



[Chris Logan](#)

Program Director
Homeland Security and Technology
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Pandemic Preparedness in the States An Assessment of Progress and Opportunity

Executive Summary

Over the course of 2007 and early 2008, the National Governors Association Center for Best Practices (NGA Center) conducted nine regional pandemic preparedness workshops involving all 50 states, the District of Columbia, and four of the five U.S. territories. The workshops were designed to examine state pandemic preparedness, particularly in non-health-related areas such as continuity of government, maintenance of essential services, and coordination with the private sector. The workshops also examined the strengths and weaknesses of coordination activities among levels of government, both vertically (state-federal and state-local) and horizontally (state-state) as well as with the private sector.

This paper presents an overall assessment of the current level of pandemic preparedness in the states, based on the NGA Center's observations and an analysis of the information provided by workshop participants. It focuses specifically on preparedness in four sectors or disciplines that are common to all states—healthcare, commerce, education and public safety—and identifies five broad areas in which new or improved policies, procedures, capabilities or strategies are needed to improve overall pandemic preparedness. They include:

- **Workforce policies.** Every sector of the economy and government will be impacted by the availability of workers during a pandemic. States and the private sector should develop and test policies affecting the willingness and ability of personnel to perform their duties, whether in traditional or alternative settings. They also should work collaboratively to develop policies that allow sick workers to stay home during a pandemic and effectively balance the need of some workers to care for sick (or healthy) family members for extended periods of time with the requirements of government and private sector continuity of operations plans.
- **Schools.** Additional attention on the range of issues facing the K-12 and higher educational systems is necessary. States should ensure that federal guidance on school closure and reopening is widely disseminated to improve coordination with local authorities, and they should develop public communication strategies to begin educating communities about the purpose and limitations of school closure, associated issues and expected impacts. Colleges and universities have particular challenges that also must be addressed.

- **Situational awareness.** Awareness of the presence or absence of disease at the local, state and national levels is essential to the proper implementation of mitigation strategies in order to realize optimum public health benefits while minimizing negative side effects. However, no system currently exists to provide state officials with a clear picture of the situation in their states, in neighboring states or in other parts of the country.

States should ensure that all agencies are included in information-sharing networks that will be used during a pandemic. The private sector also should be integrated into those networks, and systems should be developed that provide state officials with ready access to information on disease activity, availability of critical supplies, deployed response assets, and other essential data.

- **Public involvement.** To a significant degree, the public has so far been left out of discussions about pandemic preparedness. States should engage the public in deliberations about, and encourage the public to inform decisions on, school closures, the availability of essential services, including healthcare, and other issues with difficult ethical dimensions.
- **Public-private sector engagement.** The interdependencies of the public and private sectors require that policies designed to control the spread of disease at the community level be developed in a collaborative fashion to ensure coordination and to avoid or resolve potential conflict. States in particular should reach out to small business to ensure they are adequately prepared for pandemics and are aware of the resources available to them.

To better understand the full range of a pandemic's potential economic impacts, states should conduct economic impact analyses that identify the sectors that are most critical to the state economy. Those analyses should serve as the basis of strategies to mitigate the effects of a pandemic of government operations and on day-to-day economic activities.

Introduction

Between April 2007 and January 2008, the National Governors Association Center for Best Practices (NGA Center) conducted a series of regional pandemic preparedness workshops involving all 50 states, the District of Columbia, and four of the five U.S. territories. The workshops were designed to identify gaps in state pandemic preparedness—specifically in non-health-related areas such as continuity of government, maintenance of essential services, and coordination with the private sector. A secondary goal of the workshops was to examine the strengths and weaknesses of coordination activities among levels of government, both vertically (state-federal and state-local) and horizontally (state-state) as well as with the private sector.

This paper presents an overall assessment, based on our observations and an analysis of the information provided by workshop participants, of the current level of pandemic preparedness in the states. It focuses specifically on preparedness in four sectors or disciplines that are common to all states: health care, commerce, education and public safety. The paper also describes several areas in which additional, focused work can reap immediate benefits not only for pandemic preparedness but for any catastrophic event.

During the interval between the end of the workshop program in January 2008 and the publication of this report, the Department of Health and Human Services, in coordination with 14 other government departments, agencies and offices, released additional guidance for states on developing pandemic influenza preparedness and response plans that ensure the continuity of state government operations; protect and provide for the needs of citizens; and support the operations of critical infrastructure, key resources and the overall state economy.ⁱ States were required to submit updated pandemic preparedness plans reflecting that guidance in July 2008.

While that guidance addressed some of the issues raised during the workshops, particularly in the area of school closure and community-based mitigation, the conclusions and recommendations of this report remain relevant to, and in many cases transcend the federal guidance for, comprehensive state preparedness for pandemics or other large-scale threats to the public health.

