Infectious Disease in the Workplace
“People at Risk”

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Enterprise Risk Management

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Executive Summary

Consider the numerous times you have come to work while sick. You are feeling under the weather, but you have so much work to do, phone calls to return, deadlines to meet, so the show must go on. Rarely does the notion of spreading germs cross your mind. Unfortunately, this scenario is all too common and is one of the reasons infectious diseases spread so rapidly in the workplace.

As an example, between August 18 and December 25, 1987, 116 employees at the three futures exchanges in Chicago developed clinically diagnosed mumps. Three cases subsequently occurred in household contacts of affected exchange employees. Twenty-one persons developed complications; nine were hospitalized.\(^1\) The direct medical costs were over $56,000, with the total work loss probably in excess of 700 days.\(^2\) The potential tort liability was significant: the mumps virus induced premature labor in a pregnant employee. Fortunately, the labor was arrested, preventing a premature birth with the attendant liability for possible brain injury to the infant. The report of this epidemic does not discuss whether any of the infected men were rendered sterile.

Keeping crisis management and business continuity plans up to date and thorough is critical if you are to effectively protect your employees, customers, supply chain contacts, stakeholders, and business assets during an outbreak of an infectious disease. The threat posed to businesses by infectious disease is not new. However, modern travel, migration, demographic changes, commerce and even medical procedures (overuse of antibiotics causing microbial resistance) have greatly changed the dynamic of infectious disease outbreaks.

Within this white paper we discuss how disease in the workplace can cause high incidences of absenteeism, stress, productivity loss among employees, and a variety of economic consequences. Preventative risk management, recovery strategies, and planning steps will also be discussed.

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\(^1\) Mumps in the workplace – Chicago. MMWR 1988 Sep 9; 37(35):533-38

\(^2\) Available at [http://biotech.law.lsu.edu/Books/lbb/x618.htm](http://biotech.law.lsu.edu/Books/lbb/x618.htm)
Awareness of the Infectious Disease Threat

On December 13, 2007, 30-year-old Sarah Smith arriving in Chicago on an American Airlines flight from New Delhi, India. Sarah grabbed a quick dinner at an airport restaurant as she traveled from O'Hare's international terminal where she boarded a flight to San Francisco. About a week after the flight, Sarah went to the Stanford University Medical Center emergency department with a fever, chest pains and coughing up blood. She was diagnosed with the full-blown version of XDR-TB the abbreviation for extensively drug resistant tuberculosis, a rare form of TB that is highly contagious and difficult to treat. Sarah had learned in India that she was sick with TB but boarded the international flight anyway because she wanted to be treated at her local hospital in San Francisco.

Sarah has since been released from the hospital after months in isolation, but will remain quarantined at home for several more weeks, local health officials said. "We don't really want anyone right now to come into contact with her," said Dr. Marty Fenstersheib, health officer for Santa Clara County. The woman continues to take antibiotics, and a health care worker directly observes her taking her medication every day, a standard protocol for TB, Dr. Fenstersheib said. "She may have to take drugs for up to two more years to completely eradicate the disease," he added.

This true story was reported by several news sources, including Fox News, but it doesn’t stop there. The Center for Disease Control (CDC) identified 44 people from 16 states who were within two rows of Sarah on her flight. The CDC sent health officials in the 16 states a list of the names and asked for help in having them tested for TB. So far, they have uncovered a second case of TB after testing more than two dozen passengers, but no one knows about the people she interacted with between flights or after she landed in San Francisco. That’s part of the risk of infectious diseases – whether it’s TB, influenza or other debilitating diseases: people who are capable of spreading a highly contagious disease can travel the world within a matter of hours and disappear into the crowd. When people are at risk, the ability to continue business operations is also threatened. What would you do if Sarah was an employee of your organization and came to work, putting your workforce at risk? What would you do if one to two thirds of your employees did not show up to work for several weeks or months?

3 An "alias" is used to protect the patient’s identity
4 Available at http://www.foxnews.com/story/0,2933,351656,00.html
People at Risk Put Your Business at Risk

Today’s highly mobile, interdependent and interconnected world provides myriad opportunities for the rapid spread of infectious diseases, which is why it is so critical to update and expand your organization’s crisis management and business continuity plans to protect your employees, customers, supply chain contacts, stakeholders, and business assets. As illustrated by Sarah’s story, infectious diseases spread faster across the globe today than at any other time in history. Estimates show that over 2 billion airline passengers travel each year. An outbreak in any one part of the world is only a few hours away from emerging somewhere else.

