

SECTION 1

Government and Public Health Emergencies

CHAPTER 2

Government Capacity: Federal, State, and Local Agencies and Responsibilities

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INTRODUCTION

The public health community, ranging from local, state, and federal levels of government, responds to a multitude of emergency events, both natural and human-made. Public health emergencies in recent memory have encompassed such natural incidents as disease outbreaks—for example, the H1N1 flu outbreak in 2009, the emergence of West Nile virus in the eastern United States in 1999, and the severe acute respiratory syndrome (SARS) outbreak in Asia in 2003—or environmental catastrophes like that seen during Hurricane Katrina in 2005. Human-made incidents that present public health emergencies can be either intentional (e.g., the Japanese subway Sarin incident of 1995) or unintentional (e.g., the massive power blackout in the northeastern United States in 2003).

While local and state officials deal with most public health emergencies initially, federal involvement is almost certain when the crisis is severe in scope. Legal authority for intervention in public health emergencies is left to the states and their localities under the Tenth Amendment to the U.S. Constitution. However, federal involvement in the day-to-day function of public health can be established through the Commerce Clause of the Constitution. Under these auspices, the federal government can engage in regulation of food security through the U.S. Department of Agriculture, air and water purity through the Environmental Protection Agency (EPA), pharmaceutical safety through the Food and Drug Administration (FDA), and many other spheres of influence.

Case Study

The immediate phase of any acute public health emergency (from the sentinel event up to the first 2 hours) requires first responders from the local community.² Consider, for instance, the attacks on the World Trade Center on September 11, 2001. The first few minutes of the crisis were marked by an overwhelming number of calls to the local 911 system. Immediate emergency response began with private firms and individuals already present within One World Trade Center (the North Tower). The first organized leadership on scene was the Fire Department of New York (FDNY) Battalion Chief, who arrived within 6 minutes of the crash of the first aircraft.³ During the immediate phase, local incident command systems assumed authority for the developing crisis.

The intermediate phase (first 2 to 12 hours) of the response to a public health emergency remains the purview of local and perhaps state officials.⁴ Toward the end of this phase, emergency response priorities should shift toward accepting and coordinating federal assistance. In the hours after the World Trade Center collapse, emergency response personnel from the Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services (DHHS) arrived on the scene, to the welcome relief of local officials.⁵

The third phase of an acute public health emergency is termed the extended phase and represents all events after 12 hours.⁶ If the emergency is not contained and the emergency response concluding, preparations for extended federal operations occur at this time. Clearly, a large federal effort continued for months following the tragedy at the World Trade Center. Made immediately available was assistance from the CDC.⁷ CDC personnel assisted with injury and disease surveillance, capacity assessment, emergency coordination, and provision of supplies. Later, the EPA undertook a significant public health action by declaring that air and water quality were suitable for individuals to return to New York's Financial District.⁸ Many federal agencies may share a role during this extended phase of an emergency response.

Each of these phases involves federal, state, and local agencies in various roles and responsibilities. This chapter provides an overview of components of these roles by jurisdiction in responding to a public health emergency.

FEDERAL PREPAREDNESS AND RESPONSE

The federal government's role does not merely exist in the hours and days after a public health emergency occurs. According to the Institute of Medicine (IOM), the federal government fills six major roles in public health: (1) policy, (2) finance, (3) public health protection, (4) information gathering and dissemination, (5) capacity building, and (6) direct patient healthcare services.

Policy

The policy basis for public health derives from public health law; the vast majority of laws dealing with issues such as quarantine, disease reporting, or other aspects of public health are formulated at the state level. However, certain areas of law and regulation, including air and water purity, come from federal actions. Unfortunately, as many authorities have suggested, many public health laws are antiquated.⁹ Multiple attempts aimed at modernizing these laws have been made, including the work of the Turning Point Initiative¹⁰ and the Model State Emergency Health Powers Act.¹¹ At present, 38 states and the District of Columbia have enacted 66 bills or resolutions containing provisions of the Model State Emergency Health Powers Act. Continued action is necessary for the modernization of public health law.