As we stated in an interim report published after the first five workshops,ⁱⁱ the picture provided by the states is clear: There is raised awareness in state government of the numerous challenges posed by a pandemic, but we are not yet adequately prepared. All states have significant and wide-ranging awareness of the threat, its origin, and its potential impacts. Additionally, all states are aware of the unique characteristics of a pandemic and the challenge posed for effective planning. But raised awareness alone is not enough. As a nation, we are not fully prepared for the range of potential social and economic impacts from a pandemic of the scope and severity envisioned by federal guidance documents—a pandemic on the scale of the 1918 “Spanish Influenza” that swept the globe in a matter of months and ultimately killed an estimated 40 million to 50 million people.

That bottom-line assessment, and the analysis in this report, comes with a major caveat, which we also noted in our interim report: Accurately assessing state preparedness for a pandemic outbreak is a moving target. There currently is no baseline, nor any agreed metric, against which state pandemic preparedness can reasonably be measured. Another observation from the interim report

also holds true today: Despite the fact that organizations such as the World Health Organization (WHO) and U.S. government officials continue to characterize the pandemic threat as “uncertain but urgent,” some of the original momentum for preparing at the state and local levels has been lost. This is in part because of some successes in preparedness planning—an encouraging trend—and in part because the spread of the current pandemic virus candidate, H5N1 influenza, or “bird flu,” appears to have slowed. In addition, an overall decrease in preparedness spending has increased the competition between preparedness activities and public health’s traditional roles and responsibilities.

Sector Analysis and Observations

In this final report, we focus on pandemic preparedness in four key sectors or disciplines: healthcare continuity and operations, commerce, public safety, and education. These sectors are common to every state and were addressed in the majority of the workshops. The issues identified in each also are representative of the types of challenges facing other sectors of the economy and critical infrastructure sectors as well as state and local governments: the strategies for addressing those issues that are outlined in this report are applicable across all sectors.

The preparedness of each sector discussed in this report was examined in the workshops through a strengths, weaknesses, opportunities, and threats (SWOT) analysis of the internal and external factors that affect the sector’s ability to respond to a pandemic. Internal factors are the inherent characteristics of the sector that either bolster or limit its ability to effectively respond—its strengths and its weaknesses. External factors are resources that can be used by the sector to improve its preparedness or pressures or other factors that could limit its ability to prepare or respond—its opportunities and threats.

It is important to note that the analysis for each sector was not conducted on a state-by-state basis. Rather, workshop participants were broken out of their state teams and grouped on a regional basis according to discipline or professional background. Each workshop therefore offered a regional view of preparedness for that particular sector. This report further aggregates those responses from across the workshops to provide a national-level analysis of each sector’s strengths, weaknesses, opportunities, and threats in relation to a pandemic outbreak.

State-specific issues were identified during the tabletop simulation component of the workshops (for a full description of workshop activities, please see Appendix I) and are included in this report for illustrative purposes.

Health Care

Of the sectors we examined during the workshop program, the health care sector emerged as the most cognizant of the challenges posed by a potential influenza pandemic. This is perhaps not surprising given that the focus of early federal, state, and local pandemic preparedness efforts has been on health and medical issues. In addition, increased attention to public health preparedness since the September 11, 2001, terrorist attacks and the anthrax mailings later that fall has greatly improved the sector’s ability to effectively respond to a variety of threats and challenges, and this is the foundational strength of the health care system’s pandemic preparedness. State officials we

encountered were well-aware of the specific issues involved in pandemic response and can rely on a well-trained, capable, and committed health care workforce that is generally dedicated to the provision of quality care in even the most trying of circumstances.

The sector's strengths are complemented by a number of opportunities to enhance preparedness even further, starting with the fact that a pandemic, at the time of writing, is not yet occurring. This lead time provides an opportunity for additional preparations in the areas of planning, exercising, and stockpiling. There also are potential benefits to increasing cooperation and coordination with outside organizations in advance of a pandemic. Finally, an opportunity currently exists to improve public education around the full range of issues involved in pandemic preparedness and response. While awareness of the pandemic threat peaked in 2006 as the global media began following the spread of the H5N1 virus among bird populations and reported human deaths from close exposure to the virus in birds, the issue has since faded from the public's radar and there is a growing skepticism in some quarters that the threat ever was, or ever will be, real. As a result, public preparedness for a pandemic remains insufficient.

