

Influenza Pandemic Simulation

Implications for the United States

An influenza pandemic will be unlike any crisis today's government or business organizations have ever experienced. On 27-28 March 2006, the Center for Health Transformation and Booz Allen Hamilton engaged nearly 100 leaders from the public and private sectors to work through a simulated influenza pandemic. The exercise explored the consequences of such a disaster for the U.S., and the strategies that might best mitigate these impacts. Participants concluded the effects will overwhelm the efforts of any one agency or sector—and that the response will require extraordinary measures in an extraordinary time.

Anticipating an overwhelmed healthcare system, pervasive shortages of food and essential items, and communities under severe emotional stress, participants recognized that we remain under prepared for the challenges posed by a pandemic.

Key insights expressed by participants included:

- ▶ The healthcare system will likely be overwhelmed by a prolonged surge of ill...
- ▶ Forcing extremely difficult operational and ethical decisions regarding treatment and care.
- ▶ A pandemic may require liability relief within the healthcare system and other sectors.
- ▶ Timely Federal guidance and policy will be critical to successful coordination and action...
- ▶ And the Federal government should make a high-priority effort to accelerate vaccine capabilities.
- ▶ Special care should be taken to protect the mental health of the population...
- ▶ And to address the particular vulnerabilities of poorer Americans.

- ▶ Continuity of services, commerce, trade, transportation, and operations will be essential.
- ▶ Employers should address workforce and workplace policy issues now.
- ▶ A severely depleted workforce will require creative, cross-sector sourcing strategies.
- ▶ The effectiveness of public communications will significantly shape how well the U.S. weathers such a crisis.

The implications of a pandemic are far-reaching for government coordination. Participants recognized that the weight of decision-making and the vast share of resources will be under the purview of state and local leaders. Nevertheless, they clearly expressed the conviction that an effective response to an influenza pandemic will require timely and decisive actions, guidance, and messaging from the Federal government.

The simulation revealed wide-variation in how relatively similar organizations plan to interact with employees, customers, suppliers, and other stakeholders. On significant issues, a consensus has yet to emerge regarding best practices, suggesting the need for continued discussion and collaboration.

Regardless of how effectively public and private organizations react to a pandemic, the simulation underscored sobering implications for all Americans. With widespread shortages of workers and supplies, perhaps over several months, individuals will need to be remarkably self-reliant to cope with these extreme circumstances. All public and private leaders should include within their plans strategies to support and sustain this self-reliance in the midst of a pandemic.

The Simulation. The Influenza Pandemic Simulation was developed and conducted with the following objectives:

- ▶ Assess the impact of pandemic influenza on U.S. government and business.
- ▶ Test response plans and underlying assumptions of government and business.
- ▶ Identify approaches for stakeholders to improve their preparedness and strategies.

The Scenario. Following the outbreak of a new strain of influenza in East Asia, a small number of deaths were confirmed in several U.S. cities in late-November. Over the course of several weeks, the pandemic continued to spread across the nation. People were sick, taking care of ill family members, and reluctant to leave their homes. Healthy workers were increasingly unwilling to risk the hazards of going to work. Essential food and medical supplies were running out. There were no vaccines available and inventories of anti-virals were adequate for only a small percentage of the population.

The Simulation Structure. Teams of participants representing key government and business stakeholder groups were tasked with addressing the challenges of the pandemic. Over the course of the two-day event, teams identified priorities, developed strategies, took actions, and collaborated together. Each half-day move was followed by feedback from the “public” and the “media,” and an updated pandemic status based on team actions. To calculate the impact of team actions on the progression of the disease, Booz Allen developed and applied a dynamic, epidemiological model. Feedback included not only the number of people infected, recovered, and dead, but also the estimated impact on the U.S. in terms of social unrest, service capacity of businesses and agencies, and availability of critical resources.

