance on too few suppliers could leave the world vulnerable to a pandemic strain for six to nine months, about the time it would take to engineer a vaccine specifically to the pandemic strain.

The recommended stopgap solution involves taking antiviral medication, such as Tamiflu, during the first stages of illness. However, as Sen. Bill Frist, M.D. remarked on the Senate floor, "the United States is the richest and most scientifically advanced country in the world. Yet we only have enough doses of the antiviral Tamiflu to treat 2.3 million people out of a population of 295 million."[56]

As a result of the potential vaccine and antiviral shortfall, a key element of pandemic planning is to determine protocols for allocation of vaccines and medicines among high priority populations, such as healthcare workers and public safety workers, prior to an outbreak. While liability concerns complicate potential planning efforts, every hospital and every level of government must address related logistical concerns before a pandemic event begins. [See Section 3: Smallpox Mass Vaccination Study for more details about vaccine and medical liability concerns.]

Additionally, the continued threat of a purposeful release of smallpox, anthrax, or other highly infectious agents further necessitates dialogue between healthcare delivery and public sector planners.

"HEALTHCARE WORKERS WOULD PROBABLY GET SICK AND DIE AT THE SAME RATE AS THE GENERAL PUBLIC -- PERHAPS AT AN EVEN HIGHER RATE, PARTICULARLY IF THEY LACK ACCESS TO PROTECTIVE EQUIPMENT. IF THEY LACK SUCH FUNDAMENTAL SUPPLIES, IT IS UNCLEAR HOW MANY PROFESSIONALS WOULD CONTINUE TO PLACE THEMSELVES IN HIGH-RISK SITUATIONS BY CARING FOR THE INFECTED...[AND] OTHER UNPLEASANT ISSUES WOULD ALSO NEED TO BE TACKLED. WHO WOULD HAVE PRIORITY ACCESS TO THE EXTREMELY LIMITED ANTIVIRAL SUPPLIES? THE PUBLIC WOULD CONSIDER ANY AD HOC PRIORITIZATION UNFAIR, CREATING FURTHER DISSENT AND DISRUPTION DURING A PANDEMIC."[57]

-- Michael Osterholm, "Preparing for the Next Pandemic," *Foreign Affairs*.

Indicator 10: HOSPITALS IN OVER 40 PERCENT OF STATES LACK SUFFICIENT BACKUP SUPPLIES OF MEDICAL EQUIPMENT FOR SURGE CAPACITY NEEDS DURING A PANDEMIC FLU OR OTHER MAJOR INFECTIOUS DISEASE OUTBREAK.

Survey participants were asked: "Does your hospital currently have sufficient medical equipment and supplies for surge capacity needs for 10 additional ventilated patients requiring mechanical ventilation?" States with 50 percent or fewer "no" responses received a point for this indicator. Fifty percent was selected as the threshold for this indicator rather than 25 or zero to acknowledge that there are differing expectations and sizes among hospitals, particularly in the areas of emergency surge equipment and associated costs.

A sufficient number of hospitals in 29 states and D.C. have enough medical equipment and supplies for surge capacity needs for 10 additional patients requiring mechanical ventilation	**An insufficient number of hospitals in 21 states have enough medical equipment and supplies for surge capacity needs for 10 additional patients requiring mechanical ventilation**
California	Alabama
Colorado	Alaska
Connecticut	Arizona
Delaware	Arkansas
D.C.	Idaho
Florida	Indiana
Georgia	Iowa
Hawaii	Kansas
Illinois	Kentucky
Maryland	Louisiana
Massachusetts	Maine
Michigan	Minnesota
Mississippi	Montana
Missouri	New Hampshire
Nebraska	New Mexico
Nevada	Oklahoma
New Jersey	South Dakota
New York	Vermont
North Carolina	West Virginia
North Dakota	Wisconsin
Ohio	Wyoming
Oregon	
Pennsylvania	
Rhode Island	
South Carolina	
Tennessee	
Texas	
Utah	
Virginia	
Washington	

Source: APIC/TFAH Survey, June 2005.

Backup supplies of medical equipment to meet surge capacity needs are a crucial safeguard for hospitals facing a mass-emergency situation. Decisions and priorities surrounding the allocation of scare resources during an emergency event must be made ahead of time.

While surge hospitals and makeshift community hospitals ("alternative care facilities") will play an important and commendable role in an effective response, smaller hospitals also need to be prepared to respond to infectious surge capacity situations, even if just on a temporary basis before transportation to a larger facility with greater resources can be arranged. Such planning efforts are essential in the event of a pandemic influenza event.

In the United States, "there are 105,000 mechanical ventilators, 75,000 to 80,000 of which are in use at any given time for everyday medical care. During a routine influenza season, the number of ventilators being used shoots up to 100,000. In an influenza pandemic, the United States may need as many as several hundred thousand additional ventilators."[58]

THE HRSA GUIDANCE REQUIRES GRANTEES TO...

...ensure adequate personal protective equipment (PPE) per awardee region to protect current and additional health care personnel during an incident. This benchmark is tied directly to the number of healthcare personnel the awardee must provide to support surge capacity for beds.

CDC MODEL SHOWS A PANDEMIC FLU'S STRESS ON ATLANTA-AREA HOSPITALS

A CDC program called FluSurge generates possible outcomes of a pandemic flu event on a regional hospital system. To illustrate the model, and to demonstrate the importance of surge capacity in a healthcare setting, CDC used metro Atlanta "as an example to illustrate the impact of an 8-week influenza pandemic with a 25% gross clinical attack rate. In this example, the demand on hospital resources peaked in week 5, with a maximum of 287 hospital admissions per day. FluSurge estimated that during this week, 1,938 persons would be hospitalized, 407 would require use of the ICU, and 203 would need mechanical ventilation (these numbers, respectively, translate to 27 [percent] of all hospital beds, 54 [percent] of total ICU capacity, and 29 [percent] of all ventilators in metro Atlanta). Such an influenza pandemic would...illustrate how the next influenza pandemic may overwhelm existing hospital resources, given that hospitals increasingly operate at nearly full capacity. Public health officials and hospital administrators must plan for surges in demand for hospital services during the next pandemic."[59]

—CDC's FluSurge 1.0 Manual, 2004.

OTHER STATE ISSUES AND CONCERNS

FUNDING OF PUBLIC HEALTH AND PREPAREDNESS

Financial support for public health programs comes from a combination of federal, state, and local funds. The majority of public health funding comes from state and local governments. In 2000, state and local spending was 2.5 times the federal level, accounting for 70 percent of public health service spending.[60] The federal bioterrorism funding provided by Congress in 2002 and 2003 represents a 25 percent increase in the federal contribution to public health spending, which is expected to marginally raise the total federal share of funding from 29 to 34 percent.[61]

In the past two years, the "Ready or Not" report contained an indicator on state public health budgets. The budget indicator was used to try to help demonstrate states' allocations of funds for public health overall and to determine if there was an influence or change in the budget that could be related to the new federal funds for preparedness provided post-September 11. States do not typically provide funds for bioterrorism preparedness. A number of states do fund other national security areas, such as increased funds for border patrol.

This year, TFAH performed an analysis of state budgets related to public health and provides that information in Appendix C. Each state allocates and reports its budget in a unique way, so comparisons across states are difficult. The budget analysis, conducted by TFAH staff, looked at state budgets and appropriations bills for the agency, department, or division in charge of public health services for state fiscal years 2004 and 2005. TFAH chose to define "public health services" broadly, including most state-level health funding, with a few notable exceptions. Based on this definition, twelve states cut their public health budgets from FY 2003-2004 and FY 2004-FY 2005, including, Alaska, Delaware, Georgia, Kentucky, Massachusetts, Michigan, Mississippi, Missouri, Nevada, Oregon, Texas, and Wisconsin. State per capita spending ranges from $4 (Nevada) to $123 (Hawaii), with most states in the 2-digit dollar range (42 states). Both New York and Louisiana have even higher per capita spending ($386 and $369, respectively), but services such as Medicaid are included in those figures. As noted, it is difficult, however, to make comparisons across states, since the programs included in "public health" varies in states and the local level of government funds public health at different levels in each state. [More detail on public health budgets in states is available in Appendix C.]

Also in the past two reports, TFAH included an indicator of whether or not states had spent or made use of the federal bioterrorism funds they had received. The indicator had been based on a survey conducted by ASTHO. Last year, the survey showed that less than 10 percent of the FY2003 federal funds were unspent. Overall, states seem to be making use of the federal funds received and concerns about delays were largely addressed; therefore, TFAH did not use this as an indicator this year. Some issues still remain with contracting processes, and there are concerns that the federal funds will be reduced and not be available to support new staff hires, equipment purchases, or activities.[62]

PUBLIC HEALTH FUNDING DOES NOT ADD UP

Despite level or increased funding in most states during the most recent budget cycle, the funding falls far short of the estimated levels needed to reach an acceptable level of preparedness, according to most public health experts. For instance, the Public Health Foundation estimates an additional $10 billion is needed to reach the minimum preparedness requirements.[63]

INCONSISTENT AND CONFUSING STATE PUBLIC HEALTH BUDGETS AND SERVICES

The Institute of Medicine has urged HHS to collect information about public health budgets and programs at the state, local, and federal levels to better assess the ability of the nation to provide critical public health services to every community.[64]

TFAH recommends that all levels of government should provide more information to the public about the funding of health programs and services with increased consistency, clarity, and transparency.

HHS INSPECTOR GENERAL REVIEW OF GRANTS

The HHS FY 2006 "Budget in Brief" document included an Office of the Inspector General (OIG) follow-up report summary of the FY2003 "Top Management Challenges," which included a review of CDC bioterrorism preparedness grants to states.[65] The OIG assessed the abilities of 12 state and 36 local health departments to detect and respond to bioterrorist events and to deploy the Strategic National Stockpile. The report's conclusions found that:

- "States and localities were underprepared, and that planning documents tended to overstate preparedness."
- Reviews of lab facilities operated by CDC, NIH, and the FDA "reveal substantial problems regarding perimeter, entry, and interior security, and security planning measures at these labs."
- "General readiness of state and local governments to detect and respond to bioterrorist attacks is below acceptable levels."[66]

In an effort to follow up on progress and problems with states' use of federal grants, the OIG released five state-specific reports in 2005 that examined bioterrorism preparedness grants. The OIG evaluated state grantees' adherence to several conditions of the grants, including:

- Internal control and accounting procedures in each state, helping to ensure that levels of federal money were being obligated and spent properly.
- States' use of program funding in relation to needed and allowable activities as determined by the grant cooperative agreement.
- Impact of federal funding on state funding, specifically whether federal assistance had replaced or bolstered the states' own assistance.

The results of the five state evaluations include:

Arkansas: The OIG found that federal bioterrorism funds supplanted, instead of supplemented, some existing state investments. Arkansas transferred 16 positions from state agency-funded programs to the federal bioterrorism program without replacing the positions with additional labor dedicated to improving preparedness. Additionally, for federal grants from the budget period August 2001 though August 2003, Arkansas left approximately 16 percent unspent or unobligated. Overall, the OIG recommended that the state more closely monitor program costs and specific time allocated in order to improve accountability and overall preparedness efforts.[67]

District of Columbia: The OIG found that the main areas for improvement related to financial management and tracking. D.C. did not sufficiently track funding by specific focus area and improperly charged over $238,000 in program-related expenditures. Additionally, for federal grants from the budget period October 2001 through October 2003, D.C. left approximately 48 percent unspent or unobligated.[68]

Massachusetts: The OIG found that Massachusetts had sufficiently monitored, tracked, and reported federal funds while adhering to the specific usage requirements of the cooperative agreement. Additionally, Massachusetts did not use the federal funding to supplant state or local bioterrorism assistance. However, 24 percent of the state's federal preparedness program funding was unspent or unobligated as of August 2004.[69]

North Carolina: The OIG found the state had sufficiently awarded and obligated related federal money for bioterrorism preparedness, while ensuring that the federal investment did not supplant existing state and local efforts. The OIG also found that North Carolina should strengthen its monitoring of sub-recipients of federal grants in the state to ensure that they would also abide by proper requirements as outlined in the guidance.[70]

Ohio: The OIG found Ohio to be in general accordance with all the areas investigated. Ohio spent its federal investment properly and had no outstanding funds left over to be spent or obligated. While the state maintained adequate management practices over funding, the OIG recommended strengthening oversight of sub-recipients of funds.[71]

PUBLIC HEALTH LEGAL AUTHORITY

"Historically, the preservation of the public health has been the responsibility of state and local governments, and the authority to enact laws relevant to the protection of the public health derives from the states' general police powers."[72]

On the federal level, "under the Public Health Service Act, the Secretary of Health and Human Services has the authority to make and enforce regulations necessary 'to prevent the introduction, transmission, or spread of communicable diseases from foreign countries into the States or possessions, or from one State or possession into any other State or possession.'"[73]

Quarantine and Isolation:

President Bush sparked interest in the use of the quarantine during remarks about preparing for a potential pandemic flu outbreak on October 4, 2005. Bush said, "the policy questions for a president in dealing with an avian flu outbreak are difficult. One example: If we had an outbreak somewhere in the United States, do we not then quarantine that part of the country?"[74]

Isolation and quarantine are two common public health strategies designed to protect the public by preventing exposure to infected or potentially infected individuals.

