

# Annotated Index

## Managing Pandemic Influenza

– A Guide for BC Industry and Commerce –

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## Absenteeism

An influenza pandemic may affect a significant number of employees at any given time, removing them from the workforce for a variety of reasons. Those who become ill are expected to be incapacitated for days or weeks. Other employees will choose to stay home to care for sick children or other family members. Some employees may refuse work that presents an unreasonable exposure to the possibility of infection.

Depending on your businesses reliance on people, absenteeism could significantly interrupt essential functions and lead to losses.

Businesses can plan for absenteeism in two ways. First and foremost, your organization can develop a staffing plan that anticipates the use of alternate employees for temporary assignment. These may include cross-trained personnel within the organization, recently retired staff who retain some skills, contractors, or temporary personnel available through a staffing agency. See also “Employee Re-assignment” and “Workforce Backup” in this Index.

Second, larger business may find it valuable to track employee absenteeism throughout the pandemic period. Internal monitoring of illnesses will help business leaders plan ahead for staffing needs.

## Acronyms

BC	British Columbia
BCAS	BC Ambulance Service
BCCDC	British Columbia Centre for Disease Control
CMHA	Canadian Mental Health Association
CRC	Canadian Red Cross
DFA	Disaster Financial Assistance
EOC	Emergency Operations Centre
ESS	Emergency Social Services
ICS	Incident Command System
MBO	Management by Objectives
MHO	Medical Health Officer
MOH	Ministry of Health
PEP	Provincial Emergency Program
PHAC	Public Health Agency of Canada
PHO	Provincial Health Officer
PSEPC	Public Safety and Emergency Preparedness Canada
SARS	Severe Acute Respiratory Syndrome
UBCM	Union of British Columbia Municipalities
WCB	Workers’ Compensation Board (WorkSafe BC)
WHO	World Health Organization

## Antiviral Medications

Antiviral medicines can be utilized to treat infected persons and may reduce the duration of illness by one or two days. Two recently licensed anti-influenza drugs, *oseltamavir* and *zanamavir*, reduce the harmful actions of the neuraminidase protein on the surface of the influenza virus, and have been effective against influenza types A and B.

Antivirals only work while a person takes them, and do not build up protection over time. They are effective for 70 to 90 percent of patients when administered within 48 hours of the onset of infection. The drug would need to be taken for the duration of the incubation period, usually 7 days.

In some cases, the judicious application of antiviral treatments could reduce the number of hospitalized patients. It is unknown what effect antivirals may have in cases of severe disease and the potential for mortality. It is possible for the virus causing a pandemic to develop a resistance to antiviral medications.

The manufacture of antiviral drugs takes several months and their availability cannot be assured at the time of a pandemic when international demand will be high.

National and provincial stockpiles will provide a limited supply in the early stages of a pandemic. The provincial health authorities control the supply and availability. It is likely that the Ministry of Health will distribute antivirals to priority groups, such as health care workers and other essential workforce groups. Businesses involved with health care delivery services should discuss with their health authority the potential use of antiviral drugs by workers who may be in close contact with infected persons.

## Assessment Tool for Influenza-Like Illness

*(adapted from the Pandemic Influenza Plan for the Vancouver Coastal Health Region.)*

Your business may decide to screen employees prior to coming to work or at the workplace to minimize the risk of a sick individual infecting others in the workforce. Sick employees are encouraged to stay home until their symptoms have disappeared.

Businesses may consider using an *Influenza-Like Illness Assessment Tool*, a form to determine if individual employees should be excluded from work due to illness.

### **Influenza-Like Illness Assessment Tool**

Please Check the Following:

Influenza in the general population is determined by the presence of 1, 2 and 3 and any of 4:a-c, which could be due to the influenza virus:

- \_\_\_\_\_ 1. Sudden onset of respiratory illness AND
- \_\_\_\_\_ 2. Fever greater than 38.0° C AND
- \_\_\_\_\_ 3. Cough AND
- \_\_\_\_\_ 4. One or more of the following
  - \_\_\_\_\_ a. sore throat
  - \_\_\_\_\_ b. joint aches
  - \_\_\_\_\_ c. muscle aches or weakness

Persons with influenza-like illness symptoms should avoid the workplace and remain isolated at home.

Persons who have been exposed within the last three days to someone with influenza-like illness should stay at home for three days until they are sure they are not ill.

Consider developing a workplace policy around when an employee is fit or unfit to work, such as the following example.

Fit to Work

- Recovered from Influenza like Illness (ILI)
- Immunized for longer than two weeks
- On antiviral medication
- No symptoms

Unfit for Work

- Has Influenza like Illness (see ILI Assessment Tool above)

Fit to Work with Restrictions

- Due to limited resources, persons with ILI may be asked to work with restrictions
- Recommend such individuals be isolated physically from other employees or customers
- Maintain meticulous hand hygiene and environmental cleaning

The criteria for determining fitness to work may depend on the size of the organization and the job responsibilities of the employee.

## Avian Influenza

Avian influenza normally infects waterfowl and can be transmitted to commercial poultry, particularly chickens and turkeys, by migrating birds, most notably wild ducks. The disease occurs throughout the world and was first identified in Italy more than 100 years ago.

All three human influenza pandemics in the last 100 years (1918, 1957, and 1968) arose from mutated forms of avian influenza.

There are 15 known subtypes of the avian influenza virus. The one called “H5N1” is of particular concern at present, though it at the current time it is not transmitting from human to human. There have been instances of human illness from this virus associated with the handling of dead or infected poultry. Human cases have been reported by the World Health Organization in six countries: Cambodia, China, Indonesia, Thailand, Turkey and Viet Nam.

For more information on the current status of avian influenza in the world, regularly monitor the World Health Organization website at:

[www.who.int/csr/disease/avian\\_influenza/country/en/index.html](http://www.who.int/csr/disease/avian_influenza/country/en/index.html)

## BC Centre for Disease Control (BCCDC)

The BC Centre for Disease Control (BCCDC) supports British Columbia’s comprehensive program of communicable disease and environmental health prevention and control. From its main facility on 12<sup>th</sup> Avenue in Vancouver, the BCCDC partners with the province’s health authorities, Medical Health Officers, and the Provincial Health Officer.

In consideration of pandemic influenza, the BCCDC works with the Provincial Health Officer, the Ministry of Health, and other key partners to develop, test and refine the provincial pandemic plan.

In the pre-pandemic phase, the BCCDC engages in such activities as refining vaccine priority groups according to the epidemiology of the influenza virus circulating at the time, establishing allotments of vaccine and antiviral medications based on need, and developing protocols for immunization and antiviral distribution.

During a pandemic, the BCCDC bears responsibility for preventing undue vaccine wastage and hoarding, as well as the equitable distribution of antiviral medications. It

will communicate the immunization protocols and priorities via the news media. The BCCDC will collect and share updated information on vaccine coverage, and the overall number of cases and deaths related to the pandemic.

In the aftermath of a pandemic wave where immunization played a role, the BCCDC will work with the Ministry of Health to evaluate the vaccine coverage by targeted risk groups and the effectiveness of delivery of vaccine to the public. The organization will assess the effectiveness of the vaccine program in reducing the number of severe cases and mortality.

You can learn more about the BC Centre for Disease Control from their website at:

[www.bccdc.org/](http://www.bccdc.org/)

## **Business Continuity**

The term “business continuity” refers to the capability to continue delivering products and/or services during and immediately following an emergency or disaster. In essence, business continuity means an organization has the backup capacity of facilities, equipment, utilities, information, and human resources required to continue key functions when primary resources have been impaired.