Insights Gained. As participants grappled with challenges produced by the simulation, they identified the following points as key observations and recommendations:

Measured by either scale or complexity, an influenza pandemic will be unlike any crisis today’s government or business organizations have ever prepared for or

experienced. An effective response must include immediate and coordinated multi-sectoral actions, with organizations prepared to deal with extraordinary consequences and shortages over several months. Unlike many crisis response plans that typically focus on immediate, targeted solutions to deal with a natural disaster at the local and state level, the U.S. response to a pandemic will require decisive Federal guidance and communications over a long duration at an unrelenting tempo, with perhaps even national coordination of essential services and supplies.

The U.S. healthcare system will likely be overwhelmed by a prolonged surge of a severely ill population. Today’s healthcare system does not have the staff, the physical resources, or the financial reserves needed to deal with the massive surge of patients anticipated during an influenza pandemic. Healthcare system supply chains are highly vulnerable due to workforce shortages, transportation disruptions, and security issues, all complicated by reliance on just-in-time inventories. Medical supplies and equipment, such as ventilators, will fall short of demand. The monetary impact of a pandemic will outstrip what are, across the industry, typically modest financial reserves. Alternate healthcare sites, perhaps located at schools, universities, community centers, and churches, will need to be established, staffed, and supplied even as operational hospitals and clinics are quickly depleting their own staff and resources.

A pandemic will raise a number of complex and difficult bioethical decisions regarding provision of care. Today, the U.S. population is accustomed to a reliable healthcare system with a high standard of care. That is unlikely to be sustainable in a system contending with a pandemic. Medical staff could be forced to choose who gets medical treatment and who does not—it will become a precarious system of “have” and “have-nots.” A limited amount of anti-virals will force governments to decide who receives this medication—and again, by implication, who does not. Healthcare staff will face a series of complex ethical decisions, such as whether people will be taken off treatment if they are not responding quickly, and how to allocate resources to those stricken by non-flu conditions. Without an agreed-upon priority and standard of care—ideally a standard developed and

promulgated at the national level—medical staff may face extremely difficult and psychologically taxing decisions with each and every patient.

Special circumstances during a pandemic may require liability relief within the healthcare system and other sectors. To fill the gaps in an overwhelmed healthcare system, specific liability relief will be needed for a wide range of situations. These situations include personnel who are providing healthcare (including those without proper licenses), and managers who are training, authorizing, and directing others in the provision of healthcare. Organizations assuming roles beyond their norm, such as corporations providing facilities for use as clinics, hospitals, and shelters, also require special consideration under liability relief.

Stakeholders looked to the Federal government for the active exercise of guidance and policy. Collaboration and close planning between the public and private sectors will be essential for implementing effective preparedness and response strategies, and for taking decisive action in a pandemic. In the simulation, the private sector repeatedly turned to the Federal government for national policy or guidance on issues ranging from difficult bioethical decisions to the potential nationalization of the food supply. But under current laws, regulations, and deeply ingrained philosophies, the Federal government exercises relatively little actual authority over state and local officials and the private sector in such an emergency. Participants concluded that the Federal government, in concert with other stakeholders, must design and implement a new top-down and proactive approach to crisis planning, communications, and response that will more effectively capitalize on Federal government expertise and “push” its knowledge, capabilities, and guidance to those who need it in a timely manner.

Participants advocated a high-priority national effort for the rapid development of vaccines. Traditional vaccine development cycles combined with relatively modest production capacity in the U.S. will not be fast enough to save lives in the event of an influenza pandemic. Focused development, production, and distribution of a vaccine are needed to increase flu preparedness. But to enable an accelerated process and promote data sharing and collaborative science, participants

anticipated that Federal regulatory and liability changes or waivers would be required.

Special care will be needed to protect the mental health of the population during and after a pandemic. Providing care to those traumatized by widespread death and dying, uncertainty, isolation, and other consequences of a pandemic will be paramount to recovery efforts. Compassion must be an essential component of the response plan. Many will need grief counseling, and specialized attention will likely be critical for staff called on to make life and death triage decisions repeatedly over prolonged periods of time.