Finance

In contrast to the perpetually cash-strapped state governments, the federal government possesses considerable resources to fund public health initiatives and to absorb the costs of mitigation and recovery from major public health emergencies. To demonstrate these disparate financial capacities, compare state and local budgets for public health with that of the federal government. It has been estimated that the average budget of state and local public health agencies was \$6.9 million in recent years (based on some jurisdictions reporting data for fiscal year 2004, and others for fiscal year 2005).¹² This amounts to an average annual per capita expenditure for public health of \$41. By comparison, federal funding for the public health components of the DHHS during fiscal year 2002 amounted to \$41 billion, nearly \$137 per capita.¹³

Public Health Protection

The federal responsibility for protecting the public's health comprises three major components: disease surveillance, maintenance of a national collective of laboratories,

and management of threats. There currently exist multiple mechanisms by which the federal government monitors the prevalence and incidence of disease in the United States. The CDC maintains most of these disease surveillance networks, whose inputs come from data derived at the state or local level.

The Health Alert Network (HAN) is designed for two-way communication between the federal government and local agencies.¹⁴ Currently, it transmits health alerts, health updates, and health advisories to more than 1 million recipients. Project BioSense, another CDC initiative, scans hospital emergency department and pharmacy data, thereby attempting to uncover diseases based on symptom patterns.¹⁵ Uploads to the database are now electronic and occur as frequently as every 15 minutes.¹⁶ While BioSense is intended to help detect spikes in disease incidence, it is no substitute for astute clinicians and, in fact, is dependent on physician diagnoses. However, because individuals who are affected by a public health emergency (consider the sporadic *Salmonella* outbreaks as examples) may not all present to the same healthcare provider, Project BioSense can help discover potential disease outbreaks spread across providers within a specific community.

These surveillance systems illustrate the fragmentation of the public health information network. To overcome this problem, the CDC is integrating these and other diverse monitoring systems into a single Public Health Information Network by utilizing the National Electronic Disease Surveillance System.^{17,18} The CDC also operates the Epidemic Intelligence Exchange (Epi-X), which serves as a means of collaboration and intellectual exchange for public health providers at the local level.¹⁹

Additionally, the federal government assumes limited responsibility for emergency preparedness training for first responders and public health agents. Once a public health emergency has been identified, whether it is a natural event such as a disease outbreak or a human-made threat such as terrorism, the public health response becomes critical. Federal means by which emergencies may be mitigated are multiple and multidisciplinary. Under the disaster medical system, when a public health emergency arises, various health professionals from across the nation become temporary federal employees and can be deployed to the site of an incident.²⁰ Disaster Medical Assistance Teams (DMATs) include both medical professionals and paraprofessionals; a recent count identified 26 such teams, with formation of an additional 20 groups planned.²¹ DMATs bring with them supplies sufficient to sustain a 72-hour mission.

Five national veterinary response teams, including veterinarians, technicians, pathologists, and other skilled staff, are available for deployment in the event that animals, either wild or domesticated, are involved in a public health emergency incident.²² Ten regional mortuary response teams are available for situations in which casualties are

expected to overwhelm local capabilities.²³ These teams can travel with completely portable morgues and assist with the recovery, identification, and burial of victims.

Additional response teams comprising the specialties of nursing and pharmacy are in development.²⁴ A strategic national stockpile (SNS) of pharmaceuticals and medical supplies is already available during public health emergencies, at the simple request of a state's governor.²⁵ Authorized in the Public Health Service Act, the SNS is designed to supplement and resupply local and state resources in the United States and its territories within a 12-hour time frame. The national stockpile also allows secondary pharmaceutical delivery, with medications being shipped directly from manufacturers if an initial stockpile package is insufficient to cover need.²⁶ Additional federal resources for protecting and preserving the public's health can be obtained from the U.S. Public Health Service Commissioned Officer Corps, a branch of the Uniformed Services capable of providing immediate relief and support for clinical, epidemiological, and mental health needs.²⁷