Indeed, one of the major threats to the health care sector cited in the analysis is the unrealistic expectation by the public that personal preparedness is unnecessary because of a general attitude that a) a pandemic is unlikely to happen, and b) even if it does happen, health care services will be widely available, the sector will be able to provide the standard of care available during "normal" times, and medicines will be readily available to treat both the disease and its primary and secondary symptoms. In reality, the workshops served to confirm warnings made in other settings that the health care system in the United States is quite fragile, lacking surplus capacity in personnel, financing, or resources. For example, surges of patients during a pandemic, even if spread across the several weeks of a pandemic wave, are likely to severely stress, if not overwhelm, local health facilities.

Another threat to the sector's preparedness is the fact that outside assistance from neighboring jurisdictions or regions within individual states or from other states via mutual aid agreement such as the Emergency Management Assistance Compact is seen as unreliable during a pandemic episode. By definition, the entire country is expected to be dealing with a pandemic simultaneously, although not with identical levels of acuteness. That is, while some parts of the country may be dealing with an active pandemic wave, others are likely to be either recovering and recouping or preparing for the next wave. In neither case are they likely to be able or willing to share what scarce resources they have or to deploy personnel into a location where the disease is active and thus expose those individuals to a high-risk environment.

An interesting phenomenon, and one that presents both a strength and a weakness for the healthcare sector, is the extent to which healthcare preparedness efforts in most states had focused on stockpiling antiviral drugs, both Tamiflu and Relenza. While this focus has resulted in robust pharmaceutical stockpiles in many states (at the time of the workshops, 24 states and one territory had ordered 100 percent of their calculated antiviral stockpile requirements for treatment of sick individuals), it has come at the expense of other components of preparedness, including working with hospitals to increase their capacity to handle a surge of patients; developing strategies to ensure the availability of trained staff throughout a pandemic; and developing public communication messages for self-care, the need for triage, the possibility of reduced standards of

care, and a range of other issues. The focus on stockpiling antivirals was not universal, however. Several states expressed concern about the reliance on antivirals given that their effectiveness in treatment may be compromised by the development of resistance by the pathogen. Other states reported they are stockpiling only limited doses of antivirals, because of financial constraints, legislative restrictions, or disagreement with the terms of the federal government's antiviral purchase-assistance program, and concerns about the drugs' potential side-effects.

Commerce

The broadly defined “commerce” sector included all commercial activity in the states, from tourism to manufacturing to services and retail, and encompassed both large and small employers. As such, it is difficult to reach specific conclusions about the preparedness of the commercial sector. However, some general observations can contribute to an overall understanding of the effect a pandemic is likely to have on commercial activity and the ability of certain segments of the sector to manage those effects.

The economy as a whole, as we often are reminded, relies in large part on small and medium-sized businesses that have limited excess capacity and lack the resources to fully prepare themselves and their employees for disasters. In addition, many sectors—including the manufacturing sector, retail pharmaceutical, grocery, and petroleum distribution industries rely on just-in-time deliveries that could be impacted by reductions in personnel during a pandemic. Communities and states with international borders face particular challenges because the cross-border flow of supplies and the commute of key workers could be slowed or halted during a pandemic. Finally, the impact on all aspects of society of a concurrent event—a major hurricane, earthquake, fire, flood, or terrorist attack—during a pandemic would have particularly deleterious effects on the commercial sector.

Workshop participants universally recognized these potential impacts. In general, the workshops revealed that large businesses generally can be expected to manage those impacts better than small businesses because they have more resources, and, in the manufacturing sector, use operations that are highly automated and can be maintained with little disruption from a reduction in personnel. Small and medium-sized businesses, however, generally have limited resources or excess capacity, are frequently less-automated, and generally are unfamiliar with, or unable to find sufficient resources for planning beyond the immediate concerns of day-to-day operations.

The commercial sector will be motivated by the economic incentive, shared by vendors and suppliers, to assure the security and resiliency of their supply chains. This profit motive, combined with the sector's experience with previous high-impact incidents and threats, including Y2K, severe weather, and the 9/11 attacks, was viewed as strengthening its pandemic preparedness. However, the fact that a pandemic is likely to be felt at some level “everywhere, all the time,” and that there is unlikely to be any “safe haven” from the impact of the disease, was cited as a threat to supply chains and was a concern to many workshop participants.

In addition, states may be hindered in their ability to manage the economic impacts of a pandemic because most do not fully comprehend the full range of economic impacts a pandemic could have. Few states have attempted to quantify those impacts and current planning in most states has

not begun to address strategies for mitigating the effects of a pandemic on day-to-day economic activities in the state. Reductions in travel and tourism, whether from choices made by individuals or as a result of imposed disease-mitigation strategies, are likely to significantly and severely impact the revenues and services in the state. **California, Maine, New Hampshire, Puerto Rico** and the **Virgin Islands** described specific threats to their economic stability brought on by travel restrictions and reduced tourism, and **Hawaii** and **Nevada** cited a report by the Trust for America's Healthⁱⁱⁱ indicating their economies would be significantly impacted.