- Isolation refers to the separation of people who are known to be infected with a contagious condition from persons who are not infected, or the restriction of their movement to stop the spread of illness. Isolation is a standard practice used in hospitals for patients with tuberculosis and certain infectious diseases.
- Quarantine usually refers to the separation and restriction of movement of people who are not yet ill but who have been exposed to an infectious agent and are, therefore, potentially infectious. The quarantine of exposed individuals, like isolation, is intended to stop the spread of infectious disease.

TFAH's 2004 "Ready or Not?" report found that 49 states and D.C. have adequate statutory authority to quarantine in response to a hypothetical bioterrorism attack.

Mass quarantine was common in the United States in the 19th and 20th centuries when outbreaks of smallpox, scarlet fever, cholera, and tuberculosis occurred with some frequency. The practice of quarantining raises significant issues related to balancing civil liberties with the communal good. The U.S. Supreme Court upheld government's ability to quarantine individuals in 1909, saying quarantine "does not thwart constitutional rights, since individuals have no right to harm others."[75]

Last known mass-quarantine in the United States: According to the Journal of the American Medical Association, there have been no large-scale quarantines in the United States since the "Spanish flu" pandemic outbreak in 1918.[76] As a result, "professional medical and public health familiarity with the practice of quarantines has faded."[77]

Mandatory vaccination laws: "Many states also have laws providing for mandatory vaccinations during a public health emergency or outbreak of a communicable disease. Generally, the power to order such actions rests with the governor of the state, the state board of health, or the state health officer."[78] The laws themselves and the ways they are implemented vary by state.

PANDEMIC FLU PLANNING: DELAYS AND LACK OF DISCLOSURE IN MANY STATES

Pandemic planning and bioterrorism preparedness planning have substantial areas of overlap, and most public health professionals stress that proper preparation for one of these threats helps prepare for the other. The onset of either type of crisis would require rapid and collaborative mobilization to diagnose, respond to, and contain the emergency.

The federal pandemic preparedness plan was issued in November 2005, more than a decade after the initial drafting process began. Many states have expressed concern about the delay of the national plan since it includes models and nationwide policies for responding that will affect state planning. ASTHO released guidance to states in November 2002 to help them build their response plans. States have also all had access to the World Health Organization (WHO) guidance plan checklist for use in planning.

In 2003, 13 states had a final or draft pandemic plan publicly available. In 2004, 30 states reported having a publicly available pandemic flu plan in place: Arizona, California, Connecticut, Delaware, Florida, Georgia, Idaho, Indiana, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Virginia, Washington, and Wisconsin. [Pennsylvania provided its pandemic plan to TFAH for the purposes of the study, but it has not made its plan available to the public.]

Currently, there are no federal performance measures for evaluating the quality of the state plans.

SECTION 2

Federal Bioterrorism and Public Health Preparedness Programs

Four years after September 11, 2001, there is still little consensus about priorities and objectives for bioterrorism preparedness programs. Additionally, no formal, consistent, national performance measures for the use and tracking of federal bioterrorism funds are in place. There is also a lack of accountability on which to measure federal bioterrorism preparedness efforts. In order to help assess these activities and programs, TFAH conducted a survey of 20 experts in public health and bioterrorism preparedness policies and programs.

EXPERTS WHO EVALUATED FEDERAL PREPAREDNESS

Scott Becker, *Executive Director,* Association of Public Health Laboratories

Georges Benjamin, MD, *Executive Director,* American Public Health Association

Ron Bialek, *Executive Director,* Public Health Foundation

Leah Devlin, DDS, MPH, *State Health Director,* North Carolina Department of Public Health; *President of the Board,* Association of State and Territorial Health Officials (ASTHO)

Terry L. Dwelle, MD, *State Health Officer,* North Dakota Department of Health; *Chair,* ASTHO Public Health Preparedness Policy Committee.

Jonathan Fielding, MD, PhD, *Director,* Los Angeles County Department of Health Services

George E. Hardy, Jr., MD, MPH, *Executive Director,* Association of State and Territorial Health Officers

Jerome M. Hauer, *Senior Vice President, Homeland Security,* Fleishman-Hillard; *former Assistant Secretary for Public Health Emergency Preparedness,* U.S. Department of Health and Human Services

Anthony Iton, MD, JD, MPH, *Health Officer,* Alameda County, California, Public Health Department

James J. James, MD, DrPH, *Director,* American Medical Association's Center for Public Health Preparedness and Disaster Response

Robert Kadlec, MD, *Staff Director,* Senate Subcommittee on Bioterrorism and Public Health Preparedness

Nicole Lurie, MD, MSPH, *Associate Director of Public Health,* RAND Corporation

Niki O'Keeffe, RN, *Deputy Assistant Director for Public Health Preparedness Services,* Arizona Department of Health Services

Michael T. Osterholm, PhD, MPH, *Director,* University of Minnesota, Center for Infectious Disease Research and Policy

Tara O'Toole, MD, MPH, *CEO and Director,* Center for BioSecurity of the University of Pittsburgh Medical Center

Alonzo Plough, PhD, *Vice President of Program, Planning and Evaluation,* The California Endowment; *former Public Health Director,* Seattle-King County, Washington

Irwin E. Redlener, MD, *Associate Dean for Public Health Advocacy and Disaster Preparedness,* Columbia University, Mailman School of Public Health

Roslyne Schulman, *Senior Associate Director, Policy Development,* American Hospital Association

Mary C. Selecky, *Secretary of Health,* Washington State Department of Health

Kathleen E. Toomey, MD, MPH, *Clinical Associate Professor,* Emory University; *former Director,* Division of Public Health, Georgia Department of Human Resources

While the experts clearly acknowledged that significant progress has been made in federal efforts since September 11, 2001, **overall, the experts give the federal public health and bioterrorism preparedness performance a grade of D+.**

Federal Public Health and Bioterrorism Preparedness Survey Grades	
1. Management of Federal Funds and Programs (HHS Overall)	C-
2. Coordination Among Agencies	D
3. Measurable Goals and Directions	D
4. Leadership	D+
5. Strategic National Stockpile	C+
6. Cities Readiness Initiative	C-
7. BioWatch	D
8. Pandemic Flu Planning	C-
9. BioSurveillance	C-
10. Influenza Vaccine Shortage of 2004	C
11. Smallpox Vaccination Initiative	D-
12. Hurricane Katrina Public Health	D
FINAL GRADE	D+

The survey was conducted in September-October 2005. The grades reflect an average of the respondents' answers, with A's counted as 4 points, B's counted as 3 points, C's counted as 2 points, D's counted as 1 point, and F's counted as zero. The final scores in each category and for the cumulative score incorporated "pluses" and "minuses" to help show gradations in the scores. The final grade was based on an average of the other category grades. The scores and comments were collected and are reported as an aggregate to maintain individual anonymity and help encourage candor in the responses.

Grading Scale				
3.85 - 4.0 = A	3.16 - 3.49 = B+	2.16 - 2.49 = C+	1.16 - 1.49 = D+	0 - 0.49 = F
3.5 - 3.84 = A-	2.85 - 3.15 = B	1.85 - 2.15 = C	0.85 - 1.15 = D	
	2.5 - 2.84 = B-	1.5 - 1.84 = C-	0.5 - 0.84 = D-	

1. GRADE FOR MANAGEMENT OF FEDERAL FUNDS AND PROGRAMS: HHS OVERALL: **C-**

Respondents were asked to grade the federal government's management of funds and programs designed to improve public health preparedness at the state and local levels. They were asked to evaluate the public health preparedness efforts of the U.S. Department of Health and Human Services (HHS), Centers for Disease Control and Prevention (CDC), Health Resources and Services Administration (HRSA), National Institutes of Health (NIH), Department of Homeland Security (DHS), and the Substance Abuse and Mental Health Services Administration (SAMSHA). They were also asked to grade Congress and the Bush Administration for levels of resources and funding allocated to these agencies. Too few respondents provided responses for NIH and SAMSHA, so they were not included in the findings. Note: The overall HHS grade is listed separately (not as an average for all the HHS agencies listed) and was used to help compute the overall federal grade.

The experts were asked to consider consistency of funding, flexibility, and clarity in determining resource allocation, and guidance in relation to the stated goals and objectives in their evaluations.

Federal Department/Agency/Branch	Grade
Overall HHS	C-
CDC	C+
HRSA	C
DHS	D+
Congress and Administration for Resources/Funding Provided	C-

The federal investment in bioterrorism preparedness has primarily been directed to states through cooperative agreement grants through CDC and HRSA. [For additional detail, see the Introduction and Appendix B]. Additionally, funds have gone to support federal initiatives, such as the smallpox vaccination initiative, the Strategic National Stockpile, BioWatch and BioSense.

The Bush Administration's proposed FY2006 budget includes a cut of $130 million to CDC-administered state and local preparedness funds and a cut of $8 million to the HRSA Hospital Program.

COMMENTS ABOUT THE MANAGEMENT OF FEDERAL FUNDS AND PROGRAMS

Many of the respondents' comments reflected a concern that the federal government has not provided a "predictable, sustained level" of funding for public health preparedness efforts. Concerns were also expressed that the guidance for spending the funds is "inconsistent and ineffective." Some comments pointed out that there are no incentives or consistent measurements to gauge and encourage improved performance. One respondent pointed out that when drills are conducted, it "often remains a mystery how the results are used to make improvements." Others expressed concern that the federal policies are not appropriately responsive to state and local needs. Some felt that there were not enough funds reaching local jurisdictions and the funds received do not come with enough flexibility to meet specific geographic and demographic needs.

- *"The current 'priority of the month' approach to preparedness is counterproductive."*
- *"Congress, the Administration, and agencies have let the American public down."*
- *"The cuts and inconsistent funding levels put progress and additional improvements in jeopardy."*
- *"Congressional and Administration appropriations and agency expectations shift with political pressures, leading to inappropriately shifting priorities and insufficient funding to complete necessary tasks."*

NIH INVOLVEMENT: PROJECT BIOSHIELD

Enacted in July 2004, Project BioShield is a 10-year, $5.6-billion program to develop and produce new vaccines and countermeasures against potential biological threats. It is intended to provide incentives to private industry for research and development and to expedite government efforts, including allowing the Food and Drug Administration (FDA) to administer unproven drugs in the event of a crisis.

In 2005, Congress began to consider BioShield II legislation to address some concerns resulting from 2004 BioShield, including:

- Incentives: Few companies expressed interest in developing new biological drugs after BioShield I was enacted in 2004. BioShield II would offer increased tax and financial incentives to companies to increase research and development of vaccines and other pharmaceutical countermeasures, including a "wild card" providing companies with the potential to extend the patent on more lucrative medications in their portfolio in exchange for developing new countermeasures.
- Liability: The first round of legislation did not address liability concerns of manufacturers who fear they could be subject to lawsuits due to adverse side effects or lack of efficacy. BioShield II would offer provisions to provide increased liability protection.

2. GRADE FOR COORDINATION: **D**

Respondents were asked to grade emergency preparedness among the following relevant entities: HHS, CDC, HRSA, NIH, and DHS. The respondents were asked to evaluate coordination as a whole rather than agency by agency in order to provide their overall assessment of coordination across the range of involved federal agencies.