Information Gathering and Dissemination

As described previously, the capacity of the federal government to collect and disseminate information rests mostly with the CDC. Through the HAN, Project BioSense, Epidemic Intelligence Exchange, the National Electronic Disease Surveillance System, and the Public Health Information Network, CDC is able, with certain limitations, to derive information from, and deliver critical information to, both state and local health agencies. At a practical level, the capacity at the local level tends to be the limiting factor in this communication process. There are at least 90,000 units of local government that require access to important information so that they can help quell outbreaks and other types of emergencies.²⁸ Many of these jurisdictions are relatively resource poor. Thus the ability of the federal government to improve the capacity of local governments to communicate and act remains paramount.

Capacity Building

The federal government's role with capacity building begins with individual providers and extends to hospitals and entire communities. Given that many public health officials are political appointees, their tenures in such positions are often limited. Therefore, intellectual capital is perpetually turning over and occasionally lost. The State Health Leadership Initiative, a program funded by the Robert Wood Johnson Foundation and operated by the National Governors Association, attempts to provide

leadership skills to senior-level state health officials.²⁹ These skills are critical when a public health emergency arises.

At the institutional level, the Hospital Preparedness Program, which was established in 2002, keeps these community resources alert and prepared for natural and human-made disasters.³⁰ This prudently designed initiative fulfills a critical role because the initial waves of any emergency (as exemplified in the World Trade Center attacks) are likely to be felt at the local level first. The Cities Readiness Initiative is another CDC program geared toward ensuring that entire cities and towns are prepared to deliver medicines and medical supplies in the event of a public health emergency.^{31,32} As of 2010, the program currently has 72 participating cities, and at least one site in each state (<http://www.bt.cdc.gov/cri/>).

The federal role for capacity building is, of course, limited by annual funding by Congress and the commitment of the executive branch in extending these appropriations to local public health agencies. Nevertheless, the hard-learned lessons of September 11, 2001 support the need for improved public health information and mitigation capacity.

Direct Services

The federal government maintains a limited role in the direct delivery of healthcare services. The bulk of direct healthcare services provided under the auspices of public health are typically relegated to the jurisdiction of states and local public health authorities.

Roles of Federal Agencies

In addition to DHHS, many different federal agencies or subagencies are available for response to a public health emergency. The Department of Homeland Security will most likely be involved if a human-made or terrorist activity is suspected. If a radiological agent is suspected to be present, response by the Department of Energy might be necessary to mitigate exposure and ensure adequate disposal of agents. Likewise, the Department of Justice, including the Federal Bureau of Investigation (FBI), may become involved in a federal law enforcement response. The EPA and U.S. Coast Guard may be needed for emergencies involving the air or water supply. The FDA and U.S. Department of Agriculture might take an active role in public health emergencies involving food or pharmaceutical supplies.

The CDC plays an important function specifically in the public health response to emergencies. The U.S. Congress authorized funding in 2002 for the Public Health Emergency Preparedness (PHEP) cooperative agreement to support public health pre-

paredness in public health departments in all state, local, tribal, and territorial areas.³³ The CDC provides technical expertise for disease detection and investigation, public health laboratories, and response, including crisis communication. Utilizing well-established CDC relationships with regional public health departments is critical to the success of the PHEP. The CDC has established nine goals within the pre-event, event, and post-event phases of public health emergencies to facilitate coordination and response among various jurisdictions (see Table 2-1).

TABLE 2-1 CDC Goals During Public Health Emergencies

		Prevent
Pre-event	Goal 1	Increase the use and development of interventions known to prevent human illness from chemical, biological, and radiological agents, and from naturally occurring health threats.
		Detect and Report
	Goal 2	Decrease the time needed to classify health events as terrorism or naturally occurring in partnership with other agencies.
	Goal 3	Decrease the time needed to detect and report chemical, biological, or radiological agents in tissue, food, or environmental samples that cause threats to the public health.
	Goal 4	Improve the timeliness and accuracy of communications regarding threats to the public's health.
Event		Investigate
	Goal 5	Decrease the time to identify causes, risk factors, and appropriate interventions for those affected by threats to the public's health.
		Control
	Goal 6	Decrease the time needed to provide countermeasures and health guidance to those affected by threats to the public health.
		Recover
	Goal 7	Decrease the time needed to restore health services and environmental safety to pre-event levels.
	Goal 8	Improve the long-term follow-up provided to those affected by threats to the public's health.
Post-event		Improve
	Goal 9	Decrease the time needed to implement recommendations from after-action reports following threats to the public's health.