Businesses with existing continuity plans should ensure such plans apply in a pandemic event, and that core business activities can be sustained over several weeks if there is high employee absenteeism. Some ideas on promoting business continuity during a pandemic include the following:

- Identify your organization’s essential functions and the individuals who perform them.
- Build in the training redundancy necessary to ensure that work can be done in the event of an absentee rate of 25-30 percent at any one time.
- Consider the potential interruption of essential government services during a pandemic.
- Determine which outside activities, such as transportation systems, are critical to maintaining operations and develop alternatives in case they cannot function properly.
- Identify who will be in charge and make decisions within your business concerning services during a pandemic/emergency episode.
- Determine the mechanisms for regular reporting to your executive staff during a pandemic episode.
- Prepare a contact list of all internal and external client and partner agencies and stakeholders, including all senior staff within your business.



- Arrange alternate forms of employee transportation to work in case public transportation becomes a problem.
- Consider the option of staff living at the work location or alternative work location for some period of time.
- Prepare site-specific notification for office closures and contacts for the public/clients.

Public Safety and Emergency Preparedness Canada (PSEPC) offers a guide on business continuity for business and institutions in Canada. You can access this information at:

[www.ocipep.gc.ca/info\\_pro/self\\_help\\_ad/general/busi\\_cont\\_e.asp](http://www.ocipep.gc.ca/info_pro/self_help_ad/general/busi_cont_e.asp)

For commercial business operations, the SARS crisis in 2003 presents some interesting lessons related to business continuity, summarized below from reports prepared by the City of Toronto.

1. Expect employees to be absent due to a number of reasons. They may be ordered into quarantine by public health officials, home taking care of sick family members, or ill themselves. Make sure at least two people know how to do the same job for critical functions.
2. Develop a clear policy of supporting an employee ordered into quarantine to keep the disease from spreading throughout the workplace.
3. Reduce the introduction of the influenza virus to the workplace by visitors, such as customers, sales personnel, suppliers, and service technicians. Develop policies about who should be allowed access and under what conditions.
4. Consider separating essential staff from potential exposure by providing bunks and food (see “Sequester”).
5. Develop policies and infrastructure that allow employees to work from home.
6. Set aside a contingency fund to help the business over a period of low income, or establish access to a line of credit.
7. Check medical and disability insurance policies to ensure coverage for situations such as pandemic influenza, including employee time if ordered into quarantine.
8. Keep employees informed on the number of internal cases and deaths, and how workers can protect themselves and their families.
9. Establish and train an “infection countermeasures team” to clean surfaces regularly.
10. Curtail the delivery of some services, i.e., marketing, so staff can be re-assigned to other duties to ensure continuity of essential services.

## Business Impact Analysis

In developing a Business Continuity Plan for Pandemic Influenza, determine which functions are essential and need to continue, and those that may be temporarily suspended.

Absenteeism may affect some business operations more than others. Temporary loss of specialized workers may have more impact than the absence of many unskilled workers.

The corporation may suffer unavoidable financial consequences associated with a pandemic, in terms of both increased expenditures and reduced income. These financial risks are important to understand ahead of time.

Some steps to consider in business impact analysis:

- Identify consequences that may result from a reduction in any essential service or function.
- Assess the impacts on business from absences among key personnel.
- Determine the potential impact of restrictions on business-related domestic and international travel, such as border closures and quarantines.
- Consider the circumstances and staffing levels that would lead to shutdown in each business unit or overall.
- Anticipate increased costs associated with sick-leave benefits, death benefits, and re-staffing to replace lost employees.
- Review insurance policies for pandemic coverage.
- Assess potential financial impacts of pandemic, including a breakdown by business unit, where feasible.

## Call Centres

Business emergency plans may take into account the need for call centre services during both response and recovery for a range of hazards, including pandemic.

A number of call centres may be active in any one community at the time of a pandemic, each performing a specific function:

- Health services call centre to provide medical care information.
- Local government call centre to provide information about local government services, e.g., status of utilities, business closures travel restrictions.
- Businesses reporting of the status of operations.

Your business call centre could serve three purposes:

- To provide information to employees, suppliers, customers, and other stakeholders, and to address questions about policies and procedures.
- To provide basic non-medical information about the status of the business, including the latest information about any facility closures, the number of cases in the organization, and services being offered.
- To provide information links to medical care call centres, such as those operated by health service organizations in your region.

## Case Fatality Rate

This term refers to the proportion of all influenza cases that result in death among a given population. See also “Clinical Attack Rate.”

## Cleaning the Workplace

The transmission of viral and other infections can be reduced by effective cleaning of environmental surfaces. Workers can infect themselves with the influenza virus after handling objects from a room where an infected person has been, then touching their eyes, noses, or mouths.

Influenza viruses can survive on soft, porous surfaces for 8 to 12 hours, and on hard surfaces for 24 to 48 hours.

The most frequent source of infection from the inanimate environment is contaminated equipment. Horizontal surfaces have a higher potential to hold virus particles than vertical surfaces or ceilings. Cleaning and disinfection of common touch surfaces (handrails, door knobs, sink/toilets, computer keyboards, and telephones) are required.

Simple cleaning with a detergent is sufficient, according to Health Canada guidelines, although some sources advise to disinfect with 5% solution of bleach.

For more information on cleaning and disinfections, consult your health authority and view the document available from Health Canada entitled, *Infection Control Guidelines - Hand Washing, Cleaning, Disinfection and Sterilization in Health Care*.

See also “Infection Countermeasures” in this Index.

## Clinical Attack Rate

The “clinical attack rate” refers to the proportion of a population that contracts a clinical illness (also called the gross attack rate). A clinical illness in the event of pandemic means an influenza case that results in some measurable economic impact, such as the loss of at least one-half day of work or a visit to a physician’s office.

The clinical attack rate for the next pandemic cannot be estimated without first observing the virus in a population. It would not be unexpected, however, to see 15 to 35 percent of a population contract the disease over a period of 6 to 8 weeks in the first wave of a pandemic.

## Closure of Facilities

The Medical Health Officer has the authority under the *Communicable Disease Regulations* of the *Health Act* of BC to institute community-based infection control measures, including closure of community facilities.

*Section 18* – “A medical health officer may order a publicly or privately operated school, public swimming pool, bathing beach, theatre, recreation hall or any other public gathering place to be closed for the purpose of controlling the spread of a communicable disease.”

Examples of public gatherings include:

- Transportation (ground, rail and air)
- Childcare
- Schools
- Retail settings
- Workplaces
- Places of worship
- Funerals
- Community events (cultural/sporting)

There are no firm guidelines in Canada that can be used to determine when to close specific facilities, or when to remove the closure order. However, the Vancouver Coastal Health Authority developed the decision matrix shown below to assist in identifying facilities that may be closed in an influenza pandemic.

		Exposure Intensity		
		High (very crowded, impossible to manage)	Intermediate	Low
Exposure Duration	Prolonged Duration (> 4 hours)	<ul style="list-style-type: none"> <li>• Child day care</li> <li>• Elementary &amp; high schools</li> <li>• Post-secondary institution (including dormitories)</li> </ul>	<ul style="list-style-type: none"> <li>• Enclosed workplaces</li> </ul>	<ul style="list-style-type: none"> <li>• Open-air work environments</li> </ul>
	Intermediate Duration (1 to 4 hours)	<ul style="list-style-type: none"> <li>• Entertainment venues</li> <li>• Sporting venues (participants and spectators)</li> <li>• Special events (e.g., 2010 Olympics)</li> </ul>	<ul style="list-style-type: none"> <li>• Day tours via buses, boats</li> <li>• Weddings, funerals</li> <li>• Business conventions, trade shows</li> </ul>	<ul style="list-style-type: none"> <li>• Restaurants</li> <li>• Shopping malls</li> </ul>
	Short Duration (< 1 hour)	<ul style="list-style-type: none"> <li>• Public transit during rush hour</li> <li>• Retail stores during major sales events</li> </ul>	<ul style="list-style-type: none"> <li>• Public waiting areas and lines (e.g., banks, store check out lines)</li> </ul>	<ul style="list-style-type: none"> <li>• Convenience stores</li> </ul>

Priority for cancellation / restriction consideration at first confirmation of local cases

Cancellation / modification of event / activity considered as local circumstances evolve

Ban / cancellation unlikely to be of value – Advise public on means of personal protection

(Adapted from Vancouver Coastal Health Authority Pandemic Influenza Plan – March 2005)

Extended activities in crowded conditions pose the greatest risk due to the high intensity and long duration of exposure. These are indicated in the upper left corner of the matrix. Activities in other boxes, proceeding toward the lower right, present lower risks of disease transmission.