One commonly cited area of concern involves the inability of state officials to monitor the supply of food and other essential goods into and within their states. No state reported having agreements with private sector food distribution and retail system to ensure the reliability of the food supply, nor has any state developed or deployed any type of monitoring system that would provide state officials with situational awareness about the availability of food or other basic necessities at the state, county, or local levels.

The assurance of the food supply is particularly troubling because of just-in-time deliveries, low warehouse inventories, and the potential reduction in the workforce along the entire supply chain—"from farm to fork." The workshops revealed, however, that concern about food supply is not universal. While **Alabama, Connecticut, the District of Columbia, Massachusetts, Puerto Rico**, and the **Virgin Islands**, cited the supply of food as an acute concern, **Idaho, Minnesota, Montana, North Dakota, South Dakota** and **Utah** expressed less concern because of the culture in those states of stockpiling against severe weather and other threats.

Public Safety

Like the broad "commerce" sector, the public safety sector encompasses a wide range of activities, including law enforcement, the judicial system, fire and emergency services, and the National Guard. Despite the eclectic nature of the sector, workshop participants assigned to this topic provided the most consistent view of their disciplines' preparedness for a pandemic and of the impact a pandemic is likely to have on their capabilities and operations. The participants frequently coalesced around several key positive and negative issues and were routinely analytic in their review of how a pandemic would impact public safety. In addition, their analysis was clearly guided by the documented experience with a variety of incidents and disasters, including the anthrax attacks of 2001.

A foundational strength of public safety agencies is that, by nature, they have a hierarchical structure with clearly defined governance structures, roles, and responsibilities that should provide some organizational resiliency during a pandemic or other crisis. In addition, public safety professionals' experience with emergency situations, crises, and stressful working conditions provides a workforce that is well-trained and well-prepared for the unique challenges posed by a pandemic. The "spirit of service" embodied by police officers, fire fighters, and others in the public safety arena also was cited as a strength in the sectors' preparedness for a pandemic. In addition, workshop participants noted that public safety agencies generally have existing relationships with organizations and key individuals in the communities they serve, including volunteer groups, faith-based organizations, civic groups, and others. These relationships will be

useful as state and local agencies attempt to disseminate information, implement disease-control strategies, and gather information from the local level.

Workshop participants also cited several opportunities for strengthening the ability of the public safety sector to respond to a pandemic. They included developing regional collaborative relationships with other public safety agencies within their states to ensure consistency of effort, share experiences and develop or enhance mutual aid agreements and expanding training and education programs for public safety workers and retired public safety personnel on the specific challenges a pandemic is likely to present.

But, as will be the case in other disciplines and sectors, the public safety sector also could be challenged to maintain its normal levels of service in a pandemic due to worker and resource shortages. Many public safety agencies already are facing routine shortages in personnel, equipment, and other resources and the months-long pandemic cycle could seriously erode service levels in some communities. In some areas, a lack of personal protective equipment (PPE) could slow the delivery of services in communities in which the disease is active. Community mitigation efforts could impact some judicial system activities such as *habeus corpus* hearings, arraignments, and civil and criminal jury trials. The suspension of jury trials during a pandemic was being considered by a number of states, although **Louisiana** appeared to be the only stated which has acted to do so.

Finally, the nation's experience in the immediate aftermath of Hurricane Katrina indicates that public safety professionals are more likely to report for duty if they are confident their families are safe and provided for. This requirement has repercussions for antiviral and vaccine prioritization protocols because it has the potential to extend the list of priority recipients beyond immediate frontline workers to include their close family members.

Education

The preparedness of the educational system for a pandemic generated significant discussion at all the workshops. Participants were concerned about a wide range of issues, including when to close schools or dismiss students, how to maintain curriculum continuity during closures, and how to identify the appropriate time at which classes could resume. In addition, questions arose as to how to ensure that children who are not in school do not congregate in other settings; how to provide school-based services, such as free or subsidized meals and mental health counseling, when schools are closed; and, at the university level, how to manage social interactions, dormitory-style living arrangements, high-profile and income-generating sports programs, and foreign students who may not be able to return to their home countries. The education issue, above all others, raised questions about how actions taken in neighboring states would be perceived by the public and to what degree those actions and the public's response would impact internal policies and strategies.