Source: Centers for Disease Control and Prevention. Public health preparedness: Mobilizing state by state. Available at: <http://www.bt.cdc.gov/publications/feb08phprep/background.asp>. Accessed December 15, 2009.

The difficulty with having multiple agencies with different priorities and cultures interacting at a time of crisis can be a lack of unified leadership. It is important that personnel from multiple federal agencies cooperate as well as engage in frequent, quality communication to ensure seamless interaction during a public health emergency.

STATE PREPAREDNESS AND RESPONSE

While the federal government does provide the infrastructure that coordinates activities across state and local governments, day-to-day operations remain mainly under the jurisdiction of state and local governments.³⁴ States receive funds from a cooperative agreement between the CDC's Public Health Response and Preparedness for Bioterrorism Program and the Health Resources Services Administration's National Hospital Bioterrorism Preparedness Program.³⁵ Only a few local jurisdictions—large jurisdictions such as New York City, Chicago, Los Angeles, and Washington, D.C.—receive direct federal dollars. In most cases, funding trickles down to the local level through state agencies.

Organization of State Response

A state's public health response organizational structure can be centralized, decentralized, or a mixture of both approaches. In a centralized structure, the state has direct oversight over the local public health agencies. In a decentralized structure, the state employs a more loose oversight, with the primary responsibility for public health decisions being handled by local jurisdictions. There is no clear consensus as to whether one approach works better in terms of the effectiveness of the public health response.³⁶ Some argue that a decentralized approach allows for better coordination between local jurisdictions, hospitals, and emergency medical responders. Others suggest that a centralized approach allows for better coordination in case of mass-casualty events that require statewide efforts to respond to sudden surges in capacity.

Although a state's role in a public health emergency may vary depending on whether there is a centralized or decentralized system in place, some distinct responsibilities generally are assigned at the state level. States can request that a public health crisis be declared a national emergency in the event that a major disaster overwhelms state and local capabilities and, in turn, poses a major public health threat to the affected community. Such a declaration can trigger support from federal agencies, such as the Federal Emergency Management Agency (FEMA), which can in turn provide states with needed support services and disaster relief funds. Federal agencies can also assist states through provision of surge support (such as through staffing provided

by Medical Reserve Corps), patient evacuation, staffing of incident response coordination teams, and human support services.³⁷

Governors also have the power to make use of the national pharmaceutical stockpile. In the event that an emergency causes a local or state pharmaceutical supply to be expended, local jurisdictions can appeal to a governor (or the mayor, in the case of Washington, D.C.) to ask the CDC to deploy the SNS for supplemental supply. Because state and local responses are often overlapping, depending on the individual jurisdictions, the state response will be discussed in more detail in context with the local response. For example, in some large cities, the primary public health response may actually occur at the city level. In other areas, these same responsibilities may instead be handled by the state agency.

LOCAL PREPAREDNESS AND RESPONSE

Although many strategic decisions to respond to a public health emergency are made on a federal level, it is at the local level that the response is implemented. Local jurisdictions are at the front line for identifying and carrying out federal implementation plans. Within local jurisdictions, many organizations are responsible for a unified public health response. In coordination with state and local public health agencies, local level response also involves emergency medical services (EMS), hospitals, law enforcement agencies, fire departments, and hospital associations as well as providers and local chapters of nonprofit disaster relief organizations, such as the Red Cross.