COMMENTS ABOUT PUBLIC HEALTH PREPAREDNESS COORDINATION AMONG FEDERAL AGENCIES

Overall, respondent comments reflected concerns that the efforts of federal departments and agencies are "stovepiped." Many referenced the different sets of priorities, objectives, and guidance statements issued by CDC and DHS as particularly problematic. Others pointed out the lack of integration between CDC and HRSA, which administer their cooperative agreement grant programs separately, although others believe this coordination is improving. Furthermore, some respondents focused on how divisions even within CDC are not coordinating with each other. For example, the bioterrorism preparedness cooperative agreement program is managed separately from pandemic flu preparedness planning efforts. Some others also called for increased coordination within other government agencies, such as the Environmental Protection Agency and the Nuclear Regulatory Commission, which could be crucial for particular public health preparedness concerns.

- *"The lack of coordination among the agencies within HHS, much less with DHS, is mind-boggling."*
- *"When it comes to addressing basic human needs in a community, as we have witnessed with Katrina, the coordination was not effective. Agencies get an 'A' for hard work, but an 'F' for achieving the desired results."*
- *"Silos mentality continues to rule."*
- *"The coordination between HRSA and CDC has improved, but it is still quite poor. There is really no excuse for this."*
- *"There has been much dialogue on coordination but little substance."*

3. GRADE FOR MEASURABLE GOALS AND DIRECTIONS: **D**

Respondents were asked to grade the federal health agencies on their establishment and communication of measurable and consistent preparedness goals for benchmarking progress and aiding planning at the state and local levels. [See "Where Are the National Performance Measures for Bioterrorism Preparedness?" in Section 1 for more background on the status of federal performance measures.]

COMMENTS ABOUT FEDERAL ESTABLISHMENT OF MEASURABLE AND CONSISTENT PREPAREDNESS GOALS FOR GAUGING PROGRESS

Respondents expressed serious concern about the lack of clearly defined public health preparedness goals and measures from the federal government.

- *"The complete absence of a defined set of cooperative agreement accountability indicators is the federal government's greatest failing."*
- *"It is unlikely you will find a consistent set of cross-cutting goals anywhere [in the country]."*
- *"One of the greatest failings of our preparedness planning process is the lack of attention to meaningful benchmarks and the establishment of evidence-based 'best practices.' We'll never get better at this until we get control of quality standards and metrics."*
- *"There is an attempt to develop preparedness goals but these are often stovepiped and not coordinated."*

4. GRADE FOR LEADERSHIP: **D+**

Respondents were asked to grade the federal government's leadership on health emergency issues since fall 2001. They were asked to consider consistency and cohesion in establishing chains of command, individual responsibilities and points of contact, jurisdiction for specific types of emergency scenarios, and feasibility of the National Response Plan for extreme health events. [For more discussion on jurisdictions for public health, see the Introduction and Appendix B].

COMMENTS ABOUT FEDERAL PUBLIC HEALTH PREPAREDNESS LEADERSHIP

Respondents discussed an overall federal "leadership vacuum" in responding to emergencies, including public health emergencies. One respondent pointed out that "the recent response to Hurricane Katrina paints the picture that the whole nation observed." A number of respondents focused on a conflict that exists among public health experts, security professionals, and political leaders, who all have different approaches and concerns, which become particularly strained during health emergencies. Others also raised concerns about the lack of "multi-system" integration among federal, state, and local levels. There was a feeling that these tend to become heightened during times of crisis, and the federal government is not providing strong enough leadership at the top.

- *"Politics seems to trump logic."*
- *"There is so much fragmentation and so little understanding of the local context for emergency response."*

5. GRADE FOR THE STRATEGIC NATIONAL STOCKPILE (SNS): **C+**

Respondents were asked to grade the SNS program, specifically its oversight, the consistency and relevancy of the evaluation color grades, the contents of the stockpile, and the SNS deployment effectiveness (both potential and in actual events). Respondents were also asked to provide grades on different aspects of the program. One respondent did not fill out the SNS section, so there were 19 respondents for this set of questions. Note: The overall SNS grade of C+ was used for the cumulative federal public health preparedness grade.

The SNS is a national repository of antibiotics, chemical antidotes, antitoxins, other pharmaceuticals, and other medical supplies to be used in the event of a terrorist attack or major natural disaster or accident. [For more discussion on the SNS, see Indicator 1 in Section 1 and the smallpox vaccination initiative case study in Section 3.]

Strategic National Stockpile	Grade
Overall SNS	C+
Appropriateness of Content	C+
Clear Direction	C
Assistance to Grantees	C-
SNS Model	C+
Effective Oversight	C

COMMENTS ABOUT THE SNS

The respondents generally acknowledged the value of the Strategic National Stockpile and the concept of the model, but felt that its implementation, particularly in working with states, localities, and other federal programs, had a number of problems. There was also concern about the contents of the SNS. Many respondents felt the SNS does not have enough basic medical equipment or a wide enough range of pharmaceuticals. There was also concern that the SNS is better suited to limited, situational bioterrorism or accidents and first-aid response than to mass emergencies.

- *"In concept, the SNS is a critically valuable resource. In operation, the SNS is shrouded in mystery and the worst kind of bureaucracy."*
- *"Guidance to states on distribution has been anything but helpful."*
- *"The SNS is better run than most parts of the agency but needs more equipment and countermeasures for chemical and radiological incidents."*
- *"Poor grades come from the lack of oversight and assistance to grantees. The federal government has not helped in this regard at all. However, the concept of the stockpile, the content of the stockpile, and vendor management as well as some of the trainings have been good. There is clearly not enough capacity at the federal level to properly evaluate the abilities/plans of states to manage and deploy the stockpile."*

6. GRADE FOR THE CITIES READINESS INITIATIVE (CRI): **C-**

Respondents were asked to grade the CRI program, particularly in its planning considerations, implementation readiness, oversight, potential scope and effectiveness, and coordination to ensure federal/state/local compatibility. Respondents were also asked to provide grades on these different aspects of the program. One respondent did not fill out the SNS section, so there were 19 respondents for this set of questions. Note: The overall CRI grade of C- was used for the cumulative federal public health preparedness grade.

Cities Readiness Initiative	Grade
Overall CRI	C-
Planning Considerations	D+
Implementation Readiness	D
Oversight	D
Potential Scope and Effectiveness	C-
Coordination	D

COMMENTS ABOUT THE CRI

Respondents were critical that the CRI program was developed largely in isolation from the ongoing federally supported state bioterrorism preparedness cooperative agreement program, and that the funds used to support it were taken from the state funds. However, some respondents pointed out that while support for one preparedness program should not come at the expense of another, the CRI seems to have helped some locations to quickly build capacity in some aspects of preparedness.

A number of respondents expressed concern that the CRI was started as a pilot program, but that the Administration has expanded it without receiving any substantiation about the results of the program. Other respondents also raised serious questions about a component of the CRI that is supposed to use postal workers to help distribute pharmaceuticals and execute the plans as surge support for public health workers.

- *"Anecdotal reports suggest [the CRI] is useful largely because it is going to cities with relatively competent public health staffs and infrastructures."*
- *"This was a program developed without input and was decided, developed, and then announced with a reduction of funding for all [states and localities] with not enough investment to carry out the CRI work."*
- *"This program is a joke! It was designed to meet the political concerns of some big cities."*

COMMENTS ABOUT THE CRI

The CRI was launched in June 2004 by HHS as a pilot program aimed at helping 21 cities across the United States to increase their capacity to deliver medicines and medical supplies during a large-scale catastrophic event. The planning centers on preparedness for a possible anthrax attack scenario. Some of the program objectives include:

- Building and sustaining the capacity to provide antibiotics to a city's entire population within 48 hours.
- Instituting emergency communications systems to inform the public.
- Coordinating with other emergency service providers, such as hospitals, police, and fire departments.
- Working with the postal service as a mechanism to deliver antibiotics.
- Ensuring the safety of the medications, medical supplies, and government and medical professionals.

The first round of CRI pilot cities (21 metro areas starting in FY2004) included Atlanta, Boston, Chicago, Cleveland, Dallas, Denver, Detroit, Houston, Las Vegas, Los Angeles, Miami, Minneapolis, New York City, Philadelphia, Pittsburgh, Phoenix, San Diego, San Francisco, Seattle, St. Louis, and D.C.

The second round of CRI cities (15 metro areas starting FY2005) include Baltimore-Towson; Columbus; Cincinnati-Middletown; Indianapolis; Kansas City; Milwaukee-Waukesha-West Allis; Orlando; Portland-Vancouver-Beaverton; Providence-New Bedford-Fall River; Riverside-San Bernadino-Ontario (CA); Sacramento-Arden-Arcade-Roseville; San Antonio; San Jose-Sunnyvale-Santa Clara; Tampa-St. Petersburg-Clearwater; and Virginia Beach-Norfolk-Newport News.

RURAL AMERICA EXPRESSES CONCERN ABOUT BEING LEFT OUT OF CITY-BASED STRATEGIES

While some experts in homeland security believe that urban areas are more likely targets for terrorism, others point out that rural preparedness issues raise other serious concerns. In September 2004, a group of experts convened the conference, "Preparing for Public Health Emergencies: Meeting the Challenges in Rural America."[79] The conference reported on limited resources in rural communities, particularly related to surge capacity concerns, since capacity would be quickly overwhelmed in most rural communities in the case of a major emergency. Additionally, the report highlighted concerns related to animal livestock and other forms of agriculture, and water, air, and transportation issues.[80]

7. GRADE FOR BIOWATCH: **D**

Respondents were asked to grade the BioWatch program's effectiveness, particularly its scope, capability and readiness, and oversight. They were asked to consider program coordination to ensure federal/state/local compatibility.

COMMENTS ABOUT THE BIOWATCH PROGRAM

Respondents were largely critical of the BioWatch program. They questioned both the efficacy of the technology and the policies that would then rely on using "positive" readings of potential hazards from monitoring BioWatch to trigger mass vaccinations or distribution of medications to the public. Some reviewers raised concerns that BioWatch was announced without significant input from scientists or medical experts and was not properly coordinated with the cities included in the program. There were specific concerns about the resources required to manage the program and a lack of guidance on how to respond to warning alerts.

- *"BioWatch was conceived in a vacuum with little if any understanding of the need to investigate and manage findings."*
- *"I have never seen the practical value of this effort."*
- *"This system will not save a single life if the consequence management piece is not fully supported. That means local health departments must be supported by being told where these devices are, they must be given plume modeling information, they must be integral in the environmental sampling protocols that are developed, and they must be fully in control of the messaging that the public must get in order to ensure an effective and orderly mass prophylaxis response."*
- *"I could be persuaded this is worth retaining as a research program, but it is a waste of resources in its current state."*

BioWatch is a system that tests the air in several major metropolitan areas for biological agents that terrorists might use. The system uses special filters on existing EPA air-quality monitoring stations. The filters routinely collect air samples that technicians then ship to public health labs for testing. BioWatch is administered by DHS in coordination with HHS and EPA. BioWatch is the first of a multilayered public health IT infrastructure that is operable. It was developed and implemented in just three months to monitor the surrounding environment for foreign substances.

The GAO issued a June 2005 report identifying a number of concerns with BioWatch: [81]

- **The three key components of BioWatch could not originally communicate with each other.** BioWatch is set up to (1) track environmental samples, (2) test for and report results, and (3) transmit the lab results to the CDC. When BioWatch was first implemented, the components that carried out each of these functions could not interface with each other. Thus, at each step, someone was forced to reenter data by hand. The GAO was assured that work is underway with a DHS contractor to solve this component communication problem.
- A 2005 EPA inspector general's report found that **necessary oversight of "sampling operations" was not properly carried out by EPA.** DHS contends that this has been remedied.
- There were also serious implementation problems at the local level. DHS provided **"procedures and software to use for sample management and data collection,"[82] but most localities did not have a plan of action in the event of a positive reading.** DHS has since targeted funds to localities to create plans, but did not realize that locals launched BioWatch without having such plans in place.

There are 33 states and D.C. identified as affiliated with BioWatch programs through identified cities or collaborations.[83]

8. GRADE FOR PANDEMIC FLU PLANNING: **C-**

Respondents were asked to grade federal pandemic influenza planning efforts. They were asked to consider leadership, directives to state and local health departments, the content and comprehensiveness of plans and exercises, and the overall planning effectiveness against a pandemic influenza outbreak. The survey was conducted prior to the November 2005 release of the federal pandemic flu plan.