Overall, the workshops revealed an education system that, despite the significant challenges posed by a pandemic, is well-prepared to manage crises. Schools serve as a strong source of cohesion, and of information, for the communities they serve, and public agencies have a long history of working through schools to send messages to the public (anti-smoking campaigns, fire

safety, etc.). In addition, effective partnerships among schools, police departments, human services, public health, and other government agencies exist in many communities.

Schools also participate in planning and exercises for all types of hazards and threats, including pandemics. **Delaware, Georgia, and Nebraska**, each have conducted statewide exercises on the range of issues involved in schools closures, from the impact on the workforce to the effect on the business and logistics side of the educational system—including human resource issues, transportation, and food services. In addition, schools provide the community with a well-trained and well-educated workforce—including on-site health professionals—that could potentially be recruited for other roles during pandemic outbreaks.

But the education system is nonetheless likely to be severely challenged by a pandemic. Closing schools for extended periods of time, for example, will have cascading economic effects as teachers and parents are forced out of work, either as a direct result of the closure or to care for children who are no longer in class. A pandemic also will have lingering mental health impacts on students, particularly in the case of student or staff deaths.

The key to closing schools, as a strategy for slowing the spread of disease, is knowing when to do so in order to reap the maximum public health benefits of that action while minimizing the negative effects on a community. But states generally have very little epidemiological situational awareness, either in real-time or in near real-time, to allow them to know precisely when to recommend a school closure or re-opening in a particular area. In addition, the decentralized education system in many states, and with it the distributed decision-making authority, raises concerns about consistency in implementing disease-control strategies and ensuring that a clear, unambiguous message is sent to the public about the strategies that are adopted. The lack of federal and, in some cases, state coordination of school policy is likely to exacerbate those challenges.

Officials in **Virginia** deliberately addressed the flow of “real-time information” about school systems as they developed their statewide pandemic preparedness plan. The state is considering having local school systems report as frequently as every day on actions they are taking, leading up to and including closing schools, both on the state’s emergency web site and directly to the state Department of Education. School system superintendents’ regional representatives also will be part of the regional emergency response communications network to ensure that sharing information about what is happening among school divisions is occurs frequently and efficiently.

State Priorities

At the conclusion of each workshop, state representatives were asked to develop confidential “after action reports” that detailed several immediate steps their states could take to improve their preparedness for a pandemic. The actions were not ranked according to priority and were not meant as a comprehensive template for improving pandemic preparedness but rather served as a measure of each state’s immediate “take away” message from the workshop.

The self-assessments of these regional workshops resulted in the identification of 43 specific issue areas, ranging from clarifying roles and responsibilities to conducting economic impact

analyses to improve coordination with tribal governments.¹ The issue raised most by the states after completing the workshop involved improving *continuity of government* plans, with 31 states citing a need in this area. Improved *coordination and engagement with the private sector* was the second-most cited area for improvement, with 24 states listing this issue among their priorities. Twenty-two states reported that their strategies for handling *school-related issues* required additional work; 21 states planned to focus on *continuity of government planning*—particularly in the area of personnel/workforce policy development; and 20 states reported needing additional work to *clarify the roles and responsibilities* of various state agencies.

Recommendations

When combined with the results of the SWOT analysis, the state self-assessments revealed a pattern of needs across government and the private sector for improved or new policies, procedures, capabilities, or strategies in several key areas:

- **Workforce policies.** Every sector examined in this report will be affected by the availability of workers during a pandemic. In general, states and the private sector should develop and test policies affecting the willingness and ability of personnel to perform their duties, whether in traditional or alternative settings. Potential strategies and or guidance addressing telecommuting, alternative schedules, or modified operating hours for retail establishments and Internet or distance-learning programs for school children would be particularly useful. During a pandemic, almost everyone will be susceptible to the illness. A central disease control strategy will be keeping sick people away from others to minimize the spread of infection. Employers should examine their human resource policies and, if needed, create new policies that would allow sick workers to stay at home during a pandemic. When possible, states and private sector employers should collaboratively develop policies that effectively balance the need of some workers to care for sick (or healthy) family members for extended periods of time with the requirements government and private sector continuity of operations plans.

In the health care field, coordination by public health agencies and private sector healthcare providers with outside organizations could be useful in addressing workforce challenges. Organizations for retired health care workers, medical or public health schools, and other groups could be a source of auxiliary workers who would require little training to enhance the capacity and capabilities of the sector—particularly at sites dedicated to pandemic influenza healthcare, where their presence would allow as many health care professionals as possible to provide patient care. Additional targeted training also should be provided to health care professionals to broaden their understanding of the medical and ethical issues likely to arise during a severe pandemic.

