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## Pandemics: Prevention, Preparedness and Business Continuity Swine flu — An Impending Crisis?

*The timing is both unfortunate and extraordinary — as we struggle to find a way out of the worst financial crisis since the 1930s, we are suddenly faced with the possibility of a global influenza epidemic that threatens to disrupt business operations, shipping and travel and postpone recovery from the global recession. Over the past several weeks, the world has had to confront the potential for a full-blown pandemic following the very recent outbreaks of H1N1 Influenza A, more commonly known as swine flu. Between late April and early May 2009, The World Health Organization alert level on a scale from 1-6 reached a level 5, an undeniable indicator of the gravity of the problem; a phase 5 alert means that a global pandemic is imminent, and that the virus has proved capable of sustained human-human transmission and infecting geographically disparate areas. Though our primary concern about this new strain of flu is obviously health, a full-blown flu pandemic would certainly intensify the world's economic problems.*

*Swine flu has become widespread in the United States — with a significant number of cases in more than 30 states — and the numbers are projected to rise. So far, however, the virus in the United States has been mild and the more dangerous cases in Mexico — believed to be ground zero for the virus — seem at the moment to be leveling off in number. However, this current outbreak reminds us that a pandemic crisis can arise without warning at any moment, impacting global health, economies and governments. This issue of The Lipman Report® will examine the threat of pandemics, analyze the evolution to date of the current swine flu outbreak and discuss how best to prepare for these types of health epidemics that threaten both livelihoods and lives.*

### Flu Pandemics of the Past Century

What we call influenza is a virus that comes in three distinct varieties: two kinds of influenza A and one of influenza B. For an influenza virus to cause a pandemic, however, it must meet three major criteria: It must (1) possess a new protein to which there is little pre-existing immunity in the human population; (2) be able to cause illness in humans; and (3) have the ability of sustained transmission from person to person. For example, in the case of avian flu H5N1, the virus exhibited the first two of these criteria, but it did not exhibit the third, transmission from person to person. Swine flu, although seemingly not as lethal as the avian flu, exhibits all three of these qualifying criteria.

It is widely believed in the scientific community that viruses have undergone major genetic changes three times in the past century, resulting in pandemics: 1918, 1957 and 1968. (The 2005 avian flu, H5N1, is still being assessed.) The 1918 pandemic — known as the Spanish Flu — was a “bird flu,” which began in the spring of 1918 and went through three or four waves, lasting into 1920. The spread of the disease was propelled by international travel, much of which involved troop movements in 1918 because of World War I. Estimates of the total global flu deaths of the 1918 pandemic range from approximately 50 to 100 million victims, a greater number than even the infamous Black Death that ravaged Europe during the 14th century. American deaths from the 1918 pandemic were projected at 675,000, ten times as many as those killed in action in World War I. Tens of thousands died in the United States in the two pandemics of 1957 and 1968. This flu, called H2N2 but known as the Asian flu, killed an estimated two million people worldwide.

### H1N1 Influenza A

Like many potential pandemics before it, H1N1 has a number of unusual features that are cause for concern. What we know so far is that H1N1 is a new strain of virus that has been evolving for a long time — some scientists date its origin to an Indiana pig farm in 1987. A mixture of swine, avian and human flu, H1N1 appears to be very contagious between people; its contagion between swine and humans is still under debate. Not only has H1N1 flared up at a time of year when the flu season is normally ending, showing an unusual robustness in emerging outside the normal flu season, it is a new strain for which people have little or no advance resistance. H1N1 appears to be treatable with some antivirals such as Tamiflu and Relenza, but is resistant to another major type of anti-flu drugs called amantadines. This new flu belongs to the same H1N1 group as the 1918 pandemic virus, which killed millions. It appears to infect an unusually high percentage of young people; the median age of patients is 17. However, the fact that many early cases were students who had spent spring break in Mexico could make the flu's spread seem more common in teenagers. Worldwide, laboratories have now confirmed almost 6000 human cases of H1N1 in more than 23 countries. Outside the Americas, the country with the most cases is

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Spain. As seen in New York City, all the Spanish cases involve people who have recently traveled to Mexico — and in both locations most that have been affected appear to be recovering. However, it must be emphasized that these are only the reported cases; the fact that many infected are only showing mild to moderate symptoms and not seeking medical attention means that there may be many more undiagnosed cases around the world.