At the local level, there are several layers of response to a public health emergency. Although this response varies depending on the type of threat, in general it incorporates a number of key elements. Key components of public health preparedness include hazard analysis, emergency response planning, health surveillance, laboratory analysis, and consequence management.³⁸

Hazard Analysis

Hazard analysis involves assessing which particular public health emergencies are most likely to occur within the community. This effort may involve identification of potential physical threats that exist in a community, such as the presence of nuclear plants, as well as formulation of a theoretical response to such threats based on the potential consequences. Local municipalities should also analyze their capacity to deal with such hazards, such as institutional capacity (beds, staff, pharmaceutical supply), surge capacity, and availability and analysis of existing disaster response plans.

Advance Response Planning

Advance response planning involves coordination of a number of agencies to develop a viable plan well ahead of any actual threat. Local public health agencies must engage with hospitals, emergency medical responders, law enforcement, fire, volunteer agencies (such as the Red Cross), and community-based organizations. Because the threat will always start locally, such agencies are at the forefront of ensuring that any needed state or federal resources be secured in an appropriate and timely manner. Although often a plan may exist within an individual institution, it should also provide a mechanism for cross-organizational coordination and linkages.

An effective preparedness plan should meet a number of goals. One such goal is a plan for adjustment for local surge. According to the U.S. Office of Inspector General, components necessary to deal with a medical surge include the ability to coordinate among various parties, supply of needed personnel through volunteer medical staff recruitment, supply of additional equipment resources, development of alternative sites of care and triage, and patient care guidelines. In developing an advance plan to address such a medical surge, localities should include a process to protect any medical volunteers involved in the surge from any subsequent legal action. Also, a system should be in place to help ease identification of available beds should the need for alternative care-delivery sites arise.³⁹

A preparedness plan should also include an operational plan that can be adjusted to meet a variety of public health emergencies. This plan should delineate on-scene roles and responsibilities, recruitment of needed volunteers, and a system for communication with the public.⁴⁰ In addition, advance planning should include a mechanism to train first responders on their roles and responsibilities in the event of an emergency through periodic drills and updates. Such training should involve all levels of staff at a given institution.

Surveillance

Health surveillance is also a key function of the local public health agency. One of the earliest steps in local response is monitoring when a threat has occurred through an adequate surveillance system. This surveillance is particularly important for biologic terrorism events and infectious disease outbreaks; in both of these situations, there is likely to be a lag time between presentation of an initial case and recognition that a public health emergency is in progress. Surveillance is an active process that includes collection of specimens, analysis of those specimens, and interpretation of the results so that they can be used effectively in public health practice. Surveillance also encompasses a number of important public health functions, including determination of the

extent of a public health emergency, recognition of the geographic magnitude of the emergency, detection of impending epidemics, evaluation of treatment and control measures, and facilitation of planning and research.⁴¹

Surveillance systems are categorized as being either passive, active, sentinel, or special systems. Passive reporting refers to the process in which an individual provider or hospital reports cases of a targeted disease of interest to a local or state public health agency, usually through a standardized form. For example, states use this approach for identifying sexually transmitted infections. Passive reporting is perhaps the simplest form of reporting, but has two distinct disadvantages: delays in reporting and underreporting, both of which occur because the system is often dependent on the individual provider or laboratory.⁴²

Active surveillance involves outreach by phone or in person from public health officials to laboratories, hospitals, or providers, encouraging them to more closely track a disease of interest. Active surveillance is more timely and requires more resource expenditures on the part of the public health department that initiates the surveillance. The CDC has a number of surveillance programs in place, as described earlier, for local and state use in surveillance.

Sentinel surveillance evaluates a sample of the population to study trends in disease, such as microbial resistance for certain bacteria. This type of surveillance has the disadvantage that findings may not be generalizable to the larger population if a nonrepresentative sample is selected. Finally, other special systems may be set up to evaluate a public health emergency.⁴²