COMMENTS ABOUT FEDERAL PANDEMIC FLU PLANNING

Respondents acknowledged and expressed moderate praise for the recent attention and increased priority that federal officials and Congress are giving to pandemic preparedness. Some respondents, however, also expressed concern about the lack of consistent and defined measures for preparedness planning. Others pointed out that pandemic concerns have long been on the scientific horizon and that the federal pandemic preparedness plan started over a decade ago and should have been completed a long time before the threat reached a more elevated level.

- *"Their timeframes are completely out of sync. States have been [asked to develop] plans before either HHS or national plans [were complete]."*
- *"If the past is any predictor, we'll be cleaning up a mess before our planning is completed."*
- *"This is the single most important bioterrorism preparedness issue that we have dealt with since September 11th and it will make the October 2001 anthrax attacks look like a walk in the park... Preparing the public is the most important leadership issue, particularly in the absence of adequate vaccine."*
- *"It's too late and there is insufficient funding and local engagement."*

9. GRADE FOR BIOSURVEILLANCE: **C-**

Respondents were asked to grade federal efforts to upgrade national surveillance capacity. They were asked to consider the adoption of Public Health Information Network (PHIN) standards, deployment of syndromic systems, and communications about the national goal of interoperable data. [See additional discussion about disease tracking and NEDSS in Section 1, Indicator 5.]

COMMENTS ON BIOSURVEILLANCE EFFORTS

A number of respondents raised concerns that the public statements by the government about the capabilities of disease and syndromic surveillance in the United States do not match the reality of the limited capabilities of the systems that are in place. Some respondents felt the surveillance systems had "good potential," but that there were too many different systems in use in different places and the lack of any agreed upon system hampered the surveillance activities. Others expressed concerns about the inconsistencies in the capabilities among states and the lack of coordination in surveillance among levels of government and between the government and the private sector. Some respondents questioned the utility of syndromic surveillance altogether.

- *"PHIN standards have taken way too long to develop."*
- *"Simply a disaster."*
- *"We need a national disease reporting system."*

10. GRADE FOR THE RESPONSE TO THE INFLUENZA VACCINE SHORTAGE OF 2004: C

Respondents were asked to grade the federal health agencies' response and performance to the influenza vaccine shortage of 2004. They were asked to consider the pre-shortage readiness, the coordination and effectiveness of the response, and the subsequent remedial steps to close any gaps identified by the event.

COMMENTS ABOUT THE FLU VACCINE SHORTAGE OF 2004

Respondents were mixed about the response of federal public health officials to the shortage. Some called it a "textbook example of how the governmental public health system -- federal, state, and local -- should function." Other reviewers felt the CDC waited too long to work with states and localities on an approach and gave states limited information, and others focused on a "lack of leadership" by HHS and the CDC on working with vaccine manufacturers to avoid the "predictable" situation.

- *"The vaccine distribution system for flu is broken and CDC should provide the clarion call to fix it. However, CDC did work closely with the private manufacturers to redirect the limited supplies of vaccine through governmental channels to reach high-risk groups first. This was key."*

In October 2004, the CDC announced that approximately half of the expected flu vaccine for the United States would not be available. The Chiron Corp., one of three manufacturers that supplies flu vaccine to the United States, alerted the country that it would not be able to meet demand for its flu vaccine after problems at a British plant halted production of millions of doses. The shortage highlighted the fact that the United States relies on too few manufacturers to deliver the country's "projected need of 100 million doses."[84] As a result, CDC officials encouraged changes in the nation's distribution procedures for the flu vaccine supply, reserving doses only for the populations most in need. CDC coordinated delivery of the vaccine that was available and provided guidelines, but each jurisdiction determined its own distribution system and priorities. The shortage resulted in a focus of media and public attention on the issue for a period of time, long lines at health clinics around the country, and calls for incentives, liability reform, and other measures to encourage a broader range of vaccine producers. It also demonstrated the major variability in preparedness and policies in jurisdictions throughout the country in how they responded and set up vaccine delivery systems.

11. GRADE FOR THE SMALLPOX VACCINATION INITIATIVE: **D-**

Respondents were asked to grade the federal health agencies' performance in the creation and implementation of the smallpox vaccination initiative. They were asked to consider the pre-event readiness, the coordination and effectiveness of the response and implementation, and the subsequent remedial steps to close any gaps identified by the initiative. [For more information on the initiative, see the case study in Section 3.]

COMMENTS ABOUT THE SMALLPOX VACCINATION INITIATIVE

Respondents were largely negative about the initiative. Most pointed out that the initiative failed to address some basic requirements from its outset: "You cannot initiate a crash national immunization program without having first solved the issues of liability and compensation," and "review points must be built in" to address problems. Others expressed concern about the prioritization and significant amounts of resources devoted to the effort despite lack of evidence that it was a major looming threat to the U.S. population.

- *"An ill-conceived plan from the start... bad intelligence, bad plan, bad communication strategy, and poor execution."*
- *"In retrospect, this seems to have been overkill, but at the time we did the best we could under the circumstances. We learned a lot about managing adverse effects, communications, and planning for the future."*

12. GRADE FOR THE PUBLIC HEALTH RESPONSE TO HURRICANE KATRINA: **D**

Respondents were asked to grade federal health agencies' response to and performance in Hurricane Katrina. They were asked to consider the pre-event readiness, the coordination and effectiveness of the response and implementation, and subsequent steps to close gaps identified by the event.

HURRICANE KATRINA: AN ANALYSIS OF THE RESPONSE EFFORT

"Before Hurricane Katrina, the only prior recent incident for which a federal public health emergency had been declared was the terror attack of September 11, 2001."[85]

Hurricane Katrina delivered well-documented devastation to Louisiana, Mississippi, and other locations along the Gulf Coast. In addition to the human toll, confusion resulting from Katrina prompted numerous assessments of preparedness for national mass-emergencies. Among several health-focused analyses, a recent report from the Congressional Research Service (CRS), "Hurricane Katrina: the Public Health and Medical Response," examined the roles, responsibilities, and issues arising from the event.

According to the CRS report, Hurricane Katrina "dealt some familiar blows in emergency response: the failure of communication systems and resultant difficulties in coordination challenged response efforts in this disaster as with others before it. Hurricane Katrina also pushed some response elements, such as plans for surge capacity in the healthcare workforce, to their limits for the first time in recent memory. The public health and medical response to Hurricane Katrina has also called attention to the matter of disaster planning in healthcare facilities, and the potential role of health information technology in expediting the care of displaced persons."[86]

Katrina also identified additional gaps in emergency preparedness, including:

- Hospitals overwhelmed with medical personnel working with few supplies, in unsanitary conditions, and without electricity.
- Doctors and nurses exponentially outnumbered by those in need and backup support not arriving until days later.
- Insufficient measures taken to care for the chronically ill, those in nursing homes, and the disabled in the event of a mass emergency or needed evacuation.
- Stoppage in the chain of delivery for food, water, medicine, and other supplies due to the nation's "just in time economy."
- Disruption of emergency communications systems.
- Response to infectious disease concerns and other public health hazards.
- Unclear and inconsistent messages to the public.

The CRS study also catalogued six broad "Issues for Congress" with respect to improving future mass-emergency response:

- All-hazards preparedness.
- Coordinated needs assessments.
- A national disaster medical system.
- Continuity of operations and evacuation of healthcare facilities.
- Volunteer health professionals.
- Health information technology.[87]

SECTION 3

Smallpox Mass-Vaccination Case Study

IN 2003, THE BUSH ADMINISTRATION CALLED SMALLPOX THE "#1" BIO-THREAT IN 2005, ARE WE PREPARED FOR IT?

In January 2003, the Bush Administration declared smallpox the "#1" bio-threat facing the country, and made planning for an attack a top priority.[88] The Administration launched a national smallpox vaccination initiative with the goal of immunizing 500,000 health care workers in 30 days and 10 million emergency response personnel within a year. The plan ran into complications, including worker compensation and liability concerns.[89] Over two-and-a-half years later, fewer than 40,000 health care workers have been immunized.[90] Yet there is sufficient smallpox vaccine in the Strategic National Stockpile to immunize an estimated 300 million Americans.

The Administration has since shifted strategies to "require" instead that states be prepared to immunize their entire populations against a disease threat within 10 days. Although some state officials and public health experts have repeatedly called this requirement misguided, it persists as national policy.

In order to assess states' preparedness for smallpox, TFAH developed a hypothetical outbreak scenario and surveyed emergency preparedness officials in eight states to gauge their likely response and capabilities in such an event. The officials included state bioterrorism and public health preparedness officers, Strategic National Stockpile administrators, epidemiologists, and laboratory scientists representing regional, metropolitan, suburban, and rural areas.

HYPOTHETICAL SMALLPOX SCENARIO

DAY ONE: In a clinic in the capital city of an East African nation, a patient has lesions and complains of three days of debilitating back and headaches. No one on the staff has ever encountered this type of case. The patient is given an exam and asked to return in 24 hours, and a swab of one of the lesions is taken for lab analysis. He does not return the next day.

DAY TWO: The clinic is located two blocks from a major hotel, which has held three major events with approximately 2,000 international visitors, 150 from the United States. Active smallpox has been circulating among the front-door personnel of the hotel for more than a week. Potentially thousands of encounters have taken place with people who are now dispersed all over the world. On this day, three of the seven hotel doormen are absent from their shifts, as well as nine parking valets. One of the valets visits the same health clinic after noticing his skin is breaking out in lesions.

It will be another three days before the national health authorities, with the assistance of an emergency response team from the CDC, arrive and positively diagnose the disease outbreak as smallpox.

DAY FIVE: Hotel guests begin to experience fevers and debilitating aches and pains. Around the world, a series of similar, isolated complaints begin to be reported. A man complaining of a fever is taken off a plane in New York City on his way back to Detroit after visiting a conference in East Africa. Similar reports come in from Indonesia, China, Australia, and numerous European countries.

Reports of strange and severe illness in travelers begin to appear in the news media worldwide. Stories begin to emerge on the Internet about the isolation of passengers in hospitals. Media outlets ask officials for comments on whether this is an act of terrorism or the start of a pandemic outbreak. Throughout the United States, governors, mayors, and health officials are asked to make public comments about potential cases in their communities.

DAY SIX: The CDC briefs states and local health officials about confirmed cases of smallpox. WHO provides information to countries throughout the world simultaneously. States are asked to prepare their mass vaccination plans. Three hours later, responding to the public's widespread fear and demand for vaccination, the President declares a national state of emergency and asks health authorities nationwide to activate their smallpox vaccination plans.

Could the Public Be Vaccinated in 10 Days?

When TFAH asked emergency preparedness officials if they could meet the Administration's requirement that their entire state populations be vaccinated in 10 days, their responses ranged from feeling "extremely confident" that they could vaccinate the bulk of their state's population, to others reporting, "it's just not possible."

However, even the officials who responded positively expressed a number of caveats. Many said that they are focusing on what is realistically possible. And others expected a "compromise position" where the vaccine is made available to those who are very concerned, but not forcing vaccinations unless significant local risk is believed. "We just have to plan for and expect glitches. Lots of glitches," one respondent said.

Respondents largely pointed out that the "compromise position" or other approaches, such as a more targeted, limited vaccination program, would actually be preferable. In fact, many said that an alternative approach to wide-scale vaccinations would be more advisable based on their medical and historical knowledge of smallpox as a threat and how it spreads.

As an example of the need to better match response plans to realistic risks, one official pointed to the recent effort to evacuate Houston prior to Hurricane Rita as providing an analogous lesson. Evacuation plans

HOW THE STATES' VACCINATION PLANS WORK

Most states in our survey reported that they have established mass vaccination plans that include:

1) **Staging areas,** where the vaccines and supplies delivered by the Strategic National Stockpile would be divided for delivery within the states.

2) **Delivery chains,** where the supplies would be transported by a combination of air and ground delivery, accompanied by law enforcement or National Guard troops, to "dispensing points" where people in communities would go for their vaccinations. These have typically been identified in partnership with local health agencies on a "community-by-community" basis.

3) **Surveillance** would be bolstered to track potential smallpox outbreaks. A "vaccinate the vaccinator" effort would also immediately begin, even before decisions were made to vaccinate the full population. Public health officials, doctors, nurses, and other medical suppliers would be vaccinated and, in turn, would become the vaccine administrators in local communities. They would also have to be quickly trained to administer the vaccine. Vaccinations would begin with priority groups, such as law enforcement officials, before general public vaccinations would begin.