The rapidity with which scientists have uncovered some of the specifics of H1N1 is a feat made possible at least in part by the attention to flu virology brought to bear during the 2005 avian flu H5N1 threat. Within eight days of first taking notice of this new outbreak, scientists all over the world had compared notes and assembled the entire family tree of swine flu. However, as this flu continues to spread, concerns are still mounting about a serious pandemic. It is clear to most experts that the virus is still evolving and moving, and plotting its exact course is difficult to predict at this time. History has shown us that these viruses can quickly mutate and appear in colder months — when resistance is even lower — in an infinitely more virulent form. Mutations and/or acquisition of genes derived from other human or animal influenza viruses could turn the H1N1 virus into something much more transmissible than it is now. Even while some of the media attention this outbreak has received may be dwindling for the moment, scientists are not yet complacent about what may lie ahead.

### Prognosis of H1N1

Epidemiologists believe this influenza could evolve into one of the three following scenarios: (1) the influenza is in an early stage and will become more severe, (2) the influenza has reached its apex and will fizzle out, and (3) the influenza will fizzle out and after several weeks or months will return with a vengeance. The third scenario is in fact what occurred with the Spanish Flu in 1918; the flu appeared to dissipate during the spring only to return in August with devastating effect.

Fortunately, at this time many scientists predict that the most likely outcome is that the current swine virus will follow a fourth possible course, becoming a regular seasonal influenza. However, the threat of any flu mutating into something deadlier or other dangerous

new viruses arising is escalating due to population growth, climate change and increased contact between humans and animals. Like a hurricane, this 2009 flu may weaken and lose its potency, or may strengthen and become a tidal force to reckon with.

On the positive side, we can be grateful that our public health professionals are working around the clock to prevent this crisis from getting out of control. Our well-documented history of epidemics teaches us that our remarkable arsenal of treatments, effective public health measures, quick surveillance and rapid communications ability gives us a better understanding of what is occurring than populations facing pandemics had in the past. Consequently, efforts can be applied in a timely way to minimize the damage. The landscape of vaccines and anti-influenza drugs has dramatically improved over the past few years. Also, present technologies as well as manufacturing capabilities will allow us to make sufficient quantities of an H1N1 virus vaccine for the coming winter season. The World Health Organization recently announced that the world's vaccine makers had the capacity to make a maximum of 1.2 billion doses of a new H1N1 vaccine within six months after getting a seed vaccine, which the Center for Disease Control is now developing. There is, however, always a concern that in view of the world's population of more than six billion, the poorest countries will be unable to secure enough of the vaccine.

### Practical Steps for Infection Control

With pandemics clearly an ongoing threat even in this day and age, all organizations need to have a solid pandemic response plan in place. Health, hygiene, and infection control education and practices for employees and facilities should all be included in this plan. An organization should at least review all of its sanitary practices, make anti-bacterial gels available to employees, use alcohol for cleaning and provide hand sanitizers throughout each facility. Extra attention should be given to sanitation in high-risk areas, such as kitchens, washrooms, dining areas and other places where people congregate. When possible, there should also be access restrictions for certain facilities in areas where people are more likely to come in contact with the virus.

In addition, employees or other organization members should be mindful of symptoms and act responsibly to prevent transmission to others. Swine flu symptoms are

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similar to those of more standard strains of influenza, with symptoms that include: low-grade fever, body aches, sore throat, mild cough, headache, chills, fatigue and possibly diarrhea and vomiting. A person experiencing these symptoms should call his or her doctor immediately and stay home from work, school, or any other outside activity to prevent spreading the infection. **Patients with more serious flu-like symptoms, such as shortness of breath, should go to a hospital emergency room immediately.** Even people with mild signs of the flu, however, should stay home until 24 to 48 hours after all the symptoms have disappeared, or seven days after the first day they ran a fever of 100 degrees or more, whichever comes first. Someone who has come into contact with a confirmed case of swine flu should also stay home long enough to make sure they do not develop symptoms.

Medical professionals recommend the frequent washing of hands with warm soapy water, carrying a hand sanitizer at all times and wiping down doorknobs or other surfaces that receive a great deal of human contact such as elevator buttons and escalator railings. Covering one's nose and mouth with tissue when sneezing, coughing or blowing your nose — and telling others to do the same — is highly recommended. Practicing good hygiene and staying alert to changes in this evolving situation are vitally important measures to take during this dangerous health crisis.

### **Business Preparedness**

Employers are encouraged to provide a healthful workplace for their employees. Unlike natural disasters or terrorist events, an influenza pandemic will be widespread, affecting multiple areas of the United States and other countries all at the same time, often with multiple waves of outbreaks in the same geographic area. Across the country, businesses are preparing for a flu epidemic that public health officials claim could be imminent, focusing on two goals: Keeping employees as safe as possible and keeping operations running smoothly, even when employees are not at work.

