

## MEETING REPORT

# ROUNDTABLE DISCUSSION: CORPORATE PANDEMIC PREPAREDNESS

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ON NOVEMBER 29, 2006, senior executives representing 20 corporations, many of them Fortune 500 companies, met in New York City to discuss corporate preparedness for pandemic influenza. The participants included 21 senior leaders with responsibility for business continuity, corporate security, emergency preparedness and response, and risk management. Industries represented included information technology, finance, pharmaceuticals, transportation, aerospace, consumer products, utilities, communication, energy, and defense. (Participating organizations are listed in the sidebar.) The Corporate Pandemic Preparedness Roundtable was jointly organized by The Bellwether Group, Inc., and the Center for Biosecurity of the University of Pittsburgh Medical Center (UPMC); it was sponsored by the Alfred P. Sloan Foundation.

The Roundtable provided executives from leading national and international businesses with the opportunity to share information and discuss the challenges they face in preparing their organizations, customers, suppliers, and employees to cope with a possible pandemic. The meeting included presentations from the Center for Biosecurity, The Bellwether Group, Inc., and the NYC Department of Health and Mental Hygiene, followed by a structured discussion among the practice leaders in the room. Prior to the Roundtable, participants responded to a survey that enabled the organizers to evaluate the status of corporate pandemic planning amongst attendees. Results from this survey were presented, in nonattributable format, at the meeting. To facilitate an open discussion, information shared at this Roundtable was not for attribution.

The primary objectives of this Roundtable were: (1) to discuss the current threat from pandemic influenza and the

corporate response thereto; (2) to determine the state of preparedness within the participant group; (3) to identify best practices in corporate preparedness for pandemic flu; and (4) to provide the participating companies an opportunity to learn from each other.

## SUMMARY OF SPEAKER PRESENTATIONS

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### *Summary Background on Infectious Disease Emergencies*

Tara O'Toole, MD, MPH, CEO and Director,  
Center for Biosecurity of UPMC

- *Role of the Private Sector:* The private sector has a substantial role to play in pandemic flu preparedness, and more is going to be asked of the private sector than is now generally recognized.
- *Epidemics Are Different from Explosions and Fires:* Epidemics are not like other disasters. There is a significant amount of irreducible confusion and uncertainty associated with epidemics that can not be resolved by technology.
- *Diseases Know No Boundaries:* Epidemics are unique in their ability to cause ripple effects beyond the epicenter. In a pandemic, a majority of the people are affected within a period of months, although some geographic locations will be affected earlier and some more drastically than others. Epidemics have the potential to upset the interconnectedness of the modern world.
- *Pandemic Influenza Vaccine Changes Everything:* If we

had an effective vaccine in sufficient quantities in time, then we would have a relatively simple logistical problem of getting vaccine into people. Governments are not doing enough, and without pressure on the government, it is unlikely we will have the vaccine we need. This will take advancements in science and a realistic understanding of the cost of building production capacity. While difficult, this is not an impossible mission.

## Summary Background on Pandemic Influenza

Eric Toner, MD, Senior Associate,  
Center for Biosecurity of UPMC

- *Timeline:* Past pandemics have happened quickly, moving globally in complex patterns involving many locations simultaneously. But within an individual community, the outbreak will likely consist of a wave lasting 6–12 weeks. However, outbreaks will likely recur in each community multiple times until most people are immune (recovered or vaccinated). Viewed globally, business leaders should prepare to be affected for 1–2 years.

### Organizations in Attendance

Aetna  
Alfred P. Sloan Foundation  
American Airlines  
Amtrak  
Bellwether Group, Inc.  
Boeing  
Center for Biosecurity of UPMC  
CISCO  
CitiGroup  
Continental Airlines  
Dell  
Deutsche Bank  
Fidelity  
First Marblehead  
Forest Laboratories  
IBM  
KeySpan  
Lehman Brothers  
Mellon  
MITRE Corporation  
National Grid  
New York City Department of Health and  
Mental Hygiene  
Pfizer  
Verizon