Infectious diseases are not only spreading faster, they appear to be emerging more quickly than ever before. Since the 1970s, emerging diseases have been identified at a rate of one or more per year. During this same time period, the World Health Organization (WHO) has verified more than 1,100 epidemic events worldwide. The spread of infectious disease is not just a public concern, but also a business risk. Disease in the community will inevitably affect the workplace. If an organization has an inadequate communicable-illness policy and response plan, the repercussions from the spread of an infectious disease in the workforce could produce high incidences of absenteeism, stress and productivity loss among workers and further lead to economic consequences affecting business continuity and even liability.

The workplace is an incubator for diseases. Close quarters, exposure to poor personal health habits (failure to wash hands and inadequate practices to reduce spread of disease through coughing and sneezing), and the rapid spread of disease through international travel all lead to the increased likelihood of disease being introduced into the work environment. This is especially true in organizations that may have inadequate environmental/engineering controls or tolerate employees reporting to work when they are sick. In these environments, the rapid spread of disease, prompted by the speed and ease of international travel, increase the likelihood of the rapid introduction and spread of an infectious and debilitating disease. Traditional business continuity planning has consistently focused on preparing an organizational response to an infrastructure disaster. However, after an infectious disease outbreak, the infrastructure remains intact, but fewer people are available to run the equipment, manage the services and produce revenue. Most business continuity plans may not address the steps needed to mitigate the spread of an infectious disease within a workforce or the redeployment of people and skill sets required to adequately respond to an infectious disease crisis.

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Contagious Disease Captures the Headlines

Several exotic diseases, including Severe Acute Respiratory Syndrome (SARS), Norwalk-like viruses (NLV), Community-Acquired Methicillin-Resistant *Staphylococcus aureus* (CA-MRSA), Legionnaires’ disease and others, capture the imagination as they grab headlines. The media stories and spread of these diseases can cause widespread fear and panic, causing people to stay at home to avoid infection. Such absenteeism may increase if other events, such as school closures or failures in public transportation further inhibit employees’ ability to report to work. In addition to affecting personnel availability, the anxiety created by the emergence of a novel infection may also deter consumers from normal purchasing patterns and impede the supply chain from supporting business.

The re-emergence of several garden-variety infectious diseases such as measles and tuberculosis (TB) may cause an even greater impact on business than the more exotic conditions mentioned above. While TB remains a substantial health concern around the world, the prevalence of TB in the US has been dramatically reduced over the years. In fact, many have thought it would be eradicated just as smallpox has been. “However, the emergence of drug resistance in many organisms is reversing some of the therapeutic miracles of the last 50 years and underscores the importance of disease prevention.” Given that society is familiar with these conditions, they provoke less anxiety and people may not take appropriate precautions to avoid contracting and spreading disease. For example, in 2006, a measles outbreak occurred in Boston Massachusetts and over 1,000 employees of a financial institution were impacted. The infection at the Massachusetts firm was traced to an unvaccinated contract employee from Asia. By order of the Department of Health, the firm required employees who could have come in contact with an infected individual and who could not produce documentation of vaccination or serologic proof of immunity to be excluded from work for 21 days unless vaccinated within 72 hrs. In addition, the firm had to provide surveillance for 42 days after the last rash outbreak. The organization had to mobilize employees to be able to work from home, distribute the measles, mumps and rubella (MMR) vaccine, and make regular reports to the health department. In the end, 31 communities were impacted and 12,000 doses of vaccine distributed at a cost of $250,000. This figure does not contemplate the substantial cost to the business due to lost productivity, increased cost of benefits, etc. With the advent of the MMR vaccine, measles has been virtually eliminated in the United States. However, in other parts of the world, people may not have access to the MMR vaccination.

As an example of the financial impact disease can have on a business, research shows it costs an organization an average of $392 each day an employee is out with flu-related illness, and typically at least 15 percent of employees are out of the office each year due to the flu alone. Also, the typical flu keeps an employee out of the office for an average of six days.

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6 MMWR July 30, 1999 /48(29):621-629, Achievements in Public Health, 1900-1999: Control of Infectious Diseases
7 Available at [http://findarticles.com/p/articles/mi_m0EIN/is_2008_July_2/ai_n27878714](http://findarticles.com/p/articles/mi_m0EIN/is_2008_July_2/ai_n27878714)
Another example of rapid disease spread is the recently discussed connection between an infected healthcare worker (HCW) and the transmission of Bordetella pertussis (B. Pertussis – whooping cough) to newborns in a Texas hospital nursery in 2004. The healthcare worker, a nurse, had previously been fully vaccinated against B. pertussis during early childhood but her immunity had waned. During the time she was working symptomatically, she cared for 113 infants, 11 of whom subsequently had a diagnosis of pertussis, an attack rate of 9.7%. The county health department directed the hospital to contact the families of all infants who had been in its newborn nursery during the period of time in question (May 31 – July 17, 2004) so that the infants could be screened for respiratory symptoms and administered antibiotics as needed. The families of 158 infants who had been in the newborn nursery during that time were contacted; a total of 110 infants returned to the hospital for testing. Although this case was hospital-based, it offers a challenge to any business. How will the business respond to a sick employee who wants to continue working or is asked to continue working? This question should be addressed in the company’s employee health and communicable disease policies and relayed during company orientation.

