

# **Water/Wastewater Sector Influenza Pandemic Planning, Preparation, and Response Reference Guide\***

## **Introduction**

Business continuity planning for the water/wastewater sector needs to consider the full range of threats facing system owners and operators. The world is facing a new threat in the form of an influenza pandemic and owners and operators must prepare now. Water/wastewater sector owners and operators need to enhance their business continuity plans to meet the threat of an influenza pandemic and integrate the plans with other existing plans for effective enterprise wide recovery. The current situation is dynamic with new information developing daily. This guide is based on the best information currently available and will be revised as this threat evolves.

## **Pandemic Defined**

A pandemic is defined as a global outbreak when a new virus is able to be transmitted between humans, resulting in serious illness and death worldwide. Health care professionals predict a very high probability that a pandemic will occur in the future but the timing and impact will depend on many factors that are difficult to predict.

## **Business Continuity Planning Assumptions**

The following assumptions are not predictions but are situational planning parameters for business continuity planning for an influenza pandemic:

1. The timing of the outbreak of a pandemic is uncertain and depends on many factors.
2. Once human to human transmission begins, the disease will spread very rapidly around the world within three to eight weeks.
3. Attack rate for the general population is expected to be in the range of 25 percent and these people would be very ill for up to a week.
4. Absentee rates for employees may be in the range of 35 percent for the duration of the pandemic due to illness and other factors such as needing to take care of family members. The pandemic could last for 6 months. Absentee rates will not be uniform across an organization and will be caused by employee illness as well as family care issues, inability to get to work, etc.
5. Persons who contract the virus are not expected to contract it a second time because they may acquire immunity. However, if the virus mutates, recurrences for the same individual would be possible.
6. Personnel will need to be managed differently to conduct essential business processes and to minimize the spread of the virus.
7. Not enough anti-viral medicines or vaccines will be available for the entire population. There may be none in the early stages and then limited quantities for select populations. Anti-viral medicines, such as Tamiflu, present a variety of difficult issues such as availability, effectiveness against specific virus strains, and dosage levels for pre-infection prevention as compared to post-infection treatment.

\*This guidance was adapted from a document created by the North American Electric Reliability Council, Princeton Forrestal Village, 116-390 Village Boulevard, Princeton, New Jersey 08540-5731.

8. A pandemic will strike in at least two waves, each lasting six to eight weeks. The first wave will peak in three to four weeks. The second wave will be three to six months after the first and will likely be stronger than the first. There may also be a third wave with characteristics similar to the second.
9. It will be important to provide accurate and timely information distribution to employees, labor organizations, and government before and during the pandemic.
10. Interdependencies with other critical infrastructures (communications, electricity, transportation, emergency services, etc.) as well as contractors and suppliers will be severely tested during an influenza pandemic.

### **Pandemic Phases**

The five phases listed below are based on information developed by the World Health Organization (WHO). The phases do not align exactly with the WHO phases as the ones below have been adjusted for use in business continuity planning for the water/wastewater sector. Pandemic response plans should be coordinated first with the appropriate local, state, and federal government agencies. In the absence of clear guidance, these five phases provide a useful planning framework.

<b>Phase</b>	<b>Consequences for Businesses</b>
<b><i>Phase 1: Pandemic Alert</i></b>	Governments, owners, and operators are notified a pandemic is possible; preparedness plans should be reviewed and updated.
<b><i>Phase 2: Pre-Pandemic</i></b>	Localized outbreaks are occurring with human-to-human transmission. Governments and water/wastewater sector entities begin to assign resources, prepare staffing, and implement contingency plans. Begin an information distribution program to promote appropriate responses by employees.
<b><i>Phase 3: Pandemic Outbreak</i></b>	General outbreaks across borders and continents. Implement response plans.
<b><i>Phase 4: Maximum Disruption</i></b>	High absentee rates would occur (35 percent) and fatalities would begin to impact the workforce. This phase could last for several months.
<b><i>Phase 5: Prolonged Recovery</i></b>	Recovery will be slow and the underlying economy will weaken. Altered business conditions will be prevalent for large and small firms. This phase will last for at least three months and possibly up to six months.

## Key Planning Actions by Function

The following table is intended to be used by water/wastewater sector entities to provide an overview of key actions, assigned responsibilities and expected completion date.