- *Threat:* The World Health Organization (WHO) has indicated that the current threat is at phase 3 (out of 6) on its pandemic alert scale. However, progression to the higher alert phases may not be gradual or linear. Consequently, response plans must be flexible.
- *Current Vulnerability:* We are more vulnerable now than in 1957 or 1968 (the last two pandemics) because of the increase in global travel, greater urban crowding, just-in-time supply chains, reduced vaccine production capacity, a weakened public health system, decreased hospital surge capacity, and an older population with more chronic diseases and immunosuppressed people.
- *Comparing Pandemic Flu to SARS and Bioterrorism:* Even though SARS was a relatively small outbreak, it had an impact on most global companies. Travel restrictions, involuntary quarantine, and fever screening proved ineffective. However, disease containment during SARS was effective because SARS had a long incubation period, which allowed time for contact tracing and quarantine, and it was only contagious once the patient was very sick, which made patient isolation an effective intervention. As a result, there was limited transmission in the general community. In contrast to SARS, such disease containment measures are not likely to be as effective for pandemic flu because influenza has a very short incubation period and is contagious early with few or no symptoms. Therefore, extensive community transmission of influenza can be expected. As in the anthrax attacks of 2001, unreliable information and confusion should be expected during a pandemic. In fact, many issues overlap between bioterrorism and pandemic flu, including the need for medical surge capacity and situational awareness, decisions about the allocation of scarce resources, and mass distribution of medical countermeasures (antimicrobials and vaccines).
- *Disease Containment:* Because of the short incubation period and rapid spread of influenza viruses, it is very unlikely that a pandemic can be contained once there is efficient human-to-human transmission. When considering disease containment options, officials should be urged to carefully weigh the potential epidemiologic benefits against the probable societal consequences.
- *Status of Pandemic Influenza Vaccine:* Most of the world's population will have no access to vaccine. According to current U.S. plans, most Americans will not have access to a vaccine in the first wave of a pandemic, owing primarily to antiquated vaccine production technology and limited production capacity. The U.S. government has appropriated \$1.2 billion to stockpile 20 million courses of H5N1 vaccine by 2009. However, this vaccine will not be an exact match to the pandemic strain because the pandemic strain has not yet evolved. An additional \$1.6 billion has been appropriated to accelerate development of new "cell-based" technologies by 2011 in order to

- have the capacity to produce 300 million courses of vaccine within 6 months of the recognition of a pandemic.
- *Pandemic Influenza Vaccine Needs:* The pace of federal efforts is not consistent with the gravity of the threat. The intensity of U.S. and international efforts to augment vaccine production capacity should be greatly increased; the FDA should more rapidly approve the use of adjuvants; and there should be a national call for universal annual flu vaccination in order to create a financially viable market for vaccine manufacturers. Businesses can support this through employee seasonal flu vaccination programs. The U.S. and other governments should increase the level of effort and amount of funding for research dedicated to innovative vaccine production approaches and international vaccine production research. In addition, international licensing laws should be harmonized, and the U.S. government should make substantial investments in global access to vaccine.
  - *Status of Antivirals:* There is a limited supply of and production capacity for antivirals, which makes their widespread use for prophylaxis (prevention) impractical. For treatment to be most effective, antivirals must be started within hours of the onset of symptoms. Therefore, stockpiles of antivirals must be “forward deployed” to be quickly available. The U.S. government is planning to stockpile enough antivirals by December 2008 to treat 25% of the U.S. population (75 million people). However, there is reason to believe that much larger courses of treatment than normal (higher doses for a longer period) may be needed to treat patients infected with H5N1, and thus fewer people than anticipated would be able to be treated.
  - *School Closures:* The U.S. government has placed a heavy emphasis on early and prolonged school closing as a means of disease containment. However, schools are under local, not federal, control, and therefore school closure policies will likely vary by locality. The theoretical epidemiologic benefits of closing schools are unproven, and the societal consequences may outweigh the benefits.
  - *Government Preparedness:* Federal, state, and local public health agencies are struggling with limited financial and human resources and the need to balance pandemic preparedness with other priorities. WHO, which is leading international pandemic preparedness efforts, is hampered by a very small workforce, a limited budget, and a lack of enforcement authority.
  - *Hospital Preparedness:* The impact of a pandemic on an average U.S. hospital is predicted to be so severe that some form of healthcare rationing seems likely. Given that most hospitals are not prepared for a pandemic, are facing widespread personnel shortages, are cash constrained, and are operating at or over capacity, there is a real possibility that portions of the healthcare system could collapse in the event of a severe pandemic.
  - *No Reliable Triggers:* Many business leaders are trying to determine which government alerts and WHO pandemic levels can serve as reliable triggers for the implementation of different phases of their corporate emergency response plans. However, no such triggers exist. Instead, because the situation will be unpredictable, companies may take contradictory actions (e.g., one company sends employees home while another does not). Businesses would be well served by working together within regions and across industries to coordinate how decisions are made.
  - *Implications for Business:* Most experts believe that a pandemic will happen within the current strategic planning horizon. There are several potentially catastrophic “game changers” that could determine how people and businesses fare during a pandemic. These include: the potential collapse of hospitals, resulting in the loss of effective healthcare systems; prolonged infrastructure collapse over large areas or many local areas (e.g., transportation, telecommunications, financial services, and/or utilities); supply chain failures; and overly aggressive or misguided disease containment efforts that worsen disruption by causing higher levels of absenteeism and interruptions of vital business systems.