**The decision-making process and the criteria for closures may need to be modified once the prevailing conditions can be determined at the time of the pandemic.** The severity of the pandemic strain and the stage of the pandemic, as it unfolds globally, will be considered when making this determination.

Businesses with facilities that may be ordered closed may consider shutting down business operations altogether for the time during which buildings may be closed. Plan to secure all facilities and properties that may not be staffed for an extended period.

For more information on facility closures, refer to the *Canada Pandemic Plan Annex F*.

## Effects of Pandemic

The effects of pandemic influenza depend directly on the nature of the virus that causes the illness. Expected effects of an influenza outbreak may include:

### Health Effects

- Sudden onset of symptoms, including cough, fever, aching bones and joints, and severe weakness
- Complications include the potential for pneumonia and dehydration
- Death can ensue quickly in some cases where the virus infection causes pneumonia, or over a longer term due to complications.

### Community Effects

- Traditional health service facilities may be overwhelmed with demands for care.
- Illness among local government employees may mean an interruption of critical community services, such as water supply, waste disposal, sanitation, and maintenance of infrastructure.
- Orders to close schools, businesses, entertainment venues and churches could disrupt community life.
- Shortages may appear for essential goods, including food and medications.

### Social Effects

- Fear of close proximity to people may isolate many in a community; normal information channels will be closed.
- Stress and psychological trauma among survivors from dealing with illness or death among family members, interruption of critical community services, loss of employment, and financial losses.
- Historically, families have self quarantined, particularly young children during a contagious disease outbreak.
- Some urban families may move their children from urban high population areas to rural low population density areas.
- Self-imposed isolation will impact business and the economy for a period which will likely extend beyond the announced end of the pandemic.
- Large numbers of staff, particularly those not designated as mission-critical by their employer, may choose to stay at home.
- There may be a very heavy demand from staff to work from home.
- Employment activities that require face-to-face interaction may cease.

### Economic Effects

- Some companies could go out of business from a sudden and persistent drop in demand for services, especially small to mid-size enterprises.
- Many community residents may face temporary loss of jobs.
- Reduced cash flow within the community.
- Adverse ripple effects in the world-wide investment community.

How people react in a pandemic may have more influence than the illness itself. Consumer confidence is likely to drop during a pandemic and change patterns of purchase and consumption. The economic impact of a pandemic may be evident for some time following an event.

Business sectors that may suffer a decline in sales during and following pandemic influenza include:

- Tourism
- Retail, hospitality and other discretionary expenditures
- Enterprises that depend on specialized labour input
- Enterprises that export a substantial amount of their production or require significant imported stock for their production
- Enterprises that depend on just-in-time supplies, particularly those with numerous suppliers
- Enterprises that bring people together, such as public transport, restaurants, theatres, sporting events and casinos
- Property owners of high density, multi-storey apartments
- Resource producers

Some businesses will undoubtedly experience more impact than others. A few may actually experience increased demand, as was seen with the SARS event. Areas that may experience increased demand include:

- Telecommunications
- Home office suppliers
- Businesses that offer reduced face-to-face meetings, such as online transactions, videoconferences, self-service functions, and vending machines
- Domestic goods suppliers
- Security and safety suppliers
- Personal wellbeing goods and services

For more information on the economic effects of pandemic, refer to Erik Bloom’s “Potential Economic Impact of an Avian Flu Pandemic on Asia,” and Sherry Cooper’s “An Investor’s Guide to Avian Flu,” noted in the References section of this Index.

## Emergency Operations Centre (EOC)

An Emergency Operations Centre (EOC) is a pre-designated facility established by an organization to coordinate emergency response and business continuity during an emergency.

During a pandemic, a business may activate an EOC to support emergency operations, such as infection countermeasure teams, sequester teams, and call centres.

## Employee Health Policies

With the means of virus transmission in mind, every business should identify reasonable opportunities to alter the physical environment to shield workers from potential exposure. In some cases, a simple plastic barrier or addition of a washbasin, along with soap and paper towels, may make a difference.

Each place of business should develop a context-driven *Infection Countermeasures Plan* after assessing the risks of influenza exposure. Such a plan should lay out the policies and procedures for actions during the pandemic period, such as:

- Facility Cleaning
- Personal Hygiene
- Stay-Home Policy
- Limit Face-to-Face Contact
- Sequester

Refer to “Infection Countermeasures” in this Index for more detail.

Every business should anticipate the importance of clear employee policies regarding leave for sick days, bereavement, and caring for ill family members. Wage policies should be in place for overtime, especially where employees may be expected to sequester themselves to continue the performance of essential organizational functions.

Protecting workers during a pandemic falls within the bounds of occupational health and safety. Be aware that WorkSafe BC (the B.C. Workers Compensation Board) has developed guidelines for worker protection that every business should consider. It would be wise to involve existing members of workplace safety committees in devising practical methods for protection, including the development of an *Infection Countermeasures Plan*.



## Employee Re-assignment

A pre-pandemic agreement with an employee union could allow for the re-assignment of staff members to other emergency support duties, such as call centre services or home support phone contact.

Businesses may already have plans in place for operating critical functions during labour disputes. These plans may be adjusted to meet needs during a pandemic. For example, organizations could consider existing staff reduction plans for implementation during the pandemic waves, such as offering customer support services by following a Sunday or holiday schedule.

Businesses should discuss the potential for employee re-assignment with their Occupational Health and Safety Committee and union representatives to ensure a clear understanding of the risks and emergency operational needs. Consider adding a clause to union agreements whereby members are permitted to work in other functions outside their job descriptions during organizational emergencies, such as pandemic influenza.

## Employment Policies

Business policies should be reviewed and revised to address the following potential questions that may arise during a pandemic:

Bereavement – Will staff members be allowed personal leave following death in the family? How about an unmarried partner or personal friend? Does leave include pay? If so, for how long?

Care of Family Members – Will staff be allowed personal leave to care for a family member? How about another household member, such as a roommate? Does leave include pay? For how long?

Light-Duty Jobs – If an employee has been ill and wants to return to work as soon as possible, can light-duty jobs be assigned until he or she regains full strength?

Overtime – Will staff be paid overtime if they are required for response or recovery during a pandemic? How about salaried managers? What about employees asked to sequester themselves to continue critical business functions?

Quarantine – Will an employee receive pay if he or she is ordered into quarantine following possible exposure to influenza? For how long?

Sick Leave – Will existing sick leave policies be extended if required for an employee suffering complications from influenza?

Temporary Staff – What policies apply to temporary staff working longer than one year?

Vaccination – What policies are used to identify priority employees for vaccination? Will vaccination include family members of critical employees?

Wages Upon Facility Closure – Will staff be paid if business facilities are closed by order of the Medical Health Officer? What if closure is caused by another reason, such as lack of suitable staff or utility failure?

## Epidemiology

Epidemiology is defined as “the study of the patterns, causes, and control of disease in groups of people.”