4) **An immediate emergency epidemiological effort,** which would try to locate people most likely exposed to the virus through travel to affected regions or other interactions.

5) **A public education outreach campaign** to notify the public about the vaccination initiative. Through local media, people would be told where they should go within their communities to be vaccinated.

Testing the plans: States vary significantly in the ways they have tested their plans. Some conduct regular exercises, including making the tests more difficult each time or trying to factor in possible complications. Others have not tested their plans as extensively, which is often attributed to competing priorities for time and resources. The states' replies also varied widely depending on the structure of their public health systems. Many states have decentralized public health structures, where the state's job is to coordinate the work of local health departments rather than to provide top-down control and management.

were developed based on estimates of one million evacuees, but it is estimated that over two million residents actually tried to evacuate the city. The respondent said the lesson was to concentrate on people who are at the highest level of risk.

Would Actual Responses Be Based on the Best Medicine?

Some officials fear that a mass vaccination could be ordered even in cases where it is not the best medical approach. They say that even if the medical and scientific community recommended a more limited approach based on trying to "ring vaccinate" those who were likely exposed or could be exposed, there might nevertheless be a "knee-jerk" response by government officials not trained in public health to try to allay public fears, setting off a mass vaccination plan instead. This is particularly worrisome with smallpox because the vaccine poses potentially serious health risks.

Some respondents also expressed concern about the great differences to be expected in the states' responses. Each state has a unique plan and different policies, which could lead to confusion and frustration both with the public and among states. One respondent said, "there is an absolute chasm of communication between the medical and epidemiological communities and the security community."

Who Will Sound the Alarm -- and When?

Based on responses, there is an assumption that states will receive rapid guidance from the CDC about if and when they should begin to vaccinate their entire populations or a subsection of their populations. Some states say they would "lean forward" and begin to vaccinate officials who would be needed to vaccinate others once a case of smallpox was identified anywhere in the world. But the specific criteria for the activation of a nationwide smallpox vaccination effort are unclear. Officials are skeptical of the often-stated trigger of a single case anywhere in the world.

Many Unanswered Questions About the Strategic National Stockpile

The states had many questions about the CDC's SNS program. No state was certain how or in what quantity the vaccine and other equipment would arrive to the state from the Strategic National Stockpile.

Other concerns included a lack of information about pediatric dosing standards, remaining liability and compensation issues for taking and administering the vaccine, and how adverse effects to the vaccine may be tracked and dealt with. States also reported that they have never been asked by federal SNS administrators for population need numbers or estimates on how populations shift seasonally, such as in states with large beach communities.

Overall, respondents felt the SNS has little strategic vision and is operated through a micro-managerial perspective. The respondents universally felt the SNS measurement system is broken. The goals are unclear and the expectations for "readiness" are not specific and are not properly explained to the states. The respondents commented that the CDC's evaluation process of states is "elusive," and they felt the grading process was arbitrary. Some recognized that the CDC is trying to correct the process, but change is slow in coming. Respondents felt that the SNS needed more exercising capabilities to help them better prepare for emergencies, and that mock tests of the system should be occurring regularly in all states.

Overall, respondents expressed a lack of confidence that there is a national implementation plan. They say they are unaware of having been given any guidance or details that they can use in their own planning efforts.

Would the Need to Deliver to All 50 States Overtax the Stockpile?

There is hope that the SNS could be delivered within the defined 12-hour delivery window to all 50 states, although no one seems to be precisely sure that it is possible.

Many officials also expressed concerns about whether there would really be enough equipment or medical supplies to match the surge needs, particularly if materials had to be deployed to every state. Some states are planning around a belief that there will be a "tiered" roll-out strategy of the SNS, with some states receiving supplies first, or that vaccines and equipment will come in "waves" instead of as a single shipment. "I hope and have to believe that the SNS has enough supplies," said one respondent.

Would There Be Enough Medical Personnel to Vaccinate the Public?

A number of survey respondents felt that the medical capabilities of their states would quickly become "overtaxed." Most of the plans rely on hospitals and private medical professionals to be part of the vaccination effort, but this raises concerns because most private health providers are under no formal obligation to help.

"With all 50 states impacted, there would be no backup, no one else coming to help, unlike in situational emergencies, like hurricanes. That's our biggest fear factor," said one respondent. Additionally, the officials point out that all medical fields – doctors, nurses, paramedics, public health professionals – are already experiencing ongoing workforce shortages. The workforce would be even more overtaxed in an emergency.

The respondents also varied in their confidence that medical professionals would expose themselves to the risk involved in leading the vaccination effort. The officials all expect that there will be fewer volunteers and less participation from the medical community than might be expected during a non-infectious disease emergency. There is hope that private and retired medical workers would step in to help.

Risk Communication and Public Response -- a "Wild Card"

The states plan to communicate with the public about symptoms and when and where to go for vaccinations largely through pre-developed "risk communications" messages. But most of the respondents felt it was difficult to predict how the public would react, and all expressed concern about possible public panic. "Human nature is the real monkey wrench in our plan," one respondent said.

There is a belief that some segment of the population will be highly eager to get a vaccine and some will be very wary of it. And plans rely on the "best guesses" of who will show up and where, despite the states' best efforts to direct people in an organized way. One respondent expressed concern that "everything you strive for in traditional risk communications [relying on pre-planned messages] won't work – there will be no single voice, no clear message...and we'll have to watch how the strategy is not working properly unfold in front of our eyes."

Many have conducted exercises of their plans with law enforcement officials. However, they are concerned that in the event of a real-world situation, law enforcement officials will have other concerns that will detract them from providing support for medical workers and the stockpile. One respondent added, "Even if you could get everyone vaccinated, could you get traffic under control? Can you keep the lines of people secure and orderly?"

The respondents also expressed universal concern about managing issues related to "vulnerable" and "special needs" populations. While there is a belief that people in nursing homes and people who are regularly provided with social services can be reached, there is great concern about those "outside the system" and people who have difficulty speaking English. There is also great concern about an outbreak in harder-to-reach populations. However, there is a hope and an expectation that "herd immunity" will help protect those who do not get vaccinated.


BIOHAZARD

SECTION 4

TFAH "READY OR NOT?" 2005 RECOMMENDATIONS:

Let's Get Real

TFAH's three **"Ready or Not?"** reports have shown significant improvements in the nation's emergency public health preparedness, but also revealed that we are still only modestly better prepared than we were prior to September 11, 2001.

Hurricane Katrina provided a sharp indictment of America's emergency response capabilities as the gaps between "plans" and "realities" became strikingly evident. Parts of the public health system did not work, and while many did work as intended, those functions were often too limited and divorced from other response activities to match the real needs in a timely way.

The United States must inject more realism into public health emergency planning.

The country has an important opportunity to address these gaps in the upcoming year, particularly when Congress considers the reauthorization of the Public Health Security and Bioterrorism Preparedness Response Act of 2002 (Public Law 107-188) and BioShield II legislation. TFAH calls for accelerating bioterrorism and public health preparedness efforts, taking an "all-hazards" approach to help protect against a range of possible threats, including a major outbreak of a new, lethal strain of the flu, a bioterrorism attack, and a natural disaster.

The Let's Get Real Agenda:

- **Leadership:** TFAH calls for increased leadership and oversight of U.S. bioterrorism and public health preparedness. HHS needs to integrate top-level management of multiple bioterrorism and public health preparedness programs.
- **Accountability:** It is inexcusable, four years after September 11, 2001, that there are no defined, standardized performance measures for bioterrorism preparedness from CDC or regular reports of progress and vulnerabilities to the American people and Congress. Steps must be taken immediately to establish useful performance standards, and increased measures must be taken to ensure state and local planning efforts match preparedness needs. The HRSA program must be reviewed to ensure greater achievable, measurable preparedness improvement outcomes.
- **Working With The Public:** Anticipating the "real world" complications that will arise during an emergency event, planning must acknowledge that the media, general public, business community, and other audiences will not always conform to rigid planning procedures.
- **Improving Basic Response Capabilities:** From surge capacity preparations to frequent tests and drills, planning efforts must better incorporate the best advice of health experts and emphasize operational capacities. The basic technology and tools of public health must be modernized to adequately protect the American people.
- **Funding:** A much more significant investment must be made to reach the highest achievable level of preparedness.

1. LET'S GET REAL LEADERSHIP

TFAH calls for improving the strategic approach to public health preparedness through increased focus on the oversight and integration of programs.

Reconstitute Federal Health Management: HHS must take the lead by integrating the top-level management of the currently diffuse array of bioterrorism and public health preparedness programs. There needs to be a single, accountable official below the Secretary of HHS with budget and policy authority for programs. This could take the form of a revitalized and reconstituted Assistant Secretary for Health (ASH), the ASH combined with the position of the Surgeon General, or a newly created position of a Deputy Secretary for Health. Within 90 days of the new management structure taking effect, this office should be required to provide concrete benchmarks to Congress, defining standardized performance measures for CDC and HRSA preparedness cooperative agreement grants, the SNS program, and other bioterrorism and public health preparedness initiatives. The various bioterrorism programs should then be required to report progress and problems based on these concrete measures to the reconstituted federal official responsible for health. This official should work in close consultation with DHS and, with the Secretary of HHS, be prepared to assume the lead for the national response to public health emergencies. Finally, the federal official responsible for health should be required to provide an annual report to Congress.

State Accountability: As a condition of receiving federal preparedness funding, governors should be required to report to the federal official responsible for health about the progress their state has achieved using the federal bioterrorism preparedness funds and performance measures. The governors should also be required to demonstrate state funding for public health preparedness and ongoing programs in order to be eligible for continued receipt of federal funds, including certifying that "maintenance of effort" has been sustained. While federal agencies currently provide guidance documents for state grantees, there are no functional systems in place that quantifiably measure progress or maintain accountability.

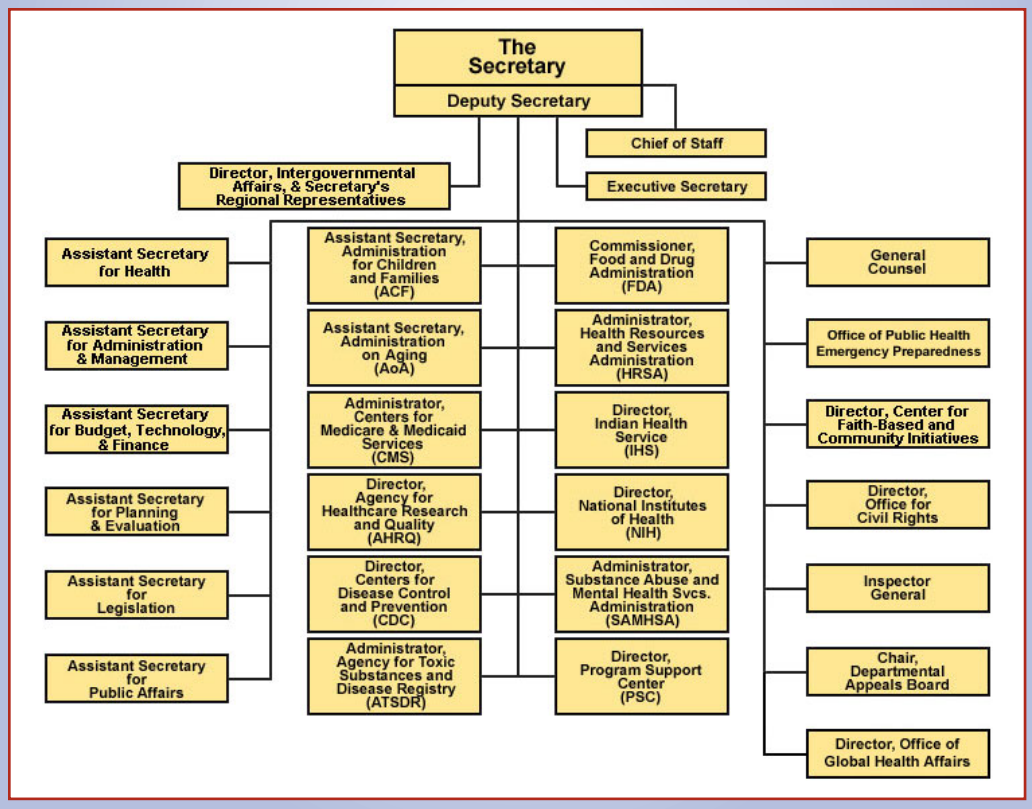
REALITY CHECK: Be Constructive, Not Defensive

There is a long way to go to reach an adequate level of preparedness for health emergencies in the U.S. Many of the improvements needed are critical to provide basic protections. However, it is unrealistic to expect all of the improvements needed to the public health system to be accomplished overnight. A sustained commitment is needed to protect the public's health. The public health community must do a better job of setting realistic expectations by defining and providing appropriate, achievable performance standards. Without standards, there is no framework for understanding what progress has been made, what areas remain vulnerable, and what needs to be done to fill in the gaps.