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8 MMWR Weekly June 6, 2008/57(22);600-603 Hospital-Acquired Pertussis Among Newborns – Texas, 2004
Identifying What Is at Risk

An infectious disease outbreak produces a different set of challenges for service-oriented businesses compared to manufacturers. Organizations need to be aware and prepared for these events. Service providers have a higher degree of consumer interaction and thus may be more likely to spread infection exponentially, whereas supply chain issues may be more of a concern for manufacturing firms. Of course, supply chain disruption can impact service providers as well due to the manufacturers’ inability to produce, package and/or deliver the goods as promised. In the event of a disease outbreak, both business types could potentially lose key, trained personnel and potential customers to illness.

Additionally, communicable illnesses in the general population can result in various economic issues for businesses. These can include changes in demand for business services, challenges to reputation, human resource challenges, and legal issues. As an example, in 2003 the most severe economic impact from SARS occurred in the travel and tourism industry, with airlines being particularly hard hit. Decline in regional airline traffic reached 40-50%. During its four month run in Toronto, SARS killed fewer than 50 people, yet travel to and from Toronto plummeted overnight and ultimately cost the city’s hotel industry more than CAN$125 million. More than 15 thousand people were quarantined in their homes for ten days and many businesses (including banks) had to designate essential employees to telecommute. In the end, SARS is estimated to have reduced Canada’s GDP by 0.6%.

In another example of economic impact to business, a well-known healthcare firm recently cited impacts from the recent year’s severe flu season as a main driver in their first quarter 2008 $0.02 Earnings per Share decline. Furthermore, the Centers for Medicare and Medicaid Services (CMS) the largest single payer of health benefits, recently announced a revision to the Inpatient Prospective Payment System (IPPS), the primary government reimbursement mechanism for most short term acute care hospitals. These changes, effective FY 2009 (commencing October 1, 2008), support CMS’s value-based purchasing strategy (VBP) to pay providers for performance based on quality and not to reimburse the hospital for treatment associated with preventable hospital-acquired conditions (HAC) — including several infectious diseases. Commercial insurers are following suit. Health Partners in Minneapolis was one of the first insurers not to reimburse for what is considered preventable medical error. This list is expected to expand significantly, and although the financial impact of the change is not yet known, it is predicted to be significant.9

The economic consequences of an infectious disease breakout could also include increased litigation. In the United States employees are protected under the Occupational Safety and Health Act (OSHA), and the Health Insurance Portability and Accountability Act (HIPAA). If a business does not take the proper precautions, there is potential for various lawsuits, including: workers compensation, breach of privacy, discrimination, unfair labor practice, and negligence.

9 The Regulatory Impact Analysis for hospital-acquired conditions as reported in the Final Rule estimates saving (to CMS) for the next five fiscal years starting in FY 2009 to be $20 million per year. Federal register Vol. 72, No. 162/Wednesday, August 22, 2007/Rules and Regulations pp 48168
Preparing for an Infectious Disease Crisis

According to the CDC, each year in the United States 5% to 20% of the population gets the flu on average. More than 200,000 people are hospitalized from flu complications and about 36,000 people die from flu\(^{10}\). Many companies take no precautions to reduce the incidents and the attendant costs, mistakenly taking a “business-as-usual” approach. When they’re impacted by illness, these firms are often inadequately prepared to provide timely and accurate information to their employees and customers. They typically have not established a process to interact with public health agencies.

During an infectious-disease outbreak, these employers are likely to take the same wait-and-see response until it becomes too late. A better response is to develop plans and relationships with the local public health department and medical community to collect and monitor information as it becomes available. This enables employers to have access to critical information as it becomes available from local health authorities, the CDC and healthcare professionals. It avoids reliance on media reports and diminishes the uncertainties that occur immediately after a widespread disaster. The organization should also use this information in educating its employees and customers in how to respond to the health crisis. To do so effectively requires establishing a process for quickly contacting employees and customers at the time of the outbreak. The goal of this preparation is to improve customer and employee safety while diminishing the economic impact on the business of an infectious-disease crisis.

Preparation would also help an organization to assess current HR policies relating to absenteeism, payroll, healthcare and disability and make policy and program decisions relative to an infectious-disease outbreak before an incident occurs. These proactive steps will significantly reduce confusion, avoid hasty decisions regarding employee policies, support employee relations and strengthen customer confidence in the organization during an outbreak of an infectious disease.