## Essential Community Services

If influenza reaches businesses that deliver essential public services, such as electrical power and telecommunications, entire communities or regions may suffer through absenteeism among critical members of the workforce. Identifying essential services is an important step in anticipating such effects and taking steps to protect these important functions.

Perhaps of some interest to businesses in identifying essential services is the list of “Critical Infrastructure Sectors” prepared by Public Safety and Emergency Preparedness Canada (PSEPC) in their 2004 report for the National Strategy for Critical Infrastructure Protection. The table below summarizes the critical infrastructure sectors and samples from a national perspective.

Sector	Sample Sub-Sectors
1. Energy and Utilities	Electrical power (generation, transmission, nuclear) Natural gas Oil production and transmission systems
2. Communications and Information Technology	Postal / Shipping Telecommunications (phone, fax, cable, satellites) Broadcasting systems Software Hardware Networks (internet)
3. Finance	Banking Securities Payments System

Sector	Sample Sub-Sectors
4. Health Care	Hospitals Health-care facilities Blood-supply facilities Laboratories Pharmaceuticals
5. Food	Food safety Agriculture and food industry Food distribution
6. Water	Drinking water Wastewater management
7. Transportation	Air Rail Marine Road Pipeline
8. Safety	Chemical, biological, radiological, and nuclear safety Hazardous materials Search and rescue Emergency services (police, fire, ambulance and others)
9. Government	Government facilities Government services (for example meteorological services) Government information networks Government assets Key national symbols (cultural institutions and national sites and monuments)
10. Manufacturing	Chemical industry Defence industrial base

PSEPC notes the complex interdependencies among these infrastructures and the potential for cascading effects in communities. In identifying essential services, a business should keep these interactions in mind, especially in identifying utilities and outside suppliers that enable local delivery.

If your business offers an essential community service, discuss with your health authority the minimum staffing levels required for business continuation and the following actions:

- Identify the potential for critical employees to receive antivirals and vaccines on a priority basis.
- Inform the health authority of the number of personnel who qualify for priority status.

- Arrange for antiviral medications and vaccine for essential workers, if deemed appropriate.
- Prepare documentation for each employee receiving antiviral medications and immunization.

## Gross Attack Rate

The gross attack rate refers to that portion of a population that becomes clinically ill from influenza. Clinical illness means an influenza case that results in some measurable economic impact, such as the loss of at least one-half day of work or a visit to a physician's office. Also called "clinical attack rate."

## Hand Washing

Hands can play a significant role in acquiring influenza and in transmitting the virus from one person to another. Worker hands may pick up virus particles by simply contacting contaminated objects and surfaces.

Businesses should enforce strict adherence to hand-washing procedures among employees during an influenza outbreak. Good hand washing is more likely to prevent infections than excessive cleaning and disinfection.

For guidance on hand washing in the workplace, consult your health authority and review Health Canada's *Infection Control Guidelines - Hand Washing, Cleaning, Disinfection and Sterilization in Health Care*.

## Health Act of BC

The *Health Act* regulates the control of communicable diseases to protect the public from health hazards. It also provides an important mandate and set of powers for Medical Health Officers in British Columbia.

Under the Health Act, a Medical Health Officer (MHO) has the authority to order and institute a number community based infection control measures:

- Close community facilities, e.g. schools, community centres, and convention centres
- Close businesses, e.g., entertainment and sports facilities
- Cancel group events, e.g., meetings, churches
- Restrict travel and the movement of people

- Screen travelers at ports of entry
- Order the isolation and/or the quarantine of individuals or groups

You can view the Health Act through the BC Government website at:

[www.qp.gov.bc.ca/statreg/stat/H/96179\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/H/96179_01.htm)

## Health Authorities in BC

Health authorities in British Columbia are independent corporations and do not report directly to the Ministry of Health. Each of the five regional health authorities has its own Chief Executive Officer, Chief Medical Health Officer (MHO), and operational structure.

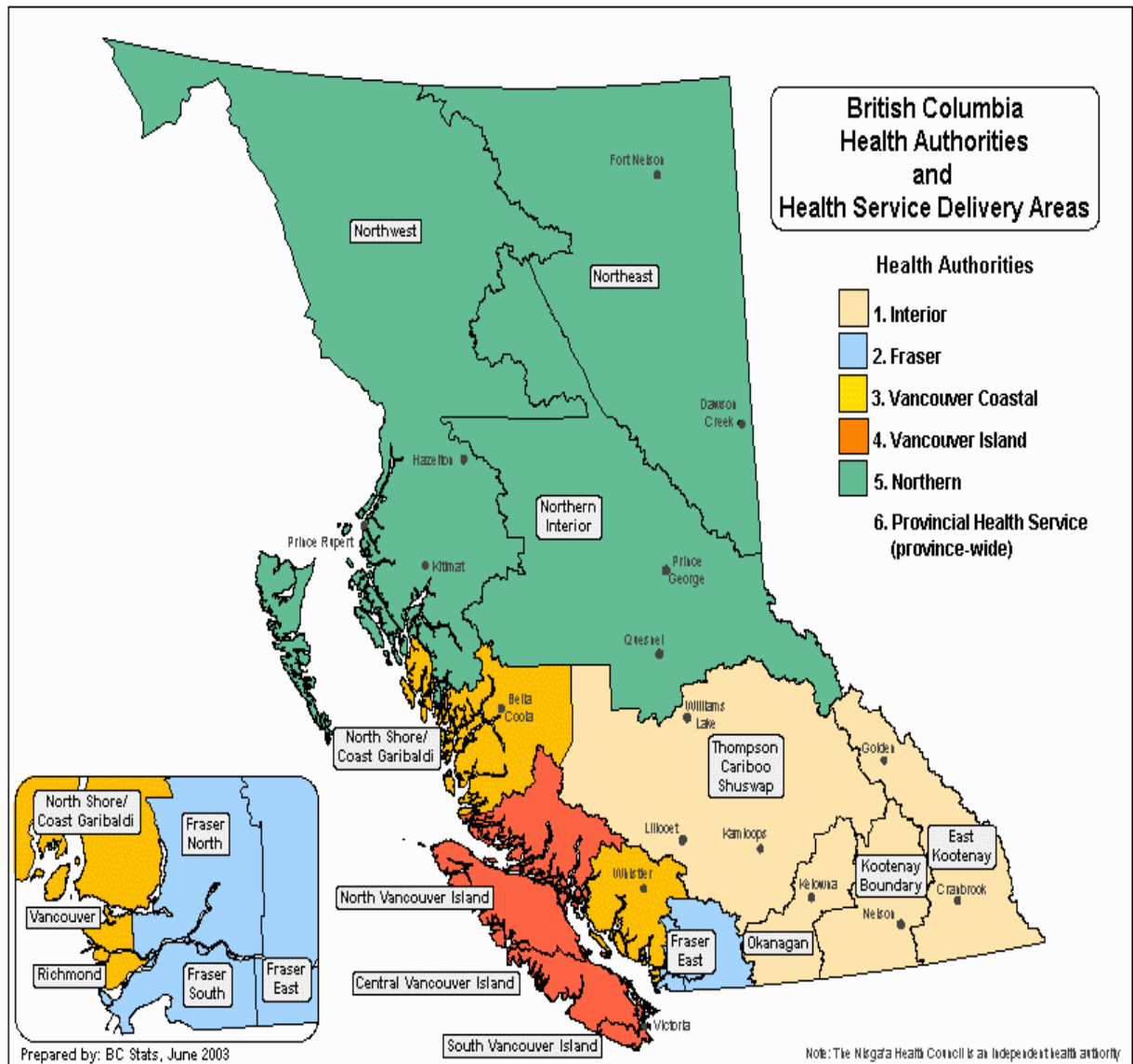
The five health authorities are:

- Northern Health Authority
- Interior Health Authority
- Fraser Health Authority
- Vancouver Coastal Health Authority
- Vancouver Island Health Authority

A sixth health authority is the Provincial Health Service, with province-wide coverage.