The public health community must be more forthcoming and clear in defining its challenges and problems. Rather than being defensive about vulnerabilities in preparedness, the focus should shift to encouraging the serious examination of areas that need improvement and how these improvements can be made. Political officials must create a climate that encourages and provides incentives for identifying and fixing problems. Without a change toward a more constructive view, problems will continue to be ignored or overlooked.

REALITY CHECK: Reconsidering the HHS Organizational Chart[91]

Currently, the Assistant Secretary for Health (ASH) "serves as the Secretary's primary advisor on matters involving the nation's public health," and the Assistant Secretary of the Office of Public Health Emergency Preparedness (OPHEP) "serves as the Secretary's principal advisory staff on matters related to bioterrorism and other public health emergencies."[92] The other agencies and programs related to emergency and public health preparedness, however, report to the Secretary of HHS, who also oversees a wide range of healthcare and human services programs. Prior to the mid-1990s, the ASH was responsible for ensuring that public health programs were directed and integrated. TFAH believes that there must be a single position that is responsible and can be held accountable for coordinating and overseeing emergency, bioterrorism, and ongoing public health preparedness needs. As with the other agencies and programs related to public health preparedness, OPHEP, with the responsibility of implementing preparedness plans, should be integrated into the areas that report to this overarching position.



Source: HHS

2. LET'S GET REAL WITH THE PUBLIC

Planning must acknowledge and integrate the complications that are likely to arise during an emergency event. Officials must do a better job of taking into account the likely real-world reactions from the public, media, and decision-makers. Planning must also take into account the shortcomings in the response systems and what will happen to these systems when they are overwhelmed in mass emergency events.

- **The Public Needs to Be Seen and Treated As a Partner:** Mass emergencies will always generate some degree of chaos. Currently, the American people have little idea of what they can do to better control health emergency situations and protect themselves and their families. The public health sector needs to provide more education. Efforts such as pandemic flu preparedness must include 'buy- in' from – and information distributed to – the public. Otherwise, the natural response will be heightened panic, confusion, and distrust of the government. The government should level with the American people about its capabilities as well as areas where it is not prepared. The public should be aware of limitations of the government's capabilities and resources so they will understand difficult situations, such as when vaccine may not be widely available and must be targeted to those most at risk or why it is important to comply with a mass isolation or quarantine.

- **"Vulnerable" and "Special Needs" Populations Must Be Served:** These groups will always prove to be a huge challenge in the delivery of public health services. There should be a special effort and strong leadership at the national level to define these needs, ranging from language translation services to ambulatory care, and find solutions. A good example of this type of planning is occurring in Washington, D.C. After seeing what happened to those without reliable personal transportation during Hurricane Katrina, the city is working with its Department of Motor Vehicles to determine what areas of the city would most need public transportation to evacuate citizens in an emergency. City leaders would then target resources to these areas. Additionally, efforts must be taken to find ways to reach the disabled and home-bound, particularly during emergencies requiring a mass vaccination or medication distribution if they are at risk, when they would not be able to go to public vaccination clinics.

- **Risk Communications Must Be Realistic:** Currently, most public health risk communications plans focus on how to get accurate information about health threats to the public. They rarely take into account the way the media operate in the United States, which is freely and openly. The government will not be able to tightly control every message that the public will hear during an emergency. The public will witness and hear accounts of what are often the worst-case scenarios through the media. They will also be exposed to criticism of the government's strategies and actions. These realities need to be factored into government plans to communicate about health threats. The risk communications strategies must go beyond hourly press conferences and advisories on Web sites. The media can be an effective partner in transmitting proper information, but only if consistent and clear messages are pre-established and the public distribution channels are pre-arranged.

3. LET'S GET REAL CAPABILITIES

Protecting the public's health requires having the tools, technology, training, and personnel to investigate and diagnose diseases, contain threats, and provide effective treatments. But currently, many of these basic public health capabilities are not in place. TFAH calls for a "back to basics" approach to achieve better preparedness.

- **Mass Events and Surge Capacity:** There is no question that major health emergencies overtax the health system of impacted communities. When there is a mass emergency, such as the anthrax scare or a possible infectious disease outbreak, the entire health system is quickly overburdened, both by the need to examine suspect cases and the concerns of the "worried well." That is why local, state, and federal emergency medical and public health planning must include the integration of academic health centers, large private healthcare systems, and private community hospitals. Surge capacity issues must be given top priority; hospitals should explore developing "multilateral mutual aid" agreements with other hospitals and their local health departments to share resources and personnel during major crises. Due to the complexity of the healthcare industry, pre-event planning must address and resolve relevant legal and financial complexities and concerns.

- **Better Matching of Plans to Public Health Expertise:** According to respondents of both the TFAH federal survey and the TFAH smallpox scenario survey, there is an ongoing clash between security planning goals and the best advice of public health experts. For instance, in the smallpox scenario, most of the scientists would recommend a limited "ring vaccination" approach targeting those most at risk. But they also believe that the political response would override their recommendations, leading to a massive, nationwide vaccination effort, even if it would not be medically advisable. As another example, the CRI focuses on the ability to distribute medications to the entire population of metropolitan regions within 48 hours, even though the potential for exposure in many areas or populations may be low, and this approach could mean that those at highest risk are not identified or cared for as well as they need to be. It is critical that the best advice of health experts be given a sufficient voice during mass-emergency situations by strengthening health agencies' authority to be the official sources of information during an event.

- **Test and Test Again:** Most public health and emergency response experts agree that practice exercises are the best way to assess and increase preparedness. Drills must be developed and conducted on a routine basis. The tests must also be developed and conducted with specific standards to measure performance and capabilities and ensure that public health is integrated into emergency management systems. And the tests must replicate actual disaster conditions as much as possible; as one smallpox scenario survey respondent said, "A disaster is the best way to plan for a disaster." Realistic testing that is the closest thing to a genuine disaster helps preparedness planners understand and find solutions for problems that may arise. Hospitals must also test their plans to maintain a viable workforce during a large-scale disaster and to expand both in-patient and emergency care capacity during a surge event, including addressing the potential need to ration care and alter standards of care. There must also be increased mechanisms for improving plans based on the lessons learned from conducting tests. The fact that emergency tests prior to Hurricane Katrina revealed vulnerabilities in the levees protecting New Orleans, yet no actions were taken based on these findings provides a strong example.

REALITY CHECK: Fixing the Fundamentals

A number of key elements of the public health "infrastructure" must be modernized and revitalized by emphasizing technological improvements and basic public health defenses.

Upgrade Technology. Information technology systems, emergency communications systems, and other equipment all need to be modernized to meet current technology. Epidemiology should be brought into the 21st century, with investigators having access to real-time, mass population data. The movement toward electronic medical records should be seized upon by public health as an opportunity to radically change and improve access to such data. Public health labs should have state-of-the-art biological and chemical testing capabilities. These improvements are needed to give public health professionals the information they need to detect, contain, and treat disease outbreaks and other health threats.

Bolster the Strategic National Stockpile. New ways must be found to bolster research, development, production, and acquisition of needed medicines and equipment for the stockpile. Congress should continue to engage with industry to look for creative solutions and incentives in BioShield II. Additionally, ongoing concerns about the stockpile must be addressed, including 1) backup of routine medicines and equipment to care for those with chronic conditions, 2) reinvigorating the CHEMPACK program, which is currently stalled, 3) promoting and finding ways to encourage best practices in states for improved delivery and administration of the stockpile, and 4) overhauling the federal SNS review process of states.

Fix the Vaccine and "Countermeasures" Markets. The November 2005 pandemic flu preparedness plan called for innovative ways to jump-start U.S. research and development of flu vaccines. HHS should engage industry to look for creative solutions and incentives for stimulating research and development of vaccines and other medicines aimed at protecting the public from major infectious threats. Liability and compensation issues must also be addressed. The upcoming consideration of BioShield II legislation provides a perfect opportunity to tackle these issues.

Address the Lab Reagent Shortage. According to the Association of Public Health Laboratories, critical chemical compounds used by laboratories to test for anthrax and other agents of bioterrorism are in dangerously short supply. This must be addressed immediately by investing in the materials needed and ensuring the nation's labs have the supplies they need to respond to major health threats.

Recruiting a New Generation of Public Health Professionals. There is a massive impending public health workforce shortage in the United States. Congress should immediately act on the Public Health Preparedness Workforce Act of 2005, introduced by Senators Hagel and Durbin.

REALITY CHECK: The "Silos and Bureaucracy" of Public Health

Integrate Public Health and Other Emergency Preparedness Efforts. During emergencies, the public does not care about bureaucratic distinctions of responsibilities. Public health organizations need to think beyond a "that is not our direct responsibility" approach and reach out to other groups for advice about what they need to be prepared to do.

Coordinate Federal Agencies. Currently, federal response efforts are "siloed" not just among various executive branch departments, such as HHS and DHS, but also within HHS agencies, including CDC, HRSA, NIH, and the Office of Public Health Emergency Preparedness (OPHEP). For instance, most emergency response efforts are planned within the Public Health Service, but OPHEP is considered "in charge" of implementing the response. There also needs to be more information about the role of the Chief Medical Officer at DHS, and how this office coordinates with other public health leadership functions.

Establish Who Is Accountable for Federal Taxpayer-Supported Programs. Currently, CDC often says it views the states as "its clients" rather than taking the position that it can and should hold grantees of taxpayer dollars accountable for their performance. There are numerous examples of other agencies holding states and grantees accountable for their use of federal funds, such as the Department of Education, the Department of Transportation, and the Environmental Protection Agency.

Improve Federal-State-Local Coordination. There is a need to bolster preparedness at all levels; however, the public health community has not clearly defined the specific responsibilities and funding it would take to meet those needs. The different levels of government are left with a "robbing Peter to pay Paul" mentality as they battle over the too few dollars allocated for preparedness.

4. LET'S GET REAL FUNDING

The current level of funding for public health does not match the modernization and basic improvements needed to adequately protect the public's health. A major increase in investments must be made to reach basic levels of preparedness for emergencies. Funding must be considered in conjunction with the range of other issues during the debates about reauthorizing the public health and bioterrorism preparedness act in the coming year. Money is clearly an essential part of the equation, but there must also be heightened efforts to ensure the funds allocated are being used efficiently and effectively.

Public Health: After September 11, 2001, Congress appropriated nearly $1 billion annually for CDC "cooperative agreement" grants to states to use for public health and bioterrorism preparedness. The funds have clearly made a positive difference, but, there is still a long way to go to achieve adequate preparedness levels. Starting in FY 2004, portions of these funds have been redirected to support federal bioterrorism initiatives. The eroding of these funds is taking away from the ability of states and localities to reach their preparedness goals. There needs to be a firm baseline set, so that the bioterrorism and public health preparedness grants to states must not drop below $950 million per year; the estimated allocation needed for sustainable progress. Once a better system of accountability is in place, there should be a better determination of what gaps still remain and how much it will cost to achieve these additional improvements.

Hospitals and HRSA: Americans spend approximately $515 billion a year on hospital care.[93] HRSA cooperative agreement grants intended to help hospital disaster readiness are approximately $500 million a year. It is obvious that current funding levels are woefully inadequate to make any broad impact in the hospital sector given the existing operational costs. TFAH calls for doubling the amount of the HRSA readiness grants to $1 billion per year. HRSA grants must also be better targeted to critically important emergency response capabilities and to hospitals which otherwise would not be able to perform appropriately in the event of an emergency.