Many of the procedures now being put in place are based on lessons learned from the experiences after the September 11, 2001 terrorist attacks or the avian flu scare of 2005. Some companies have opened emergency operations centers and activated response teams, while others are restricting travel, with

employees asked to stay away from the office after returning from an affected area. Many organizations with pandemic flu plans are redoubling efforts to make sure employees can access sensitive material from home when appropriate and meet via video conferencing. In some organizations, employees have been cross-trained to learn co-workers' duties should some employees be unable to work. A growing number of companies that dispatch employees around the world have developed crisis plans that include an enhanced ability to know where their people are at any given time, so that up-to-date information, both on business operations and on the virus, can be immediately communicated. Companies should also have plans in place to quickly evacuate employees from the site of an infectious disease epidemic.

It is also recommended as a precautionary measure that companies creating internal task forces stay current on the latest news and issues concerning the virus and to monitor the organization's preparations. The task force would include the chief operating officer along with representatives from different departments such as human resources, finance and operations.

Businesses should assess the impact that a pandemic disruption would have on staff, clients, suppliers, contractors, vendors, service providers and other dependencies, and try to effect as much advance damage control as possible, while keeping employees safe and healthy. It is important for business owners to prepare for a contingency that may threaten lives, assets and operations. An effective business continuity plan will minimize risk to employees and keep companies functional in the face of a pandemic or any other crisis. Business leaders are urging enterprises that haven't prepared such a plan to do so immediately.

In a world currently struggling to emerge from a financial crisis, one critical impact of this virus could be economic — and to a greater degree than just some missed days at work.

First of all, the curtailment of travel in the event of a pandemic or the perception of a pandemic would seriously affect consumer spending. Discretionary spending would decrease, as individuals forgo trips that

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would bring them into contact with large numbers of people at major sporting events, movies, restaurants and shopping malls. The virus could also directly affect production; offices and factories would shut down in areas where the flu was particularly rampant. International travel and trade could be affected as well, both voluntarily — as people avoid travel and refuse to buy products from the infected areas — and involuntarily, as states act to protect their populations. The greatest impact, however, would be psychological. In this ‘just in time’ economy where consumer confidence has already been deeply affected by the economic downturn, a pandemic would dramatically darken the international mood, with potential impact on governments. The economic downturn has already caused the nature of politics in many countries to shift and several governments — including those in Iceland, Latvia, the Czech Republic and Hungary — have been replaced; a pandemic could increase this political unrest.

History also shows, unfortunately, that epidemics lead to “the blame game” — counterproductive yet reflexive scapegoating of those thought to have caused the problem, such as when European immigrants were blamed for importing the cholera in the late 19th century and the Spanish flu in the early 20th century. Likewise, some politicians are now calling for migrant workers to be turned away from hospitals. Furthermore, a rash of scurrilous posts has appeared on the Internet, attributing the outbreak to the living habits of migrant workers.

Epidemics and pandemics also can create havoc though misinformation feeding public panic. For example, there are now boycotts around the world of pork products, despite well-established science that humans do not contract swine flu from eating pork. And in an act criticized by both the World Health Organization and the United Nations as rash and premature, Egypt’s slaughtering of a large portion of their pig population created violent clashes between police and the local slum dwellers who raise pigs as their livelihood.

### **Bioterrorism: A Worst Case Scenario**

Al Qaeda has been suggested as a possible instigator for the recent swine flu threat. Although there is no concrete evidence to support this allegation at this time,

we should keep in mind that terrorist involvement is always a distinct possibility with sudden health threats. The technologies supporting bioterror have exploded even faster than computing power; genetic engineering of viruses is much less complex and far less expensive than sequencing human DNA. Bioterror weapons, such as plagues or pandemics that are intentionally created to threaten civilians, are cheap and do not need huge labs or government support to develop — and might be very tempting to terrorists who want to create maximum impact at minimal cost.

*When dealing with health threats, the globalization of our world can be both a curse and a blessing; transmission of a dangerous virus can be rapid, but so can response. While many experts are now confident that the H1N1 A in its current form may not be as lethal as initially believed, the United States public health system and the World Health Organization deserve much praise for their timely responses and coordination. Whatever course this outbreak will take, however, the recent outbreak raises the issue of how best to respond to a genuine high-mortality pandemic with major consequences. The answer divides into two parts: how to control the spread, and how to deploy treatments. The experiences learned from the earlier pandemic episodes have served as an educational basis to confront this threat. We would be wise to regard this most recent scare as a needed wake-up call, and a possible warning of more dire health threats to come should this virus evolve in a more potent direction, or a new virus arise. A virus or bacteria transmittable by human-to-human contact with a high mortality rate and no existing cure would be a disaster of catastrophic proportions, and this scenario is always a possibility. As with every type of crisis, careful and effective planning and preparedness will help save lives and ensure that individuals, organizations and governments safely navigate these challenges. **The time for urgency is now.**®*



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