Health authorities were created under the *Health Authorities Act* to plan, organize, and deliver a range of facility and community-based health services to either a designated geographic region or to target populations.

Refer to the map on the following page showing health authority boundaries.



The Chief Medical Health Officer in each health region is responsible for preparing and maintaining a *Pandemic Influenza Contingency Plan*. The role of the health authority in each region is to provide services that meet the priority health needs of member communities. They manage the threats and response to the health side of the picture, including these actions:

- Provide information on the number of cases, hospitalizations and deaths from influenza
- Deliver vaccines and antiviral drugs
- Establish and maintain communications in their regions
- Provide leadership in the distribution of emergency public information

Businesses should meet with regional and/or local health authorities to gain an understanding of the risks associated with pandemic influenza, and to review their respective plans.

## Health Canada

Health Canada provides nationwide coordination for the influenza response. This organization is responsible for national surveillance, in cooperation with the World Health Organization and other nations. A National Pandemic Influenza Committee with representation from provincial, territorial and the federal governments will coordinate a national influenza response.

Health Canada also obtains and distributes vaccines, and develops national guidelines for dispensing antiviral medications to protect health.

Health Canada public health bulletins are available at:

[www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)

## Immunization

Using an influenza vaccine is a proven method for reducing the gross attack rate during an outbreak. However, a new vaccine specific to a novel influenza virus will take some time to develop, test and manufacture, perhaps four to six months and maybe longer.

Canada has limited capability to manufacture the vaccine in sufficient quantities to immunize everyone. In addition, there will likely be world-wide competition for supplies. A vaccine is unlikely to be available during the first wave of pandemic, but may be available during the second wave. Some strains of the virus may require two doses of the vaccine, given one month apart.

### Federal Government Responsibilities

- Obtain a suitable supply of vaccine.
- Distribute the vaccine to provinces, territories, and First Nations.
- In case of a national shortage, the National Pandemic Influenza Committee has set priorities for which groups of the population will receive the vaccine. See Priority Groups.”
- Establish immunization standards and priorities.

### Provincial Ministry of Health Responsibilities

- Maintain provincial vaccine depots.

- Distribute vaccine to regional health authorities.
- Establish provincial immunization standards and procedures.

#### Regional Health Authorities and Local Health Units

- Implement immunization plan for the health authority.
- Order and distribute vaccine.
- Arrange sites, dates, times and staffing to administer vaccine.
- Administer vaccine.
- Monitor progress and problems with immunization.
- Request immunization support of local governments as necessary.

## **Infection Countermeasures**

The application of infection countermeasures is common practice within health care settings. Infection control outside of health facilities, such as in other workplaces, would also help manage the spread of infection. These procedures may be as simple as regular cleaning of surfaces and ensuring that staff members frequently wash their hands.

A business organization should develop an infection countermeasure plan specific to their places of work. In order to develop countermeasure guidelines, the organization should have a clear understanding of how the virus is transmitted to and among its workers. Consult your health authority and refer to “Transmission, Means of” in this Index.

#### *Elements of an Infection Countermeasures Plan*

Facility Cleaning – Develop a cleaning plan, including procedures for surface cleaning, in consultation with health authority. Cleaning should address handrails, door knobs, counter tops, sinks and water taps, computer key boards, and telephones, among other surfaces that may be touched by many people. Assign cleaning duties to specific staff members and provide the required training and equipment.

Personal Hygiene – Educate staff members on hand washing, cough etiquette, and using disposable tissues. Provide water basins and running water at convenient locations, and waterless alcohol-based sanitizers where water basins are not possible. Post instructions for hand washing in all workplaces, bathrooms, and eating areas. Monitor to ensure compliance.

Stay-Home Policy – Establish a clear policy that workers who show any signs of illness are to avoid the workplace for the duration of the illness. The organization should also consider a policy that employees will not report to the workplace if any person with whom they reside is infected, due to the high chance of spreading



the infection. Wherever possible, establish or expand policies and tools that enable employees to work from home with appropriate security and network access to applications.

Limit Face-to-Face Contact – The most effective countermeasure for influenza infection is to increase social distance (reduce face-to-face contact). As a consequence, businesses may choose to temporarily suspend some operations, such as advertising, auditing, or low priority activities requiring face-to-face contact. Restrict public access to building areas or facilities that support business critical functions to reduce the chance of introduced infection. Expand on-line and self-service options for customers and business partners.

Sequester – Because limiting face-to-face contact is a proven method of reducing the chance of disease transmission, businesses should consider the extraordinary option of sequestering groups of essential service staff, where an infection within a particular group could impact critical operations. Plan to provide space, bedding, food, water, medications, and communications either at the workplace or nearby hotel or motel.

Collaboration is the key to success in infection countermeasures. Businesses should work in partnership with health authorities and local health units, drawing upon their subject matter expertise, to develop sound and simple infection countermeasures. Engage union personnel in the planning process, as well as representative employees from every business unit.

Refer to the *Canadian Pandemic Influenza Plan, Annex F*, for more details on infection countermeasures. The Plan is available through the website for the Public Health Agency of Canada at: [www.phac-aspc.gc.ca](http://www.phac-aspc.gc.ca)

## Influenza

The term “influenza” refers to a family of highly contagious viruses that cause illness by attacking the respiratory tract. In humans, the illness is characterized by the sudden onset of a fever, cough, sore throat, malaise, and general aches.

In children, influenza may also cause nausea, vomiting, or diarrhoea. In very young children, fever may not be prominent. Older persons often experience fever and sometimes chills, but these symptoms may not be prominent.

There are three types of influenza: A, B and C – only A and B affect the human population. Two proteins found on the surface of an influenza virus are used to identify and label subtypes of influenza.

Hemagglutinin (H) refers to a protein on the surface of an influenza virus that helps the virus attach to body cells in the respiratory tract. There are 15 known types of hemagglutinin, and each is labelled 1 through 15.

Neuraminidase (N) is another protein on the influenza virus, and there are 9 known types. This protein helps the virus leave one cell in order to spread and infect other cells.

These two proteins are often abbreviated as H and N in identifying a specific virus. Subtypes of influenza A virus known to infect humans, for example, include H1N1, H2N2, H3N2 and, more recently, H5N1. The strain of a virus may be further identified by the geographic area where it first appears.

The threat of pandemic influenza is related to the introduction of a new subtype of influenza A in the human population.

## Information Strategy

Each business should consider a strategy for keeping key stakeholders informed, including internal personnel and external organizations.

An Information Strategy should be all-encompassing and include the following elements:

- The strategy needs to focus on internal employees, customers, partners, and other stakeholders
- The number of new and cumulative cases in the organization
- Any business facilities that are closed and those that remain open
- A workplace communications plan, identifying the bulletin boards, e-mails, and announcements that will inform the workforce
- In partnership with the health authority, distribute self-help guidelines to businesses and the public

Specifically, business organizations may wish to consider the following points in an Information Strategy:

Audience – The information strategy should focus on both internal employees and external stakeholders. Publications should be developed for specific audiences, such as the news media, the general public, workers and their families.

Content – Messages should inform staff of the risks of pandemic influenza, and the options available to them to reduce the risk. External messages will want to inform customers and suppliers on the status of business facilities and operations during the pandemic, to accurately portray product and service availability.

Methods Information Release – The Information Strategy should anticipate a multi-faceted program of information release, considering such options as radio and television, newspapers and newsletters, posted information, publications of handouts, and websites.