The public safety sector would benefit from the development of intrastate regional collaborative relationships with other public safety agencies to ensure consistency of effort, share experiences, and develop or enhance mutual aid agreements. Expanding training and education programs also would be useful for public safety workers to

¹ A full list of state action items, aggregated by region, is available as **Appendix II**.

highlight the specific challenges a pandemic is likely to present. Finally, recent experience has shown that public safety professionals are more likely to report for duty if they are confident their families are safe and provided for. While policies should be developed to provide this level of confidence, actions in this area—for example, providing antivirals or vaccines to public safety workers’ families—will impact the availability of antivirals and vaccines for other priority groups.

- **Schools.** Governments at all levels must focus additional attention on the range of issues facing the K-12 and higher education systems. The federal government has developed guidance for implementing school-based mitigation strategies, including appropriate triggers for dismissing students and for resuming classes. States should ensure that guidance is widely disseminated to improve coordination with local authorities. States, local governments and school districts should collaboratively develop workforce policies for teachers and staff as well as for non-school employees who will be forced to take time off work to care for sick (or healthy) students. In addition, they should develop public communication strategies to begin the process of educating communities about the purpose and limitations of school closure and associated issues and expected impacts.

Colleges and universities have particular challenges that also must be addressed, including dormitory-style living quarters that could facilitate the spread of disease and international students who may not easily return home temporarily—particularly if international travel bans are in place.

- **Situational awareness.** The implementation of any mitigation strategy relies on triggers that are tied to specific events, including the arrival or departure of disease in a particular state, county, or community. Awareness of the disease situation at the local, state and national level is essential to the proper implementation of mitigation strategies in order to realize optimum public health benefits while minimizing negative side effects. However, no system currently exists in any state to provide officials with a clear picture of the situation in their states, in neighboring states, or in other parts of the country.

For example, no state has developed agreements with the private sector food distribution and retail systems to monitor the availability of food or other necessities. And education officials at the state level specifically cited a lack of “real-time information” about school systems during emergencies as an impediment to a coordinated school strategy for closing and reopening schools in their states.

To address this shortcoming, states should ensure that all agencies, including those not traditionally part of the emergency response community, are tied into the information-sharing networks that will be used during a pandemic. Private sector owners and operators of critical infrastructure and providers of essential goods and services also should be integrated into those networks. Finally, states should develop and deploy systems to provide ready access to information about disease activity, availability of critical supplies, deployed response assets, and other essential data.

- **Public involvement.** To a significant degree, the public has so far been left out of discussions about pandemic preparedness. General preparedness information has focused on self-reliance strategies such as stockpiling food, water, and other necessities. State and local governments should engage the public in deliberations about, and request that the public inform decisions on, school closure and other issues with difficult ethical dimensions, including:
 - Triage and rationing of health care and prioritization of medicines and scarce medical equipment such as ventilators;
 - The *possibility* that standards of care might be lowered during times when the healthcare system is overburdened; and
 - Policies surrounding the handling of large numbers of dead and the need to balance public health needs with a respect for religious and cultural requirements, norms, and traditions.

This engagement is particularly important as the threat of pandemic fades from the popular media. Awareness of the pandemic threat peaked in 2006 as the global media began following the spread of the H5N1 virus among bird populations, but the failure of that candidate virus to effectively transmit among humans (an absolute requirement to generate a pandemic) has led to the issue fading from the public's radar and has fed skepticism in some quarters that the threat ever was, or ever will be, real. As a result, public preparedness for a pandemic remains insufficient. Public education also will be important to dissuade the so-called "worried well," individuals who are not ill but believe they are, from unnecessarily filling hospital and physician waiting rooms. This could alleviate some, but not all, of the expected surge of patients.

- **Public-private sector engagement.** The interdependencies of the public and private sectors require much closer collaboration than has occurred to date to fully prepare for a threat with such broad potential impacts. The public sector relies heavily on the private sector for a range of products and services, including critical infrastructure such as electricity and water and telecommunications services. Similarly, the private sector's ability to weather a pandemic will require close collaboration with the public sector on the implementation of policies that could affect worker availability, supply chain reliability, and the provision of public safety services. As a result, policies designed to control the spread of disease at the community level—including asking sick people to stay at home, closing schools, limiting public gatherings, and restricting movement—must be developed in a collaborative fashion to ensure coordination and to avoid or resolve potential conflicts among plans and strategies.

State officials also should reach out to small businesses to ensure they are adequately prepared for pandemics and are aware of the resources available to them. Trade associations, local business groups, chambers of commerce, and similar groups will be particularly valuable in preparing that segment of the business community.

Officials in most states, however, may be hindered in their ability to manage the economic impacts of a pandemic because most have not attempted to quantify those impacts. States should conduct economic impact analyses in order to understand the full impact of a pandemic and to identify which sectors will be the most critical, and which will be impacted the most, during a pandemic. Finally, states should use those economic impact analyses as the basis of strategies to mitigate the effects of a pandemic on government operations and on day-to-day economic activities.