- Even if a major increase is made in HRSA grants, there needs to be improved focus on where and how to use these funds most effectively.
  - Some experts have called for "community hazard assessments," which could help determine where to target funds to meet the most likely risks in communities.
  - Additionally, some suggest targeting the funds to some of the highest priority needs across hospitals. For instance, HRSA funds could be directed toward giving healthcare workers priority care to ensure that there will be medical personnel available to care for the rest of the public. Funds could also be used to provide healthcare workers with incentives to report to work or volunteer beyond their regular job requirements during emergencies.
- Currently, HRSA guidance for the use of funds focuses on preparedness at the state and community levels, but the funds are distributed to hospitals, which operate as independent entities.
  - Some experts have suggested a "paradigm change," with HRSA funds being directed toward developing wider community preparedness for hospital surge capacity needs. Public-private partnerships could be formed to ensure that facilities and supplies would be available during a mass event. And communities where private entities have made commitments to providing supplies or surge capacity facilities or funds could receive a percentage match of funds from the HRSA program.

▲ Other models should also be explored that would provide additional all-hazards basic equipment or surge capacity needs for hospitals. For instance, purchase of all-hazards capital equipment could be underwritten by the HRSA program funds. A "revolving loan" system could then be established where hospitals that demonstrate a commitment to ongoing preparedness programs or improvement criteria would be able to write off the loan.

BASIC PREPAREDNESS FUNDING REQUIREMENTS	
Areas of Preparedness	**Funds Required**
Public health and bioterrorism preparedness grants to states	$950 million annually
Bolstering the public health workforce through the Public Health Workforce Preparedness Act -- with scholarship and loan repayments	$35 million annually for scholarship program $195 million annually for loan repayment program
Bolstering stockpile distribution capabilities	$70 million annually
Modernizing laboratory capabilities	$100 million annually $100 million supplemental for one year new equipment needs
Tracking disease threats, including a "needs and new technology assessment" to result in a modernized, integrated, and standardized system (including integrating with e-medical record initiatives)	$100 million
Medical/Hospital surge capacity grants to states	$1 billion annually *The new funds should be scaled over the next three years to allow states to adapt for planning and use -- $650 million in FY 2006; $850 in FY 2007; and $1 billion in FY 2008.*
Additional federal initiatives, including Cities Readiness Initiative, BioSense, BioShield stockpile contents, E-Medical Records, Integrated Emergency Communications Systems, and pandemic flu planning must be considered in addition to the basic components above.	

Appendix A:

KEY FINDINGS FROM "READY OR NOT" 2003 AND 2004 REPORTS

2004 KEY PROGRESS

- Overall incremental progress in public health emergency preparedness.
- Emergency communications systems improved.
- Dramatic upgrades in public health laboratory biological capabilities, although only one-third of states report sufficient capabilities.
- All states except Alaska have adequate statutory authority to quarantine in response to a bioterrorism attack.

2004 KEY CONCERNS

- Over two-thirds of states and D.C. receive a 6 or lower score on indicators.
- Shifting federal priorities distract from fixing fundamentals; no clear definition or measurable performance standards for bioterrorism preparedness efforts.
- Federal bioterrorism preparedness funding decreased by over $1 million per state.
- One-third of states cut funds to public health programs.
- Insufficient accountability and coordination at the federal, state, and local levels, often due to competition for limited resources.
- Lack of preparation for vaccine and antidote stockpile distribution (only six states have "green" status).
- Stalled upgrades for disease tracking and warning systems.
- Public health workforce on the brink of a "brain drain"; nearly 60 percent of states reported that they do not have adequate lab scientists to test for anthrax or the plague if there were a suspected outbreak.
- Chemical terrorism preparedness lagging; only five public health labs report ability to respond to a chemical threat.
- Radiological and nuclear terrorism preparedness not adequately addressed.
- Two-thirds of states do not use national standards to track disease outbreak information via the Internet, causing serious delays in reporting and rendering rapid or early warning of disease threats difficult.

2003 KEY PROGRESS

- All states have completed initial bioterrorism planning documents.
- Laboratories have increased their biological testing capabilities, including ability to safely package and ship samples to the CDC for testing. The Laboratory Response Network is formed to help support "surge capacity" regional needs.
- Emergency communications networks improved to cover 89 percent of the U.S. population.

2003 KEY CONCERNS

- Forty-two states and D.C. receive a 5 or lower score on indicators.
- Federal focus on healthcare worker smallpox vaccination initiative at the expense of all-hazards and other preparedness activities.
- Cuts to majority of state public health budgets.
- Lack of preparedness for Strategic National Stockpile (only two states have "green" status).
- Concerns over local and state public health official coordination.
- Focus on bioterrorism rather than all-hazards.
- Public health workforce crisis.
- Chemical and radiological response preparedness left out of bioterrorism planning.

Appendix B:

CDC AND HRSA PREPAREDNESS GRANTS BY STATE

BIOTERRORISM FUNDING BY SOURCE AND YEAR								
		FY 2004				FY 2005		
State	CDC	HRSA	Total	State	CDC	HRSA	Total	% Change FY 04–FY 05
Alabama	$12,910,651	$7,762,315	$20,672,966	Alabama	$12,809,991	$7,326,068	$20,136,059	-2.6%
Alaska	$5,205,459	$1,958,803	$7,164,262	Alaska	$5,210,372	$1,484,009	$6,694,381	-6.6%
Arizona	$16,470,314	$9,030,450	$25,500,764	Arizona	$17,067,370	$8,964,023	$26,031,393	2.1%
Arkansas	$9,339,265	$5,077,591	$14,416,856	Arkansas	$9,302,434	$4,633,962	$13,936,396	-3.3%
California	$59,319,441	$38,773,727	$98,093,168	California	$61,339,288	$39,203,268	$100,542,556	2.5%
Colorado	$13,654,314	$7,704,930	$21,359,244	Colorado	$13,937,566	$7,401,669	$21,339,235	-0.1%
Connecticut	$10,828,647	$6,197,207	$17,025,854	Connecticut	$10,801,849	$5,783,087	$16,584,936	-2.6%
Delaware	$5,518,506	$2,205,406	$7,723,912	Delaware	$5,596,144	$1,739,851	$7,335,995	-5.0%
D.C.	$11,985,069	$2,868,302	$14,853,371	D.C.	$11,931,316	$1,854,320	$13,785,636	-7.2%
Florida	$37,583,527	$25,775,967	$63,359,494	Florida	$39,221,056	$26,311,287	$65,532,343	3.4%
Georgia	$21,575,121	$13,719,390	$35,294,511	Georgia	$22,321,610	$13,671,367	$35,992,977	2.0%
Hawaii	$6,384,925	$2,856,721	$9,241,646	Hawaii	$6,381,328	$2,407,137	$8,788,465	-4.9%
Idaho	$6,588,258	$2,998,297	$9,586,555	Idaho	$6,629,932	$2,572,244	$9,202,176	-4.0%
Illinois	$23,718,971	$15,875,995	$39,594,966	Illinois	$24,044,099	$15,578,388	$39,622,487	0.1%
Indiana	$16,262,765	$10,270,929	$26,533,694	Indiana	$16,461,162	$9,896,622	$26,357,784	-0.7%
Iowa	$9,816,873	$5,436,624	$15,253,497	Iowa	$9,725,489	$4,965,024	$14,690,513	-3.7%
Kansas	$9,354,215	$5,088,830	$14,443,045	Kansas	$9,296,532	$4,630,597	$13,927,129	-3.6%
Kentucky	$12,105,282	$7,156,894	$19,262,176	Kentucky	$12,048,544	$6,745,252	$18,793,796	-2.4%
Louisiana	$12,913,581	$7,764,518	$20,678,099	Louisiana	$12,790,121	$7,319,242	$20,109,363	-2.8%
Maine	$6,600,682	$2,943,648	$9,544,330	Maine	$6,606,543	$2,480,391	$9,086,934	-4.8%
Maryland	$14,756,853	$9,150,163	$23,907,016	Maryland	$15,290,917	$8,855,085	$24,146,002	1.0%
Massachusetts	$17,640,158	$10,686,180	$28,326,338	Massachusetts	$17,872,452	$10,256,868	$28,129,320	-0.7%
Michigan	$26,896,854	$16,141,386	$43,038,240	Michigan	$27,105,748	$15,787,720	$42,893,468	-0.3%
Minnesota	$14,701,780	$8,542,551	$23,244,331	Minnesota	$15,003,826	$8,173,336	$23,177,162	-0.3%
Mississippi	$9,671,470	$5,327,321	$14,998,791	Mississippi	$9,608,208	$4,869,883	$14,478,091	-3.5%
Missouri	$15,952,563	$9,530,322	$25,482,885	Missouri	$16,321,799	$9,151,953	$25,473,752	0.0%
Montana	$5,775,627	$2,370,015	$8,145,642	Montana	$5,751,801	$1,891,709	$7,643,510	-6.2%
Nebraska	$7,377,335	$3,602,747	$10,980,082	Nebraska	$7,346,564	$3,137,831	$10,484,395	-4.5%
Nevada	$8,927,588	$4,174,253	$13,101,841	Nevada	$9,267,629	$3,899,038	$13,166,667	0.5%
New Hampshire	$6,465,014	$2,905,650	$9,370,664	New Hampshire	$6,526,889	$2,452,975	$8,979,864	-4.2%
New Jersey	$21,047,364	$13,878,940	$34,926,304	New Jersey	$21,953,336	$13,601,391	$35,554,727	1.8%
New Mexico	$8,803,295	$3,770,553	$12,573,848	New Mexico	$8,810,432	$3,343,195	$12,153,627	-3.3%
New York	$28,493,781	$18,019,873	$46,513,654	New York	$28,293,465	$17,747,875	$46,041,340	-1.0%
North Carolina	$20,433,395	$13,417,400	$33,850,795	North Carolina	$20,547,098	$13,251,044	$33,798,142	-0.2%
North Dakota	$5,223,458	$1,963,221	$7,186,679	North Dakota	$5,193,519	$1,461,290	$6,654,809	-7.4%
Ohio	$27,626,951	$18,234,914	$45,861,865	Ohio	$27,902,321	$17,843,984	$45,746,305	-0.3%
Oklahoma	$10,899,049	$6,250,131	$17,149,180	Oklahoma	$10,840,379	$5,825,603	$16,665,982	-2.8%
Oregon	$10,906,827	$6,255,978	$17,162,805	Oregon	$11,154,657	$5,898,716	$17,053,373	-0.6%
Pennsylvania	$30,735,407	$19,616,940	$50,352,347	Pennsylvania	$30,976,767	$19,254,011	$50,230,778	-0.2%
Rhode Island	$6,048,030	$2,603,466	$8,651,496	Rhode Island	$6,240,298	$2,132,147	$8,372,445	-3.2%
South Carolina	$12,091,813	$7,146,769	$19,238,582	South Carolina	$12,108,891	$6,789,755	$18,898,646	-1.8%
South Dakota	$5,441,461	$2,147,489	$7,588,950	South Dakota	$5,425,710	$1,659,192	$7,084,902	-6.6%
Tennessee	$15,488,192	$9,699,934	$25,188,126	Tennessee	$15,459,458	$9,359,882	$24,819,340	-1.5%
Texas	$51,803,533	$33,338,368	$85,141,901	Texas	$53,589,709	$34,045,388	$87,635,097	2.9%
Utah	$8,501,910	$4,448,125	$12,950,035	Utah	$8,560,504	$4,066,334	$12,626,838	-2.5%
Vermont	$5,198,685	$1,927,552	$7,126,237	Vermont	$5,186,880	$1,438,965	$6,625,845	-7.0%
Virginia	$19,924,893	$11,890,053	$31,814,946	Virginia	$20,475,283	$11,701,905	$32,177,188	1.1%
Washington	$16,978,969	$10,069,141	$27,048,110	Washington	$17,350,613	$9,799,166	$27,149,779	0.4%
West Virginia	$7,540,254	$3,725,218	$11,265,472	West Virginia	$7,498,508	$3,245,672	$10,744,180	-4.6%
Wisconsin	$14,811,846	$9,180,227	$23,992,073	Wisconsin	$14,975,480	$8,799,529	$23,775,009	-0.9%
Wyoming	$4,908,897	$1,747,144	$6,656,041	Wyoming	$4,906,684	$1,260,221	$6,166,905	-7.3%
	CDC Total FY 04	HRSA Total FY 04	Grand Total FY 04		CDC Total FY 05	HRSA Total FY 05	Grand Total FY 05	% Change FY 04 - FY 05
	$849,596,000	$498,000,000	$1,347,596,000		$862,777,000	$470,755,000	$1,333,532,000	-1.0%

Appendix C:

STATE PUBLIC HEALTH BUDGETS

State	FY 2003-2004	03-04 Per Capita	FY 2004-2005	04-05 Per Capita	Percent Change
Alabama	$263,874,918	$58	$309,750,247	$68	17.4%
Alaska[2,3]	$27,460,000	$42	$24,440,600	$37	-11.0%
Arizona	$66,176,300	$12	$87,947,400	$15	32.9%
Arkansas[2]	$137,066,101	$50	$141,082,698	$51	2.9%
California	$1,977,068,000	$55	$2,318,112,000	$65	17.2%
Colorado	$62,749,606	$14	$68,704,761	$15	9.5%
Connecticut	$62,350,408	$18	$71,185,754	$20	14.2%
Delaware[3]	$38,077,000	$46	$29,542,100	$36	-22.4%
District of Columbia	$51,130,000	$92	$54,708,000	$99	7.0%
Florida	$546,301,660	$31	$597,539,043	$34	9.4%
Georgia[2]	$764,410,575	$87	$709,400,466	$80	-7.2%
Hawaii[3]	$146,658,458	$116	$155,458,776	$123	6.0%
Idaho	$103,517,200	$74	$103,485,100	$74	0.0%
Illinois	$305,885,200	$24	$310,415,600	$24	1.5%
Indiana	$70,394,726	$11	$70,394,726	$11	0.0%
Iowa[3]	$23,009,278	$8	$23,267,142	$8	1.1%
Kansas[2]	$31,032,839	$11	$31,396,513	$11	1.2%
Kentucky	$150,997,334	$36	$146,613,334	$35	-2.9%
Lousiana[5]	$1,554,623,990	$344	$1,667,664,478	$369	7.3%
Maine[6]	$9,134,083	$7	$9,277,644	$7	1.6%
Maryland[3]	$196,101,000	$35	$200,162,000	$36	2.1%
Massachusetts[6]	$145,068,742	$23	$126,209,229	$20	-13.0%
Michigan[3]	$260,520,800	$26	$258,028,300	$26	-1.0%
Minnesota	$211,365,000	$41	$243,993,000	$48	15.4%
Mississippi[3,6]	$29,891,091	$10	$29,062,469	$10	-2.8%
Missouri	$46,379,417	$8	$45,943,007	$8	-0.9%
Montana	$19,177,739	$21	$19,459,374	$21	1.5%
Nebraska	$92,302,622	$53	$104,344,393	$60	13.0%
Nevada	$9,211,727	$4	$8,774,904	$4	-4.7%
New Hampshire	$27,851,173	$21	$28,186,104	$22	1.2%
New Jersey	$192,505,000	$22	$250,592,000	$29	30.2%
New Mexico	$119,025,200	$63	$120,003,800	$63	0.8%
New York[1,3]	$6,893,949,000	$359	$7,413,923,000	$386	7.5%
North Carolina	$109,533,752	$13	$116,310,280	$14	6.2%
North Dakota[4]	$23,966,248	$19	$29,494,441	$23	23.1%
Ohio	$120,769,810	$11	$124,279,084	$11	2.9%
Oklahoma[2]	$217,406,000	$62	$226,720,000	$64	4.3%
Oregon[4]	$78,467,577	$11	$65,173,871	$9	-16.9%
Pennsylvania	$353,345,000	$28	$363,108,000	$29	2.8%
Rhode Island	$39,653,794	$37	$40,109,206	$37	1.1%
South Carolina	$153,222,425	$36	$163,119,348	$39	6.5%
South Dakota	$14,208,093	$18	$15,449,514	$20	8.7%
Tennessee	$155,155,000	$26	$183,829,600	$31	18.5%
Texas[2]	$314,345,633	$14	$305,545,630	$14	-2.8%
Utah[2]	$95,238,400	$40	$98,805,900	$41	3.7%
Vermont[2]	$30,840,397	$50	$37,555,659	$60	21.8%
Virginia	$239,569,484	$32	$250,703,431	$34	4.6%
Washington[4]	$332,260,043	$27	$371,845,528	$30	11.9%
West Virginia[2]	$90,847,462	$50	$114,883,938	$63	26.5%
Wisconsin[3,6]	$34,725,400	$6	$34,356,000	$6	-1.1%
Wyoming	$41,435,399	$82	$45,408,089	$90	9.6%

1 Includes state share of Medicaid, CHIP, and/or other social service programs.
2 Includes some social service programs, but not Medicaid or CHIP.
3 Only state's general fund used.
4 Biennium budget: 2001-2003 & 2003-2005 biennium displayed and used for percent change calculation. Per Capita based on one year's funding only.
5 Includes mental health, developmental disabilities, and/or addiction treatment in funding to local health departments.
6 Taken from appropriations bills rather than detailed budget documents. May include more or less detail than other states.

Methodology for State Public Health Budgets

Between June and September of 2005, TFAH conducted analyses of state public health budgets for the last two fiscal years 2003-2004 and 2004-2005. For those states with biennium budgets, the 2001-2003 and 2003-2005 periods are displayed and used for percent change purposes.

Source documents include (1) publicly available executive budget documents that list actual expenditures, estimated expenditures, or final appropriations; (2) appropriations bills enacted by the state's legislature; (3) documents from legislative analysis offices; or (4) other budget documents from various state agencies.

In response to feedback received from previous editions of TFAH's Ready or Not report, TFAH defined "public health" to broadly include all health spending with the exception of Medicaid, CHIP, and/or comparable health coverage programs for low-income residents. Mental health funds, services related to developmental disabilities or severely disabled persons, WIC funds, and/or state-sponsored pharmaceutical programs also were not included. In a few cases, state budget documents did not allow these – or other similar human services – programs to be disaggregated; these exceptions are noted. For most states, all state funding – regardless of general revenue or dedicated funds – was used. In some cases, only general revenue funds were used in order to separate out federal funds; these exceptions are also noted.

Since each state allocates and reports its budget in a unique way, comparisons across states are obviously difficult. This methodology may include or not include programs that the state may consider a public health function, but the methodology used was selected to maximize the ability to be consistent across states. Despite these differences, TFAH also computed per capita spending figures; total state spending was divided by the U.S. Census Bureau's July 2004 state population estimate. For those states with biennium budgets, half of the total was used in the calculation. These calculations are meant simply as an estimate of per-person state spending.

Appendix D:

HOLDING GOVERNMENT ACCOUNTABLE -- NATIONAL PREPAREDNESS GOALS (NPG)

In Spring 2005, HHS released preliminary performance objectives for "six priority areas for national readiness" for which it has lead agency authority. These areas include: **(1) Emergency Ready Public Health Departments, (2) Emergency Ready Healthcare Entities, (3) Stockpiling of Medical Countermeasures to Support Public Health and Emergency Response, (4) Protection of Critical Infrastructure for Public Health and Healthcare Emergency Response, (5) Defense of the U.S. Food Supply, and (6) National Biosurveillance.**[94]

As of October 2005, only goals and measures for the first two areas were available on the agency's Web site. The rest are listed as "under development." More information is available at <http://www.hhs.gov/ophep /npgs.html>.

Emergency Ready Public Health Departments. HHS lists six performance goals for this area (one is still under development):

- ***Emergency Case Reports.*** Health departments should be able to receive case reports around the clock and act on them accordingly. Performance measures include the number and percentage of departments demonstrating different levels of readiness for between 15 minutes and three hours after an event.
- ***Risk Communications to Public.*** Health departments should be able to communicate with the public within four hours of an event. Performance measures include the number and percentage of departments using pre-written, culturally appropriate, multilingual materials; the existence of community health leaders prepared to speak to the health situation; and whether a hotline is set up within an hour.
- ***Acquisition of Samples.*** Health departments must be able to take necessary samples within four hours of an event and send them to a laboratory within an hour of the initial sampling. Performance measures include the number and percentage of departments demonstrating different abilities to test for specific agents (such as biological or chemical) in between one to six hours.
- ***Laboratory Support.*** Health departments are responsible for around-the-clock laboratory facilities, including surge facilities in case of an event. Performance measures include the number and percentage of departments that have at least one lab that can perform biological, chemical, or food tests at any hour on any day.
- ***Mass Prophylaxis.*** Health departments must organize and direct necessary prophylaxis campaigns. Performance measures include the number and percentage of departments that can vaccinate those who come in contact with smallpox within three days and the rest of the community in 10; and the ability to deliver countermeasures to a bioterrorism attack to those affected and the entire community within 48 hours of deciding to do so.
- ***Provisional Resources.*** Under development.

Emergency Ready Healthcare Entities. HHS lists six performance goals for this area:

- ***Staffed Surge Beds.*** Healthcare providers must provide for at least triage and initial stabilization within three hours of an event on a sliding scale of populations depending on the event, such as 500 cases per million for an acute infectious disease like smallpox or SARS. Performance measures include the number of staffed beds statewide or within each major metropolitan area or other state region three hours after an event and within a 24-hour period. Goals and measures depend on the type of event.

- ***Isolation Capacity.*** Hospitals must be able to isolate in negative pressure at least one suspected case of disease or patients with "symptoms of concern." At least one regional healthcare facility must be able to support at least 10 adult and pediatric patients in negative pressure isolation within three hours of an event. Performance measures include the number of participating hospitals by region and state that can either diagnose and stabilize or continue to care for exposed patients.

- ***Volunteer Healthcare Professions.*** Develop a system to organize registration and credentialing of necessary additional clinicians in advance of an event. Performance measures include the number of volunteer healthcare professionals enrolled, the number of doctors and RNs by type, and behavioral healthcare professionals by type.

- ***High-Risk Scenarios.*** For each area of a state or the entire state, determine possible high-risk scenarios that are community-specific and determine the nature and extent of patient surge. Performance measures include number and percentage of areas completing the exercise.

- ***Vulnerability Analyses and Protection of Critical Infrastructure.*** For each health care facility, identify likely events that could adversely affect quality, capacity, and continuity of healthcare operations and develop plans to address them. Performance measures include number and percentage of facilities having done so.

- ***Patient Transport.*** Establish localized systems for transporting patients from incident site or from local hospitals to facilities in adjacent jurisdictions, temporary facilities, or to nearby airports for transport to facilities further away. Performance measures include number and percentage of areas that have a patient transportation plan developed.

Appendix E:

METHODOLOGY OF APIC/TFAH SURVEY

The data for indicators six through 10 are from a survey conducted in the summer of 2005 by TFAH and the Association of Professionals in Infection Control and Epidemiology (APIC). APIC is a multi-disciplinary voluntary international organization with over 10,000 members based in Washington, D.C. APIC members were asked to complete a questionnaire during the association's annual meeting in June 2005 in Baltimore, MD. In order to accommodate members who did not attend the meeting, the questions were also posted online on the survey-hosting Web site, www.surveymonkey.com. A total of 1,891 responses were received by APIC: 963 were completed during the annual meeting and 928 responses were submitted via the Internet. Data were reviewed and responses with completed, but unidentifiable or multiple state names were dropped from the sample yielding a total of 1,878 responses. Data were analyzed using Statistical Analysis Software (SAS Institute, Cary, North Carolina, USA). Values for state and hospital size responses were cross-classified with values of all other responses to establish frequency distribution by state, by hospital size, and by state and hospital size.

While these data provide important information, the collection methods limit analysis in several ways. It is possible that some respondents provided information about the same hospital, thereby possibly decreasing data validity and reducing sample size. Additionally, it remains unclear whether the emergency preparedness status of the hospitals whose APIC members chose not to respond to this survey differ in any significant way from that of the hospitals represented in this survey. Finally, some states had significantly fewer respondents than others. While the number of respondents in each state appears roughly proportionate to the number of hospitals in each state, data reliability is nonetheless higher for states with a larger sample size. Responses from survey participants who felt they did not know the answer to particular questions were not included.

About the Association for Professionals in Infection Control and Epidemiology (APIC)

APIC's purpose is to influence, support, and improve the quality of healthcare through the practice and management of infection control and the application of epidemiology in all health settings. The organization is led by an elected board of directors who volunteer their time and expertise.

The organization began in 1972 as the Association for Practitioners in Infection Control. It was conceived out of the need for an organized, systematic approach to the "control" of infections acquired as a result of hospitalization. The name was changed to the Association for Professionals in Infection Control and Epidemiology, Inc. (APIC), in 1994 to recognize the organization's maturation and evolution into the broader context of healthcare delivery in this country, which includes the study of non-infectious adverse outcomes and the movement of care outside the traditional healthcare system, specifically the hospital.[95]

Endnotes

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