### *Summary Background on the State of Corporate Pandemic Preparedness*

David Wilkinson, Principal,  
The Bellwether Group, Inc.

- *Corporate Leaders Engaged in Pandemic Planning:* The majority (62%) of companies at the table consider pandemic preparedness a corporate priority, either “extremely important” or “very important,” and their corporate leaders are supportive and engaged in the planning process. Most pandemic plans have received corporate approval, and half of the companies have assigned pandemic flu monitoring officers. More than half the group reevaluated their Business Impact Analyses specifically for this threat, and nearly all have identified critical employees and positions.
- *Pandemic Planning Responsibility within the Organization Varies:* Plans are typically coordinated through the business continuity offices; however, according to survey results, 75% of plans are actually “owned” by the business units. Proximity of planners to the CEO varies considerably among the companies represented.
- *Outside Advisors Assist in Planning Efforts:* Many participants have embraced the assistance of outside advisors. Outside help comes in many different forms, including strategy consultants, medical vendors, subscriptions to Health Alert Networks, and communication with foreign health ministries. Companies reported receiving infor-

mation from the Centers for Disease Control and Prevention (CDC) and state and local health departments, among others.

- *Multiple Forms of Information Sharing:* Companies are employing many different forms of communication to facilitate information sharing. This includes toll-free telephone numbers, websites, email distribution, and blogs. A few have invested in automated alert systems. Some have also added and/or enhanced video telecommunication to support working remotely.
- *Personnel Policy Modifications:* The area of personnel policies is particularly sensitive and requires careful consideration. Many companies have already taken steps to prepare policy modifications that would allow and/or encourage employees to work from home, as well as those related to domestic and international business travel, meeting protocols, and the like.
- *Seasonal Flu Vaccines:* Most companies at the Roundtable make seasonal flu vaccines available to employees, either for free or a fee. However, few companies have systems in place to track who receives vaccines. This may be due in part to unresolved privacy concerns.

### *Summary Background on Hospital Pandemic Preparedness in NYC*

Isaac Weisfuse, MD, MPH, Deputy Commissioner,  
New York City Department of Health and Mental  
Hygiene (NYC DOHMH)

- *NYC Healthcare Resources:* New York City has 65 acute care hospitals, 22,000 licensed hospital beds, 163,000 full-time hospital employees, 27,000 licensed physicians, and 68,000 licensed nurses (RNs, LPNs).
- *Healthcare Limitations During a Pandemic:* Despite extensive resources in the NYC area, an influenza pandemic will present numerous challenges for NYC hospitals, including: their ability to expand and maintain bed capacity because of limited staff, space, and equipment; ethical implications of rationing care; regulatory barriers; keeping the “worried well” out of the hospitals; general hospital facility security; the implications of just-in-time inventory supply chains; and the already-existing financial fragility of NYC hospitals.
- *Shortfalls in Critical Care:* NYC DOHMH is estimating that there will be shortfalls in critical care and ventilatory capacity in hospitals during a pandemic, including appropriately trained medical personnel to manage patients and ventilators. In the event of a 1918-like pandemic, NYC DOHMH estimates that 9,454 ventilators will be needed. Based on a survey conducted by NYC DOHMH, there are 2,688 full-featured mechanical ventilators in NYC hospitals (60% of which were in daily