	Key Actions	Phase	Responsibilities	Due Date
<b>A. Maintain Awareness and Communicate</b>				
1	Medical resource should monitor for health threats via official bulletins or web sites.	All		
2	Provide employees, labor organizations, staff, and decision makers with the most up-to-date information available by documenting specific			
a.	Mechanism(s), speed, and ease of transmission by which the contagion is spread, and mode(s) of transmission, such as skin contact, airborne, etc.	All		
b.	Time the contagion remains active on surfaces, such as door handles.	All		
c.	Incubation period, time to exhibit symptoms, and maximum contagion period.	All		
d.	Expectations of employees, supervisors, and managers to help reduce the risk of spreading the disease.	All		
3	Initiate a business continuity planning process to establish accountabilities, and identify the criticality of operations including mutual inter-dependencies, the loss of which would have a direct and serious detrimental impact on the public. The occurrence of a severe storm or water system emergency during a pandemic should be considered.	All		
4	Identify those functions critical to continued operations, and identify the people needed to fill those positions. Pre-screen critical staff to ensure their willingness to receive an antiviral vaccine given the side effects that may occur. Involve human resources staff as well as established mechanisms such as joint health and safety committees early.	Alert		
5	Communicate early and regularly to staff, and include recommendations to minimize potential transfer of infectious agents within company facilities so that these measures can be practiced and internalized.	Alert		
6	Collaborate with local public health unit on the enumeration of antiviral shot recipients for staff performing critical functions in the event of an influenza pandemic outbreak.	Pre-Pandemic		
<b>B. Develop Plans</b>				
1	Develop appropriate five phase response plans and procedures including the following:			
a.	Initiating conditions for the recognition of the threat and appropriate response levels.	Alert		
b.	Identifying critical functions of the organization that must be kept in operation, e.g. control rooms, treatment plant operations, pump stations.	Alert		
c.	Identifying functions of the organization that can be suspended, e.g. meter reading [consider resulting need to estimate bills], training, etc.	Alert		
d.	Define the roles and responsibilities of employees, labor organizations, staff, supervisors, managers, and staff medical personnel during a pandemic.	Alert		
e.	Develop an emergency communications plan that includes key contacts, back-ups, medical contacts, communication chains, and processes to track and communicate business and employee status.	Alert		
f.	List(s) of staff critical to basic functionality of the organization.	Alert		
g.	Put in place plans to have an increased number of employees work from their home. Ensure IT systems infrastructure can support this action.	Alert		
h.	Plans and procedures should include providing support and assistance from human resources staff to employee families.	Alert		

	Key Actions	Phase	Responsibilities	Due Date
<b>B. Develop Plans (continued)</b>				
2	Consider the need to separate the work force to establish independent locations, and/or preserve a "clean" site.	Alert		
3	Consider expanding the use of teleconferencing and videoconferencing to limit the frequency of meetings and other types of face-to-face contact.	Alert		
4	Consider security issues and the limitations law enforcement agencies will face during an influenza pandemic.	Alert		
5	Consider developing joint operational plans with service providers, suppliers and key customers.	Alert		
6	Evaluate potential financial and budget impacts of interrupted operations and reduced revenues as well as unusual supply, material, or personnel costs.	Alert		
7	Evaluate potential insurance costs for increased medical costs.	Alert		
8	Consider the need to send home non-critical staff.	Alert		
9	Consider the need and conditions for more extreme measures such as sequestering on-site critical staff.	Outbreak		
<b>C. Develop Policies</b>				
1	Develop/update staff travel policy, including possible provisions for quarantine after returning from an area where an outbreak has occurred. This would apply to work and non-work related travel.	Alert		
2	Develop/update meetings policy.	Alert		
3	Develop a visitor policy, including a sign-in process that is to be implemented in the event of an employee health incident or threat. <i>This is a basic security policy that should currently be in place.</i>	Pre-Pandemic		
4	Consult with health authorities to update confidentiality policies to manage staff that potentially have been exposed, to allow effective exposure tracking to be completed.	Alert		
5	Develop/update telecommuting policy for office staff.	Alert		
6	Develop/update policies for employee compensation and sick-leave absences unique to a pandemic.	Alert		
7	Develop/update workforce deployment policies regarding teams and crews working together and the potential need to keep employees separated.	Pre-Pandemic		
<b>D. Drills and Exercises</b>				
1	Periodically test and verify preparedness plans and procedures via a simulation exercise, tabletop exercise or process walk-through.	Pre-Pandemic		
2	Test the IT infrastructure to verify its capability to perform under pandemic conditions (more employees working from home, increased teleconferencing and video conferencing).	Pre-Pandemic		
<b>E. Equipment and Facilities</b>				
1	Contract with a company that will clean/disinfect computer equipment, common areas, work stations, etc.	Pre-Pandemic		
2	Provide each workstation with a disinfecting agent in a spray bottle, a package of paper towels, and a package of latex/vinyl gloves.	Pre-Pandemic		
3	Determine what personal protective equipment will be effective and consider acquiring sufficient quantities (masks, gloves, and gowns). Availability of critical personal protective equipment may approach zero during the onset on an influenza pandemic. Some masks deliver better speech clarity than others. Some masks are designed to protect the person wearing the mask; other masks protect exposure of others from the person wearing the mask.	Pre-Pandemic		
4	If utility provides an on-site cafeteria, stock up on water, beverages, and food, especially items that do not require heating.	Pre-Pandemic		