An effective health information technology (HIT) infrastructure is crucial for effective surveillance. This infrastructure not only helps facilitate real-time data collection efforts at the local level, but also assists in rapid identification of an emerging public health threat at the federal level. The Institute of Medicine has called for establishment of a national health information infrastructure, which would link local and state public health agencies with federal components such as the CDC or other subagencies within DHHS. A true national health information infrastructure could also facilitate real-time reporting of individual-level cases in the population that could provide an early alert of an emerging public health illness, thereby extending the reach of disease surveillance into individual physicians' offices. Evidence already demonstrates the effectiveness of electronic reporting over traditional reporting. When a move from paper to electronic passive reporting occurs for disease surveillance, the delay decreases dramatically—falling from 35 days down to a single day.⁴³

In a survey of local health departments around the time of the 2001 anthrax attacks, a mere 50 percent had full time Internet access. Approximately 20 percent of these departments had email access.⁴⁴ These data stress the fact that communication

to and from the local and federal levels was compromised at the time of this major public health emergency.

Laboratory Analysis

Going hand-in-hand with adequate surveillance is the presence of a strong lab analysis component. Often lab analysis is a responsibility shared at both the local and state levels. A local jurisdiction may initially process lab specimens; however, in cases requiring specialized analysis, such jurisdictions may have to forward specimens to special statewide labs with expertise in a given area. Labs are often characterized as belonging at one of four levels:

- At the most basic level, a local lab may perform the first level of analysis—namely, general specimen characterization (e.g., a hospital lab’s characterization of the H1N1 virus as influenza A).
- The second level involves more specific identification of an organism (e.g., local public health lab serotyping).
- Third-level labs can perform susceptibility testing (often state-specific labs).
- The most sophisticated labs exist at the federal level (the CDC and other federal labs such as the Department of Defense in the event of surge); they perform high-level analysis and help coordinate identification of threats across jurisdictions.⁴⁵

Consequence Management

Once a public health emergency is identified through an effective surveillance system and the threat is characterized through laboratory analysis, the next stage of the public health response is consequence management. Consequence management encompasses a number of activities targeted at controlling a public health emergency and limiting any negative consequences associated with it. For example, it may include quarantining persons who are exposed to any disease with the potential for spread as well as the provision of treatment and vaccinations as needed. Such consequence management also involves federal-, state-, and local-level involvement. For example, although quarantine is usually initiated by a local authority, federal oversight is often involved when interstate travel is involved or if a local authority is unable to provide adequate control.⁴⁶

In the provision of treatment and vaccinations, it is often critical that hospitals and local-level responders work together to pool needed resources and direct them to

the areas of greatest need. Many hospitals and local agencies have established formal protocols and agreements to facilitate pooling of resources, thereby ensuring that the needed resources are made available quickly. Pharmaceuticals are one of the most common areas where resources are shared (such as through the national pharmaceutical stockpile system).⁴⁷ In addition to having an adequate supply, an organized system for distributing pharmaceuticals—or, in the case of H1N1, vaccines—should be in place in advance of any active public health threat. This plan should not only outline the operational details of how such medications or vaccines will be tracked, stored, and transported, but also specify which priority populations will receive the medications or vaccines and describe how to deal with vulnerable populations who may not have ready access to receipt of the medications.⁴⁸

Risk communication is another critical function that should be addressed early in the consequence management phase and, as discussed, should be covered in any advance plan. Because public health emergencies often involve a great deal of uncertainty on the public's part, which might potentially lead to confusion and panic, having an effective risk communication strategy in place early is paramount.⁴⁹ Communication should take into consideration the needs of vulnerable populations and persons from diverse backgrounds (e.g., any messages should be made available in a number of languages and formats).

MITIGATION

Coordination across federal, state, and local jurisdictions is essential for preparing and responding to a public health emergency. This coordination of interactions may also be the most effective method to mitigate against the potential impacts of a large-scale public health crisis. In reality, the role of government in both routine public health and public health emergencies is a shared responsibility between all levels of government: local, state, and federal (see Table 2-2). By linking federal funding to specific state responsibilities (e.g., setting a minimum drinking age for alcoholic beverages), the federal government can influence public health policies in creative ways.⁵⁰ Such coordination efforts exist across all levels of response to a public health emergency, including coordination among response plans, in the surveillance and laboratory analysis period, in consequence management, and as part of risk communication.