use during the 2004–05 flu season) and 1,385 full-time equivalent respiratory therapists. This results in a significant shortfall in ventilator capacity. It would cost between \$2 million and \$70 million, depending on the type of ventilator, to purchase the ventilators needed to fill this gap.

- *Federal Efforts:* The federal government has purchased some ventilators for the Strategic National Stockpile (SNS), but only 5% of NYC hospitals surveyed were familiar with the type of ventilators stockpiled in the SNS. To begin to address these issues, the NYC DOHMH has convened a Ventilator Advisory Committee, which includes respiratory therapists, to facilitate hospital evaluation of ventilators for purchase.
- *Planned Disease Control Measures:* Appropriate and effective community control measures for pandemic influenza are currently being hotly debated in the public health arena. NYC DOHMH plans emphasize the need for respiratory and hand hygiene and advocate staying at home when sick. Businesses should be encouraged to give their employees the same messages. School closures and canceling public gatherings would not be easy or very effective in New York City. For example, it is clear (looking at the implications of the December 2005 NYC transit strike) that shutting the transit system in the city has profoundly negative effects. NYC DOHMH policy will focus on risk communication and explaining the risk of traveling on mass transit, and, in the end, people will vote with their feet. Those who can walk to work will probably do so, with the added benefit of making the subways less crowded.
- *Role for Businesses:* Businesses can help hospitals by developing good relationships with their referral hospitals and community health centers, reinforcing the public health messages with their employees, and making sure that their companies’ medical staffs are affiliated with the Health Alert Network (messaging system for physicians and licensed medical professionals) and the Medical Reserve Corp.

### STRUCTURED DISCUSSION: CORPORATE STRATEGIES AND CONCERNS

#### *Emergency Response Planning and Leadership Command*

Considerable effort and investment in pandemic preparedness has already been undertaken by most major companies. A high priority has generally been placed on preparing these corporations for such an event, and most have pandemic plans either in place or underway. Most companies also have crisis management plans and communication capabilities in place that would be used in the event of a pan-

demically. These organizations are better prepared for pandemic influenza than they were 18 months ago. However, few if any consider themselves fully prepared, and all intend to continue to improve the preparedness of their enterprises going forward. Extensive testing of these plans and capabilities is the next step.

The anticipated high levels of absenteeism, including among leaders and managers, has encouraged planners to develop “bench strength” so that there is a larger pool of individuals capable of managing a crisis. This is being demonstrated through tabletop exercises in which key leaders are removed during the exercise, thereby forcing other managers to work through crisis scenarios. Lessons learned in these simulations, together with best practices identified through benchmarking, accelerate learning and enable continual improvement in preparedness.

Companies also face the question of “How much is too much?” While appreciative of the increased attention on business continuity planning, crisis managers must balance the focus on pandemic preparedness with other threats their companies face.

### *Working Remotely*

It is widely assumed that during a pandemic many employees will work from home. However, as a solution, this differs from company to company, and, depending on the industry, many have large portions of their workforce that cannot work remotely. The estimated ability of staff to work from home varies from 10% to 85%. Working from home is highly dependent on the resilience of the communications infrastructure, and countries differ widely in this respect. Companies that intend to incorporate working remotely as part of their response have invested in additional laptops, internal surge capacity, and remote access.