Conclusion

The nation, as a whole, is better prepared for a pandemic disease outbreak than it was several years ago, largely because of federal leadership and the encouragement and support provided to state and local governments by targeted grant programs. However, those preparedness efforts have only recently reached the non-health sectors of state government and still have not fully engaged the private sector. In addition, the progress made to date is in jeopardy of being lost to a combination of external forces, including increasing skepticism of the viability of the threat; a related and growing complacency among the public and some government leaders; competing priorities; and declining funding.

Those external factors must be addressed in order to sustain the progress previously made and to further improve the nation's ability to handle catastrophic incidents such as a pandemic disease outbreak. To do so will require a combination of strategies and tactics that, at their core, rely on increased collaboration among all levels of government, with the private sector and, notably, with the public—a key partner that so far has been all but omitted from the process. In general, the conclusions of the NGA Center's pandemic preparedness project can be summarized as follows:

- Plan preparation, exercises, and the level of attention paid to the unique challenges of a pandemic outbreak have improved the nation's preparedness for such an event, even if that preparation is limited to a better understanding of the range of effects that can be expected. *But we are not fully prepared;*
- Pandemic preparedness still is widely viewed as primarily a public health responsibility for which preparation, response, and recovery will be driven largely by the public health sector. Pandemic plan and strategy development are mainly taking place in the public health arena;
- While widespread illness will be the immediate defining characteristic of a pandemic outbreak, it is the effect of that widespread illness on economic and social activity that poses the greatest challenge to society;
- It is in non-medical-, non-health-related areas that the most preparedness work remains to be done. That effort must be seen as more than pandemic-specific because the benefits of that work will accrue in a range of incidents and because preparedness efforts specific to a pandemic, for a number of reasons, are difficult to sustain;
- The work must not be driven solely by the public health sector but must include all affected disciplines and sectors—public and private—as equal partners. Agencies from across the spectrum of state government must be engaged because all sectors of government and society are likely to be affected. The private sector also must be involved because community-based mitigation strategies such as school closure, combined with

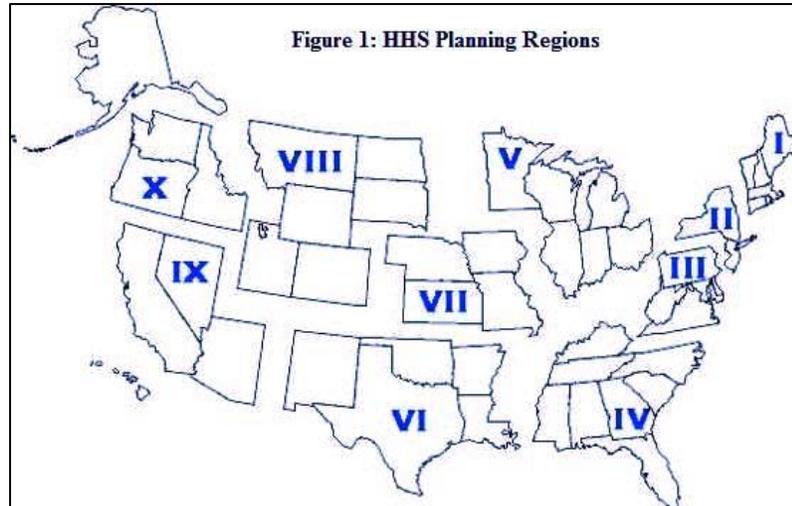
widespread illnesses, will immediately and significantly impact the availability of workers, which will affect the ability of private sector companies to maintain their operations. Public sector policies and strategies must be developed in the context of those expected impacts; and

- The public must be actively involved in planning efforts. Almost uniquely, public health mitigation strategies, to be effective, will require short-, medium-, and potentially long-term changes in behavior. The public must understand the logic behind those recommended behavioral changes as well as the potential benefits and costs of those changes.

Actions taken to address the issues detailed in this report will pay dividends not only for pandemic preparedness but for the nation's ability to effectively and comprehensively prepare for and respond to a variety of threats, including natural disasters and large-scale terrorist attacks. Collaborative approaches involving government, the private sector, and the public will improve coordination; increase the preparedness of businesses, communities, families, and individuals; and contribute to a more resilient society that is capable of responding to and quickly recovering from nearly any challenge.