In the case of the H1N1 outbreak of 2009, this coordination extended to the international realm, where surveillance across countries was critical. At the national level, the CDC was active in issuing surveillance and vaccination guidelines for local and state agencies and in coordinating broad public health education initiatives. The state or local

TABLE 2-2 Role of Federal, State, and Local Agencies in Public Health Emergencies

	Federal Agencies	State Agencies	Local Agencies
Planning	<p>Guidance to state and local jurisdictions on development of an emergency response plan</p> <p>Advance planning through programs such as the City Readiness Initiative</p>	<p>Development of statewide response plan</p> <p>Coordination of plans across local jurisdictions</p>	<p>Development of response plan for local jurisdictions (e.g., hospitals, public health departments)</p> <p>Coordination of plans across individual institutions and agencies</p>
Surveillance	<p>Operation of the National Electronic Disease Surveillance System</p> <p>Operation of Epidemic Intelligence Exchange (Epi-X)</p> <p>Special lab analysis, coordination of laboratory results across state and local jurisdictions</p>	<p>Lab analysis for specific serotyping</p> <p>Identification of impending threats across individual local jurisdictions through evaluation of trends or spikes in diagnoses (e.g., hospital flu cases)</p>	<p>Identification and diagnoses of public health emergencies (by first responders, providers)</p> <p>Submission of data about impending diagnoses through an effective health information technology infrastructure</p> <p>Initial general lab analysis; submission of specimens to local or state public health agencies</p>
Consequence management	<p>Development of guidelines for states</p> <p>Response to state declaration of federal emergency with supplies, man personnel for medical surge</p> <p>Coordination among states to assist with quarantine/containment within borders</p> <p>Coordination of pharmaceutical stockpile for collection of vaccines or medications, delivery of stockpile medications to state and local jurisdictions</p> <p>Preparation of guidelines for receipt of medications or vaccines</p> <p>Preparation for materials for risk communication</p>	<p>Preparation of a plan for local distribution of medications or vaccines</p> <p>Declaration of a federal emergency with subsequent activation of federal aid when needed (e.g., request for the National Guard or disaster assistance management team support)</p> <p>Activation of the national stockpile plan when local and state pharmaceutical resources are insufficient</p>	<p>Identification of populations at greatest need for treatment and vaccination</p> <p>Dissemination of medication or vaccines to at-need populations</p> <p>Containment measures to help prevent spread of illness (e.g., masks in local emergency departments)</p> <p>Tailoring of risk communication educational materials to specific populations within a locality</p>

agencies then had to initiate distribution of flu vaccines, coordinate with providers for receipt of the vaccine supply, and initiate local provider agreements related to this supply.

CONCLUSION

The major area of need currently present for most local and state agencies is strengthening the public health infrastructure and community preparedness for mounting a response to an emergency. The federal government plays a key role, through its leadership and financing roles, in achieving these goals. Also, reformation of antiquated public health law remains necessary. However, the bulk of these activities fall within the purview of the states.

The challenges for the federal government include adequately supporting local efforts while avoiding overlapping roles. Additionally, delineation of a clear and rational command structure is required to balance the expertise and jurisdictions of various federal agencies as they interact with local and state officials.

INTERNET RESOURCES

National Emergency Management Association: Professional association of emergency management directors from all 50 states, 8 territories, and the District of Columbia
<http://www.nemaweb.org>

USA.gov: Resources for state and local officials for disasters and emergencies
http://www.usa.gov/Government/State_Local/Disasters.shtml

U.S. Computer Emergency Readiness Team: Government users
<http://www.us-cert.gov/federal/>

U.S. Department of Health and Human Services: *Public Health Emergency Response: A Guide for Leaders and Responders*
<http://www.hhs.gov/disasters/press/newsroom/leadersguide/index.html>

U.S. Disaster Management Interoperability Services: Enabling emergency information exchange
<http://www.disasterhelp.gov/disastermanagement/>

U.S. Federal Emergency Management Agency: Emergency managers and personnel
<http://www.fema.gov/emergency/index.shtm>

NOTES

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