Allowing employees to work from home also presents new challenges in information security, regulatory compliance, and liability management. Although the technology exists to allow employees to work from home, some participants pointed out that regulatory and legal issues (especially for financial organizations) still need to be resolved. For example, in the financial industry, despite the existence of technology that enables trading from home, regulatory restrictions (NYSE and NASDAQ) require traders be physically present at the official location for supervision. Although these issues are being discussed among federal regulators, there has so far been no agreement to allow remote trading in an emergency. In addition to these types of regulatory issues, companies are struggling with how they will track attendance, handle security, identify employees who are sick, and address network congestion. It is, however, a core expectation that many employees will work from home during portions of a pandemic event. However, for many, working remotely is likely only a partial solution.

Encouraging employees to stay home when they are sick is a drastic change for both employers and employees, who often consider suffering through workdays sick as a “badge of honor.” This is an especially difficult issue for those employees whose income depends on commissions. Knowing who should and should not come to work is an area in which a reliable rapid diagnostic test, ideally self-administered (similar to a home pregnancy test), could make a significant difference. Such technology would allow businesses to identify their eligible healthy workforce, thus limiting the number exposed and helping manage the “worried well.”

### *Communications*

Effective communications with employees will be vital during a pandemic. It is essential for companies to be a trusted source of information, and communicating accurately and often will be essential. Prepackaged communication templates, policy modifications, and up-to-date personal contact data can help enable effective communication with staff. Effective liaisons with the healthcare community and business working groups also will be critical; establishing these connections must be done before an outbreak occurs as this will be hard to accomplish during a pandemic.

Private sector efforts to obtain and share accurate information with employees are complicated by the fact that there is no formal process for corporations to work with governments, particularly public health agencies, during an emergency. Therefore, most businesses rely on informal networks and contacts. Some businesses seek to hire individuals who have previously worked in government and who have contacts who can provide critical information in emergencies. In addition, public health agencies in each state, region, and jurisdiction are organized differently, requiring businesses to coordinate with many different public health organizations within each state. Since public health does not have the resources to consult with multiple businesses individually in the midst of an emergency, companies might consider bringing this issue to the attention of mayors and governors to request that information-sharing systems be put in place prior to a pandemic.

### *Taking Care of Employees and Facilities*

Companies need to take care of employees while also protecting the workplace. Investments in medical, janitorial, and critical office supplies are required because resupply during a pandemic will likely be difficult. Several companies anticipate using fever screening and believe it will be an important method to help reduce exposure at work. However, screening employees may not be particularly effective because infected people may be contagious presymptomatically and fever can be masked by medication.

In addition to enabling employees to work from home,

companies are developing plans to allow employees to return to work after recovering from illness or caring for family. Not only will these workers be needed to support the business of the company, but many will want to return to work for both financial and emotional reasons. It is human nature to grieve (especially following the death of family members, friends, or co-workers), and many will want to return to work to regain a sense of normalcy.

A number of organizations have made decisions about human resource policies to handle extended sick leave, compensation, employees who work on commission, and the like. Some companies have already determined that these policies will need to be reevaluated every 30 days during a pandemic. In order to help employees and their families, many companies are asking employees to provide updated contact information and in some cases are asking employees to provide vacation information in the event of an emergency. For example, in one situation, this allowed a company to rescue employees and their families who were on vacation in Lebanon in the fall of 2006 when violence broke out.

### *Resiliency*

Over the past decades, many corporations have moved or contracted operations to lower-cost areas of the world. Although this geographic diversification would prove successful in localized disasters, it will not protect companies against the affects of an influenza pandemic. Many believe the key to surviving a pandemic will be contingency planning at both strategic and tactical levels, focused on creating highly flexible response capabilities.

### CONCLUSION

It is clear that businesses have a substantial role to play during public health emergencies, and inevitably governments will be counting on their assistance during an influenza pandemic. Therefore, it is to the benefit of all businesses

and governments to work together prior to an emergency, to set expectations and to build the coordination and communication systems necessary to respond. However, this coordination may require businesses to be proactive with local, state, and federal leaders to assure that the necessary resources are directed to building these partnerships. It is essential that business leaders realize that government preparations for a pandemic, whether in the realm of vaccines, antivirals, surveillance, or disease containment, will directly affect their business, their employees, and their own families. The business community can have a tremendously positive impact on government actions, and there has never been a more important time to use their influence.

### ACKNOWLEDGMENTS

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