Appendix I: Project Overview

The NGA Center's Pandemic Preparedness workshops were organized based on the 10 planning regions established by the U.S. Department of Health and Human Services (HHS) and the Federal Emergency Management Agency (see Figure 1). A total of nine workshops were held, consecutively, in Minneapolis, **Minnesota**; Scottsdale, **Arizona**; New Orleans, **Louisiana**; Seattle, **Washington**; Salt Lake City, **Utah**; St. Louis, **Missouri**; Washington, **D.C.**; Atlanta, **Georgia**; and Boston, **Massachusetts**.²



Governors of the states in each region were invited to designate teams of up to 10 individuals from a variety of state agencies and disciplines, local governments, educational institutions, and the private sector to represent their states at the workshop. With a few exceptions, the majority of workshop attendees have come from health or public health backgrounds.

In addition, representatives of HHS and the U.S. Department of Homeland Security (DHS) attended each workshop as observers and to provide clarification on federal roles and responsibilities.

Format and Session Goals

Each 1½-day workshop comprised three elements: a facilitated discussion of governance issues; strengths, weaknesses, opportunities, and threats (SWOT) analysis of key economic sectors; and a table-top simulation focused on regional issues. Each regional event concluded with the participating states reporting five issues of concern identified during the course of the workshop and planned action items to address those concerns.

The three workshop sessions focused on developing outcomes that supported the stated goals of the workshops. These included:

- Facilitating regional information exchange about current planning and preparedness;
- Enabling state participants to discuss and query the other states about specific elements of current plans;
- Providing specific points of contact for current elements of state plans;

² The final workshop included states from both Region I and Region II.

- Exchanging published information or Web-based resources of regional relevance;
- Interaction with, and querying of, federal officials from the attending agencies; and
- Gaining awareness of key components of the federal response plan—especially the pre-designated federal officials and their team members.

Appendix II: State “After Action” Issues

Numbers in each box indicate number of states citing that issue per region.

Action Item	Region I	Region II	Region III	Region IV	Region V	Region VI	Region VII	Region VIII	Region IX	Region X	Total
Clarify Roles	1		3	3	4	1	3	2	1	2	20
Cabinet Exercises	2		1	1		1					5
Govt. Continuity		5	4	4	1	4	3	1	4	5	31
Crisis Communics.	2	1	2	6	2		1	1	1		16
Food/Water				1		1		1		2	5
CI/KR Readiness	1	1		3		1				1	7
Legal Issues		2	2	3		1		2		3	13
Stafford Act			1	2						2	5
Local Workshops	1		2	2					2		7
Triage Protocols				1				1			2
Volunteer Liability		1	2	2		1		4		1	11
Law Enforcement			2	1	1					1	5
Emergency Decl.				1							1
Use of Antivirals	1			2				1	3	2	7
School Continuity				4	2	4	3	4	3	2	22
Pvte. Sector Coord.	3	1	3	2	2	3	3	4		3	24
Public Awareness	1		3	1	1	2		3	3	1	15
Sustained Funding	1	1		1		1					4
Quarantine Review	3		1		1	1			2		8
Decision Triggers	2						1		4		7
Situation Awareness	4	1	1		1	1				1	9
Redefine “Local”	1		1								2
Review Plans	2	3	1		1		2		1	1	11
Economic Review	1	2	1		1	1			2	1	9
Engage Faith-Based		1	1			3		1		1	7
Call Centers		1	1					1		1	4
Border Security		2				1			1		4
Enhance Staffing		1									1
Fed. Coordination	3	1	4				4		2	1	15
Standards of Care			1			2		1	1		5
Regional Coord.			4		1	1	2	3	1		12
Special Needs			1		1					1	3
SNS Issues	1		2				1		2		6
Legislative Training			1								1
National Guard			1		1	2		1		1	6
Pharmacy Liability			1						1		2
Sustain “Urgency”					1			1			2
Tribal Coordination						1				1	2
Judicial Continuity						1	1				2
Transportation			1						1	1	3
Medical Surge							1	2	2		5
Lack of PPE									2		2
Traveler Alerts									1		1

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Endnotes

ⁱ U.S. Department of Health and Human Services (HHS), *Federal Guidance to Assist States in Improving State-Level Pandemic Influenza Operating Plans* (Washington, D.C.: HHS, March 11, 2008).

Available at: <<http://www.pandemicflu.gov/news/guidance031108.pdf>>

ⁱⁱ National Governors Association Center for Best Practices (NGA Center) *Pandemic Preparedness in the States: An Interim Assessment from Five Regional Workshops* (Washington, D.C.: NGA Center, February 2008).

ⁱⁱⁱ Jeffrey Levi, Laura M. Segal, and Misha Segal, *Pandemic Flu and the Potential for U.S. Economic Recession: A State-by-State Analysis* (Washington, D.C.: The Trust for America's Health, March 2007).