An Information Strategy for your organization may address:

- A coordinated centre for telephone information (see “Call Centres” in this Index)
- Worker education brochures and awareness sessions (see “Worker Education and Awareness”)
- Procedures for keeping absent employees informed on the status of the organization by means of phone calls, email, or website.
- Protocols for keeping your key customers, suppliers, and other stakeholders informed on the status of the business throughout the pandemic period.

## Insurance

Organizations that have arranged for business interruption coverage with a qualified insurer may wish to plan the collection of the following items in preparation for a claim:

- Historical sales records for the previous period and for the same seasonal quarter one year earlier
- Income and expense information from recent financial statements and/or corporate income tax forms.
- A record of pandemic-specific expenses incurred to continue or resume business operations. Such expenses could include temporary rental of telecommunications systems, unusual transportation costs, and storage space for stockpiled materials. Include receipts and records.
- Other business records useful in forecasting what corporate profits might have been had the pandemic not occurred.

## Isolation

Isolation refers to the act of removing persons with confirmed influenza cases from possible contact with those who have not been exposed.

## Masks

The *Canada Pandemic Influenza Plan* warns that masks are not a practical means of minimizing influenza transmission during a pandemic once the virus has entered a community. Discuss the general use of masks in your workplace with your health authority representative.

## Medical Health Officer (MHO)

Each health authority has a Chief Medical Health Officer and a number of other Medical Health Officers working within the region. Medical Health Officers provide the primary health interface with a business.

Under the *Health Act*, the Chief Medical Health Officer has the authority to enact community-based control measures that he/she believes are important in controlling the spread of influenza and minimizing its impact (i.e., the prohibition of public gatherings). Additional powers of the Medical Health Officer at the time of a pandemic include:

- Activate vaccine distribution and delivery, and seek assistance from local governments for vaccine and antiviral storage.
- Direct the delivery of self care, outpatient care, and hospitalized care.
- Train alternative care-givers.
- Identify and activate alternate care sites.
- Direct alternate transportation or the closure of transportation or travel routes and means.

Medical Health Offices can also order persons to be detained for quarantine under the *Health Act*. Medical Health Officers are authorized under the Health Act to proceed independently, including the authority to order the closure of buildings.

## Ministry of Health

Under the Emergency Program Management Regulation, the British Columbia Ministry of Health is responsible for determining the provincial government response to disease and epidemics. The Ministry developed the *British Columbia Pandemic Influenza Consequence Management Plan (Interim 2004)* in partnership with the BC Public Affairs Bureau and the Provincial Emergency Program (PEP).

Duties under the plan are assigned to the Provincial Health Officer, working with the BC Centre for Disease Control and Medical Health Officers in the regional health authorities.

Readers can access the *British Columbia Pandemic Influenza Consequence Management Plan (Interim 2004)* through the PEP website at:

[www.pep.bc.ca/hazard\\_plans/PI\\_Consequence\\_Management\\_Plan\\_2004-03.pdf](http://www.pep.bc.ca/hazard_plans/PI_Consequence_Management_Plan_2004-03.pdf)

## Mitigation

Mitigation includes activities taken to eliminate or reduce the probability of an event, or to reduce its severity or consequences prior to a disaster or emergency.

A business organization's Pandemic Planning Team may identify ways to reduce the potential for impact from a future epidemic, such as cross training employees to ensure critical business functions have backup personnel.

Some recommended strategies for mitigating a pandemic influenza outbreak include:

- Separate staff from public
- Develop infection countermeasures plan
- Vaccinate staff, develop hygienic habits
- Duplicate personnel capabilities
- Develop backup suppliers
- Develop contingency funds

## Morbidity

Morbidity is a medical term referring to “illness.” The morbidity of a certain virus indicates the number of people who become ill.

## Mortality Rate

The proportion of individuals in a population that die in a given period of time, often expressed as the number per 1,000, 10,000, 100,000, ... individuals in a population per year.

## Novel Influenza Virus

Three or four times a century, a radical change occurs in the genetic material of the influenza “A” virus and a novel virus sub-type will appear. Because it is a radically different strain, the immunity that people have developed against influenza throughout their lives may not protect them. Everyone is, therefore, susceptible to infection and will be at greater risk of developing severe complications like pneumonia.

In such a situation, the virus may spread rapidly around the world, and an influenza pandemic may result.

## Outbreak

The term “outbreak” refers to an increase in disease activity above expected levels. This observed activity is also called an epidemic.

## Pandemics, History of

Pandemic influenza involves the spread of a new strain of the influenza “A” virus for which there is no immediate effective vaccine. The virus causing a worldwide pandemic is characteristically highly contagious and virulent, with high rates of illness and death, as well significant social and economic disruption.

These types of events have occurred many times before in human history, and scientists have chronicled their frequency and consequences using available historical records.

<b>Date</b>	<b>Scope</b>	<b>Estimated Severity</b>
1173	Europe	Unknown
1510	Europe	Serious
1557	Europe	Serious
1580	Europe	Serious
1732	Global	Low
1742	Europe	Moderate
1761	N. America, Europe	Moderate
1767	N. America, Europe	Moderate
1775	Europe	Moderate
1800	Europe, China	Moderate
1830	Global	Low
1836	Europe, Australia	High
1847	Europe, Brazil, Caribbean	High
1850	N. S. Americas	Mild
1857	Europe, Americas	Mild
1873	N. America, Europe	Mild
1889	Global	Severe, 250,000 deaths
1918	Global	15 to 25 million deaths
1946	Global	Mild
1957	Global	Major
1968	Global	Major
1977	Global	Mild

Source: Laurie Garrett, *The Coming Plague*, pp. 634-635

Health experts warn that pandemic influenza strikes about three times a century. In the 1900’s, there were three influenza pandemics:

- The Spanish Flu, in 1918-19 (most severe: 40-50 million dead)
- The Asian Flu, in 1957-58
- The Hong Kong Flu in 1968-69

The current concern for the H5N1 virus in Asia highlights the near-term potential for an influenza pandemic, although the virus has not yet acquired the ability to be easily transmitted among humans.

Based on past events and our knowledge of the causes, medical experts predict that the world is overdue for a severe influenza pandemic. We do not know when it might occur, but all of the factors contributing to the risk are in place.

## **Pandemic Influenza Management Plan**

One way to organize a Pandemic Influenza Management Plan is by the 10 objectives outlined in the main document of this guide (see Section 4). The following offers a sample outline for such a Plan.

### ***Pandemic Influenza Management Plan*** – Detailed Outline –

- 1.0 Introduction
  - 1.1 Purpose of the Plan
  - 1.2 Scope of the Plan
  - 1.3 Responsibility for Keeping the Plan Up-to-Date
    - Name and Title
- 2.0 Response Organization
  - 2.1 Pandemic Manager
    - Name and Title
    - Roles and Responsibilities
  - 2.2 Pandemic Planning Team
    - Members
    - Roles and Responsibilities
  - 2.3 Monitoring Plan
    - Internal
    - External
- 3.0 Risk Assessment
  - 3.1 Exposure Points for Employees
    - Customer Service Counters, Rooms
  - 3.2 Facilities that May be Closed
    - Entertainment Facilities
  - 3.3 Organization's Role in Essential Community Services
- 4.0 Employee Health Protection
  - 4.1 Infection Countermeasures Plan

- Name and Title of Countermeasures Leader
- 4.2 Measures to Increase Social Distance at the Workplace
  - Telecommuting Policies, Equipment
- 4.3 Measures to Separate Staff from Customers
  - Web-based ordering, Telephone Services
- 4.4 Plan to Sequester Essential Staff
  - Who, Where, When, How will they be supported
- 4.5 Annual Immunization Program
  