Particular preparations should be devoted to anticipating and addressing the needs of poorer communities. Without careful planning, poorer Americans living in both urban and rural communities could bear a far heavier burden in the event of a pandemic. Many participants pointed out the likelihood that poor Americans will have fewer resources and options to enable them to exercise self-reliance and practice social distancing.

Participants affirmed that continuity of commerce, trade, and transportation will be essential to maintain the economy and welfare of the U.S. population. Participants deemed it important that critical industries remain operational, commerce continues, and borders remain open. But to do so, individuals and organizations were faced with challenging trade-offs between minimizing social contact and disrupting commerce—a balance between protecting the immediate health needs of people, and protecting the health of an economy that will be needed by all to power and sustain recovery. As workforce shortages and supply chain disruptions became prevalent—accompanied by decreased demand for non-essential goods and services—concern of cash flow shortages became an issue, in particular for small businesses.

Employers must address workforce/workplace issues well in advance. Difficult decisions regarding what employers can and cannot do for employees during a pandemic came to light throughout the simulation. Some businesses elected to cut non-essential employees, sending them home without pay or benefits, while other businesses opted to continue either partial or full salary

and benefits for all their staff. Federal and state governments are unlikely to issue mandates for the continuation of wages or benefits in a pandemic, absent extraordinary political pressures, leaving businesses to grapple with these decisions. To better prepare for a pandemic, participants recommended that employers should immediately determine essential and non-essential operations/employees, as well as establish policies that address continuation or discontinuation of wages, healthcare, and other benefits.

A severely depleted workforce will require creative, cross-sector sourcing strategies to maintain production and delivery of essential goods and services. Rapidly spreading influenza would significantly reduce the number of available workers for several months. People will be sick, taking care of ill family members, or reluctant to leave their homes. Prioritization of essential services and employees must be established well in advance of an influenza pandemic to ensure adequate staffing and continuity of operations. Augmentation of healthcare and security workers will be critical—with one solution being to leverage non-essential (“unutilized”) workers from other sectors to fill these essential positions. The “recovered”—those who will have recovered from infection by the pandemic strain and thus likely have partial or full immunity to the virus—might also be available to staff essential positions.

Leaders must prepare to communicate developments, policies and guidance in ways that encourage compliance, cooperation, empathy, and courage. In a pandemic, Americans will face difficult and emotionally trying conditions for months on end. The consequences of the pandemic will greatly depend on public behavior that leaders, for the most part, cannot compel, but only encourage. To do so, government, business, religious, and other leaders should methodically develop, practice, and refine plans for communicating with those in their communities.

Final Thoughts. The Influenza Pandemic Simulation—held with the fervent hope that such an event will not occur—was designed to advance economic, health, and social strategies so that all sectors will be better prepared to respond should such an unprecedented challenge emerge. Simulation participants worked together to develop, share, and discuss novel insights and solutions. And yet participants also concluded the exercise with the recognition that much remains to be done to properly prepare the nation for a disaster of this magnitude.

In view of the risks—and opportunities—highlighted by this exercise, the way forward calls for continued focus, collaboration, and planning across all sectors of government and the business community.

About The Center for Health Transformation

The Center for Health Transformation is a unique collaboration of public and private sector leaders dedicated to the creation of a 21st Century Intelligent Health System that saves lives and saves money. The Center accelerates the adoption of transformational solutions and policies that create better health and more choices at lower cost by:

- ▶ Collaborating with key leaders to create a critical mass for transformation of our health system
- ▶ Identifying solutions that provide better health and more choices at lower cost
- ▶ Sharing those solutions with the widest array of opinion leaders and decision makers across all sectors to encourage their adoption
- ▶ Helping create, communicate, advance and improve policies that will accelerate this transformation

More information about the Center for Health Transformation is available at www.healthtransformation.net.

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With more than 17,000 employees on six continents, the firm generates annual sales of \$3.5 billion. Booz Allen provides services in strategy, organization, operations, systems, and technology to the world's leading corporations, government and other public agencies, emerging growth companies, and institutions.

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