Key Actions		Phase	Responsibilities	Due Date
<b>E. Equipment and Facilities (continued)</b>				
5	If appropriate, isolate the building, post signs stating temporary quarantine at all exits, and restrict electronic card access to critical staff. <i>Restricting electronic card access will require pre-pandemic actions/analysis.</i>	Disruption		
<b>F. Response Actions</b>				
1	By Employees			
a.	When an employee has contracted or suspects that he/she has contracted a virus or has been exposed to a virus, the employee should seek medical attention and advise his/her supervisor.	Outbreak		
b.	The employee should keep his/her supervisor apprised of his/her condition.	Outbreak through recovery		
2	By the Employer when Outbreak Occurs			
a.	Advise the exposed or infected employees to contact their doctors and advise their supervisors.	Outbreak		
b.	Supervisor contacts the company medical or occupational health nurse to follow up on the employees.	Outbreak		
c.	Implement a process such that all employees/visitors to critical facilities are subject to an appropriate screening questionnaire to aid in identifying whether or not they are a potential risk, (i.e., have you visited a high risk location in the past week?). Post screening questionnaire(s) at all entrances.	Outbreak		
d.	If appropriate, contract a cleaning service/agency and request the disinfection of the affected employee's workstation and shared work areas as well as all shared equipment and facilities (including washrooms, kitchen areas, and meeting rooms). Assess the need for separation of staff.	Outbreak		
e.	Close non-critical common areas, such as exercise room, locker rooms, or even the cafeteria. If the pandemic has resulted in a "lock down" in critical operating functions (control rooms), determine how employees will be accommodated.	Outbreak		
f.	Assess the need to direct staff to maintain appropriate distances from each other.	Outbreak		
g.	Assess the need for complete separation of staff including the activation of any backup facilities.	Outbreak		
h.	Assess the need to vacate non-critical staff from the site.	Outbreak		
i.	Provide each workstation with a disinfecting agent in a spray bottle, a package of paper towels, and a package of latex/vinyl gloves. Have each shift employee wipe down all equipment and surfaces before and after each shift. Provide each workstation with sanitizing lotion with instructions on usage.	Outbreak		
j.	Provide regular communication to all staff of the latest medical advisories, and recommend adherence to all actions suggested.	Outbreak		
k.	Provide on-site critical operations staff with personal protective equipment.	Outbreak		
l.	If appropriate, isolate the building, post signs stating temporary quarantine at all exits, and suspend electronic card access.	Outbreak		
m.	Notify all staff on site to leave their full names, employee IDs, and after-hours contact numbers, including numbers where they may be potentially located, such as parents, other family, etc. Instruct all employees when they will be allowed to return to work, i.e. the following business day, not until notified, etc.	Outbreak		
n.	Have visitors provide their home and business contact numbers, as well as after-hours contact number(s) for follow-up.	Outbreak		

Key Actions		Phase	Responsibilities	Due Date
<b>F. Response Actions (continued)</b>				
3	By Medical Resource			
a.	Liaise with senior management.	All		
b.	Provide regular communication to all staff on the latest health advisories, and recommend adherence to all suggested actions.	All		
c.	Provide regular communication to all staff on any additional pandemic-specific requirements or information.	All		
d.	Advise that anti-bacterial waterless hand cleaner, anti-bacterial cleansers, and/or wipes will be placed at key communal areas	Pre-Pandemic		
e.	Advise any exposed employee to contact his/her doctor and to adhere to the advice given.	Outbreak		
f.	Advise any exposed employee to contact his/her direct supervisor immediately.	Outbreak		
g.	Advise the exposed employee to follow policies in place and not to return to work until directed to do so by their supervisor.	Outbreak		
h.	Request exposed employees to keep supervisors informed of their condition.	Outbreak through recovery		