- 5.0 Business Continuity During Pandemic
  - 5.1 Critical Business Functions
    - Functions that Must Occur Every 48 hours
    - Functions that Must Occur Weekly
    - Functions that Must Occur Monthly
  - 5.2 Pandemic Scenarios
    - Minor, Moderate, Severe
  - 5.3 Potential Business Impacts
    - Interruption of Supply
    - Drop in Demand
  - 5.4 Response Organization During Pandemic
    - Emergency Operations Centre Location and Personnel
  - 5.5 Options for Adapting Operations
    - Policies for Suspending Some Operations
  
- 6.0 Supply and Service Interruptions
  - 6.1 Supply and Service Sources
  - 6.2 Alternate Suppliers and Service Providers
  - 6.3 Stockpiles of Critical Resources
  - 6.4 Contingency Funds
  
- 7.0 Employee Vacancies
  - 7.1 Core Policy on Vacancies
  - 7.2 Critical Employee Capabilities
  - 7.3 Alternate Workers
    - List of Potential Alternate Workers by Business Unit
  - 7.4 Supporting Replacement Personnel
  
- 8.0 Employee Policies
  - 8.1 Employee Leave Policies
  - 8.2 Employment Policies for Use During Pandemic
  - 8.3 Policies to Support Workers During Pandemic
  
- 9.0 Employee Information
  - 9.1 Communication Methods
  - 9.2 Communicating Risk Information
  - 9.3 Content of Messages
  - 9.4 Keeping Staff Informed During Pandemic
  
- 10. Informing Other Stakeholders
  - 10.1 Key Stakeholders
  - 10.2 Communication Methods
  - 10.3 Content of Messages
  - 10.4 Keeping Stakeholders Informed During Pandemic



## **Pandemic Planning Team**

In managing risks for an event as complex as pandemic influenza, every business should first assemble a “pandemic planning team.” This team or committee should be empowered to select and implement the actions, policies, and procedures that best represent corporate interests.

The purposes of the pandemic planning team are to:

- Guide business actions in assessing risks, mitigating risks, and preparing for response and recovery.
- Collaborate with employees, health authorities, local governments, customers, suppliers, and other stakeholders in developing integrated response and recovery plans.
- Inform the corporate officers and employees of the status of pandemic influenza planning.

Business pandemic planning teams may include liaison with local partners (e.g., suppliers, utility providers, and customers) in advance of a pandemic to facilitate a coordinated response when pandemic influenza strikes.

## **Period of Communicability**

This term refers to the time a person who is ill with influenza can infect others. The period of communicability for influenza ranges from 24 hours before the onset of symptoms to 3-5 days after the onset of symptoms (may be longer in children and some adults).

## **Ports of Entry**

The federal government is responsible for all entry of persons into Canada. Under federal legislation, persons arriving at a port of entry into Canada may be screened by a “Quarantine Officer” and either turned away or placed in a federal quarantine facility.

During the SARS outbreak, the Canadian federal government screened passengers arriving in Canada.

## Preparedness

Preparedness means developing action plans, gathering the equipment and facilities implied in the plans, training the right people in the plan and with the equipment they will use, and exercising all of the elements with rigorous tests.

BC businesses may want to consider the following list of objectives and strategies summarized from the main Guide:

1. Get Organized
  - A) Appoint "pandemic manager."
  - B) Assemble a pandemic planning team.
  - C) Prepare to monitor the situation.
  - D) Begin pandemic plan.
2. Assess the Risks
  - A) Meet health authority and local government.
  - B) Identify exposure points for employees.
  - C) Identify facilities that could be closed.
  - D) Identify business's role in essential community services.
3. Protect Employee Health
  - A) Develop infection countermeasures.
  - B) Increase social distance at the workplace.
  - C) Identify ways to separate staff from customers.
  - D) Prepare to sequester essential staff.
  - E) Offer annual immunization.
4. Prepare Employee Policies
  - A) Develop employee leave policies.
  - B) Develop employment policies for use during pandemic.
  - C) Prepare plans to support workers during pandemic.
5. Plan for Business Continuity
  - A) Identify critical business functions.
  - B) Develop pandemic scenarios.
  - C) Analyze potential business impacts.
  - D) Prepare to adapt operations.
6. Prepare for Supply and Service Interruptions
  - A) Identify sources.
  - B) Stockpile critical resources.
  - C) Arrange for alternate suppliers, service providers.
  - D) Develop access to contingency funds.
7. Prepare to Fill Vacancies
  - A) Identify critical employee capabilities.
  - B) Arrange for alternate workers.
  - C) Plan to support replacement personnel.

8. Inform Employees
  - A) Develop communication methods.
  - B) Share risk information.
  - C) Advise staff of infection countermeasures and policies.
  - D) Plan to keep staff informed during pandemic.
  
9. Inform Other Stakeholders
  - A) Identify key stakeholders.
  - B) Confirm assumptions.
  - C) Advise stakeholders of your preparedness plans.
  - D) Plan to keep stakeholders informed during pandemic.
  
10. Prepare a Pandemic Influenza Management Plan
  - A) Prepare a Pandemic Plan.
  - B) Consult with others about the Plan.
  - C) Exercise the Plan to further improve.

Consult the Main Text for more detail on each objective.

## **Provincial Emergency Program (PEP)**

The Provincial Emergency Program maintains the BC emergency management structure for implementation among provincial agencies. PEP manages a provincially integrated response to pandemic, focused on consequence management, in support of health authorities and local governments.

PEP helped develop and is a signatory of the *BC Pandemic Consequence Management Plan*. Under this plan, PEP is responsible for:

- Establish and coordinate staffing of the PECC and PREOC(s), and provide support.
- Coordinate the preparation of provincial pandemic response directives.
- Provide overall direction for finance at the PECC and PREOC level.

See the PEP website for more information at:

[www.pep.bc.ca/](http://www.pep.bc.ca/)

## Provincial Health Officer (PHO)

Under provincial legislation, the Provincial Health Officer (PHO) has the authority to lead the Ministry of Health and other stakeholders in planning for pandemic influenza and implementing BC's preparedness plan. The Provincial Health Officer decides when it is time to activate provincial pandemic plans.

Under BC's *Health Act*, the local Medical Health Officer has the authority to enact measures to control the spread of influenza, such as the closure of public buildings and cancelling public gatherings. These responsibilities will remain under the discretion of the Medical Health Officer in each health authority. The Public Health Officer's role is one of guidance at the time of pandemic.

For the roles of the Provincial Health Officer before, during, and following a pandemic event, refer to the BC Centre for Disease Control's *British Columbia Pandemic Influenza Preparedness Plan*.

## Public Health Agency of Canada (PHAC)

The Public Health Agency of Canada is a public service organization under the leadership of Canada's Chief Public Health Officer, who reports to the federal Minister of Health. A separate organization, Health Canada, also reports to the Minister of Health.

PHAC focuses on chronic diseases, like cancer and heart disease, injury prevention, and response to public health emergencies and infectious disease outbreaks. The Public Health Agency of Canada works closely with provinces and territories to promote health among Canadians and to improve the national health care system.

For more information on the Public Health Agency of Canada, see their website at:

[www.phac-aspc.gc.ca/new\\_e.html](http://www.phac-aspc.gc.ca/new_e.html)

## Quarantine

The term "quarantine" refers to separating persons who may have been exposed to the virus from others who have not.

A Medical Health Officer (MHO) has the authority under the *Communicable Diseases Regulations* of the *BC Health Act* to institute community-based infection control measures, including the mandatory quarantine of persons suspected of carrying a disease.

Some key terms relating to quarantine include the following:

*Mandatory Quarantine* – Mandatory quarantine can be an order by the Medical Health Officer for either the quarantine of persons in a government facility or ordering persons to remain within their own residence.