\(^{10}\) Available at [www.cdc.gov](http://www.cdc.gov) [site accessed June 24, 2008]

\(^{11}\) The CDC has prepared a Business Pandemic Influenza Planning Checklist which can be used as a guide for other contagious diseases as well. Available at [http://www.pandemicflu.gov/plan/pdf/businesschecklist.pdf](http://www.pandemicflu.gov/plan/pdf/businesschecklist.pdf)
Risk Management Strategies

Without a business continuity plan that addresses the recognition, prevention, and mitigation of communicable diseases, employers will be unprepared to effectively and efficiently deal with significant absences, adjustments to benefit plans and other challenges that arise due to the spread of an infectious disease.

The repercussions of inaction during a disease outbreak are numerous; however, the risks can be hedged by having robust crisis management and business continuity plans in place. Such plans should consider:

- The role of government (local, state, national) during an outbreak
- The role of public health to:
  1. Provide vaccinations and forms
  2. Provide support for clinics
  3. Contact Tracing
  4. Laboratory Testing
  5. Control Guidelines

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12 Note: A document released on June 3, 2008 and available at [www.pandemicflu.gov](http://www.pandemicflu.gov) proposes guidance for businesses on antiviral stockpiling as part of an organization’s planning process for pandemic influenza. The guidelines state: “Private stockpiles, in coordination with public health stockpiles, would extend protection more broadly than could be achieved through the public sector alone and improve the ability to achieve the national pandemic response goals of mitigating disease, suffering, and death, and minimizing impacts on the economy and functioning of society.”
The role of Employer to:

1. Review and test your business continuity plan with particular emphasis on alternate suppliers or third party services at least annually
2. Update and exercise your communications plans for all stakeholders (i.e. employees, customers, financial interests etc.) as needed
3. Establish or reconfirm contact protocols to local, state and federal public health and public safety agencies. Understand their impact on your operations. Assure that the lines of communication are open and information is flowing
4. Understand and adjust, if possible, business contracts, including insurance policies, if you are unable to perform your duties (e.g. how do forced cancellations in your contracts impact your relationship with customers and suppliers.)
5. Evaluate your information services capabilities especially availability of working from home
6. Develop and test a medical or wellness plan that includes vaccinations, antiviral medicines, exposure reduction/avoidance and education of employees
7. Become knowledgeable of the legal ramifications if your organization is considered a ‘critical infrastructure’ and you have ‘special responsibilities that you can no longer perform’

In order to be prepared prior to an outbreak, it is important to explore these steps, stockpile any needed equipment and supplies and document the economic impact and recovery procedures.
The Threat Is Not Over

Pandemic flu is an infectious disease that continues to be a threat, even if it’s not making as many headlines as it used to. If you have already developed pandemic plans, these prevention strategies might be familiar to you. Reviewing these plans as to their applicability and responsiveness with new scenarios such as a measles outbreak will be beneficial. For example, the measles outbreak at the financial institution in Boston, Massachusetts, meant that their office space was not accessible and IT equipment needed to be procured and distributed to employee’s offsite so that operations could continue. This needed to be accomplished quickly and efficiently while tracking new usernames and passwords for this “extra” equipment. While the financial institution’s continuity plans had outlined strategies for IT protocols in the event of a disaster, policies needed to be revised to address this new and unanticipated situation: existing infrastructure was in place, however, personnel could only access it remotely.

Next Steps

Planning and preparing these prevention steps now, before an incident occurs, could mean the difference to continuing your business or shutting it down. Your primary goal is to keep workers safe, minimize exposure and put a plan in place to preserve your workforce and the skill sets necessary to keep your business in operation. A secondary goal is to plan your recovery to full operations as soon as possible.

Risk managers need to partner with their Human Resources counterpart and work with corporate communications to:

1. Create business continuity and crisis plans to address the people side of business continuity following an infectious disease outbreak
2. Establish a rapid response process for identifying who takes charge at your locations to oversee the crisis management plan as well as how employees are contacted
3. Identify the skill sets needed to maintain operations at a minimum level
4. Work with your supply chain to identify their strategy for continuing operations during a disease outbreak
5. Review your contracts and determine if adjustments are needed to address your commitments during a disease outbreak
6. Create a framework for your media, shareholder and customer communications

It cannot be over-emphasized that a truly effective business preparedness and response coordination mechanism cannot be managed in a vacuum. Cooperation, collaboration and investment are necessary to ensure a safe environment for your employees, customers, and clients, while continuing business operations in the event of an infectious disease outbreak. Understanding the role of the employer, government, and public health authorities are vital components in the process. Even with good prevention methods, your business may still be exposed to an infectious disease outbreak. However, with well thought-out and tested crisis management and business continuity plans, the impact of an outbreak on your business may be significantly reduced.
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