*Quarantine Facilities* – Persons who are suspected of carrying a disease and who arrive at a Canadian port of entry would likely be quarantined in a public facility, which could be any facility from a hospital to a hotel.

*Residential Quarantine* – This allows for the Medical Health Officer to order persons to remain within their residence and avoid face-to-face contact until such time as it can be confirmed that they are free of infection. The management of residential quarantine orders is labour intensive. There must be a process to confirm that the persons in the residence are, in fact, adhering to the quarantine order.

*Self Quarantine* – When a wide-spread epidemic occurs within the general population, many individuals and families will choose to self quarantine by remaining at home and away from school and work. They will also avoid social contacts such as groups. Self quarantine is an effective way to reduce individual and family risk.

## Recovery

Recovery will likely occur immediately following the initial wave of illness, and include actions required to return the business to normal operations. If the illness associated with a pandemic is particularly severe or prolonged, this may require much time and effort. Coordinating with stakeholders will speed the process. The following summarizes the actions any business should consider during the recovery period.

### *Assess the Situation*

Any plans for recovery should be based on an accurate assessment of the facts, including workforce availability, status of suppliers, and viability of the market.

- Gather facts on the impacts of the pandemic to date, including number of employees needed by business unit, sales, response expenses to date, and outlook for the coming quarter.
- Meet with representatives of local government and utilities to assess status of essential community services required to operate the business units.
- If one or more business units closed during the pandemic wave, evaluate if it is worth re-opening.
- Assess facilities to identify any unsafe conditions that may have resulted from absenteeism or vandalism.
- Report findings to senior corporate officers.

### *Implement Business Continuity Plan*

The corporate business continuity plan should contain useful policies and procedures for application during pandemic recovery.

- Implement business continuity plan.
- Appoint a business recovery leader and team members. Identify alternates for all recovery positions.
- Announce activation of business continuity plan and ensure key managers understand their roles and responsibilities.
- If a business unit provides an essential service, focus on recovering capability to assist the community.

### *Support Affected Employees*

In the event of pandemic influenza, recovery actions may coincide with response, especially in helping workers struck by illness to readily rejoin the workforce. Just as a building hit by flood may require shoring and renovation, your current employees can return to service quickly if they are afforded the support they need. Discussion with health experts will no doubt help you explore elements of a Recovery Plan that focuses on the human resources on which your enterprise depends.

Employees may be emotionally traumatized by a severe pandemic. Depending on the mortality rate associated with the virus, your business may face the death of one or more employees. Such losses will inevitably impact remaining workers and suggest the value of stress counselling.

- Provide long-term stress counselling for staff. Help employees tell their stories.
- Acknowledge employee fatalities, e.g., ceremonies.
- Offer information and other support to affected workers and their families.
- Assign light-duty jobs to speed re-entry of affected staff to full working status.
- Determine ways to acknowledge employee fatalities, e.g., ceremonies.

### *Fill Vacancies*

To recover full functionality, your business may need to hire new personnel to fill temporary or permanent positions vacated by those affected by the disease. Some positions may be filled through redistribution of existing staff.

- Redistribute internal human resources temporarily, as appropriate.
- Select temporary staff to immediately fill essential positions while hiring is underway.
- Develop a hiring plan to replace incapacitated employees.

### *Recover and Reconstruct Records*

Disruption of the workforce may result in the incomplete collection of essential records, such as invoice information and orders. Restoring or reconstructing such records serves the corporate interest and may enhance income.

- If required, identify and recover critical records, e.g., related to income and expenses.
- Assemble information to report losses on financial statements.

### *Seek Financial Assistance*

- If corporate insurance policies provide business interruption coverage, initiate the claim process.
- Work with employee groups, unions, and suppliers to negotiate measures for cash flow protection.

### *Support Customers and Recover Market Share*

Recovery may involve building relationships with existing and new customers by listening to their needs and creating innovative solutions for mutual benefit.

- Acknowledge impacts to prominent customers and offer assistance in recovery, such as deferred payments, if feasible.
- Communicate your corporate status to customers. Keep them informed.
- Expand market share, where possible.

### *Support Suppliers*

Long-term recovery may mean supporting suppliers of critical materials and services. A little assistance to key suppliers may help preserve your corporate access to quality materials and services, and improve your overall financial position.

- Meet with affected suppliers to assess their needs.
- Identify how the corporation can assist suppliers in recovery, such as placing large orders.

### *Support Local Community Recovery*

Regardless of the location of the business market, it makes sense to support recovery in communities where employees live. The ability to return to the workforce depends in many ways the functionality of community elements, such as banking, child care, transportation services, and basic utilities.

- Work collectively with other local businesses to rebuild commercial inter-relationships.
- Support “buy locally” campaigns to help local businesses.

- Participate in community recovery programs by providing donations of funds, supplies, and direct services, where possible.

### *Collect Lessons Learned*

A pandemic event may involve more than one wave of illness. Businesses may be able to improve their position in a subsequent wave by implementing “lessons learned” in corporate pandemic response. “Debriefing” meetings are common practice following disasters, and allows your business to collect important suggestions from the experience.

- Conduct a full “debrief” meeting to identify ways to improve policies and procedures specific to pandemic influenza.
- Review and assess corporate efforts in mitigation, preparedness, response and recovery.
- Prepare a pandemic annex to the corporate Business Continuity Plan to record lessons learned.
- Prepare for the next wave of pandemic, if health authorities advise.

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**Atlanta Centre for Disease Control Influenza Information**

[www.cdc.gov/nip/flu/default.htm](http://www.cdc.gov/nip/flu/default.htm)

**British Columbia Centre for Disease Control**

[www.bccdc.org/](http://www.bccdc.org/)

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[www.bccdc.org/content.php?item=150](http://www.bccdc.org/content.php?item=150)

**British Columbia Ministry of Health**

[www.gov.bc.ca/health](http://www.gov.bc.ca/health)

*Pandemic Influenza*

[www.healthservices.gov.bc.ca/pho/pandemic.html](http://www.healthservices.gov.bc.ca/pho/pandemic.html)

*Health Guides on Influenza and Pandemic*

[www.bchealthguide.org/healthfiles](http://www.bchealthguide.org/healthfiles)

**British Columbia Provincial Emergency Program**

[www.pep.bc.ca/](http://www.pep.bc.ca/).

**Centres for Disease Control and Prevention (USA)**

<http://www.cdc.gov/>

**FluAid**

[www2.cdc.gov/od/fluaid/default.htm](http://www2.cdc.gov/od/fluaid/default.htm)

**FluNet (WHO)**

<http://oms2.b3e.jussieu.fr/flunet/activity.html>

**Health Canada**

[www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)

*FluWatch (Health Canada)*

[www.hc-sc.gc.ca/pphb-dgsp/fluwatch/index.html](http://www.hc-sc.gc.ca/pphb-dgsp/fluwatch/index.html)

*Influenza (General and Panflu information)*

[www.hc-sc.gc.ca/pphb-dgsp/publicat/info/influ\\_e.html](http://www.hc-sc.gc.ca/pphb-dgsp/publicat/info/influ_e.html)

**Nurseline (BC Ministries of Health)**

[www.bchealthguide.org/kbaltindex.asp](http://www.bchealthguide.org/kbaltindex.asp)

**Public Health Agency of Canada (PHAC)**

[www.phac-aspc.gc.ca](http://www.phac-aspc.gc.ca)

*Canada Communicable Disease Report*

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**United States Government Website on Pandemic Influenza**

[www.pandemicflu.gov/](http://www.pandemicflu.gov/)

**Work Safe B.C.**

[www.worksafebc.com](http://www.worksafebc.com)

**World Bank - Avian Flu**

<http://web.worldbank.org/wbsite/external/topics/exthealthnutritionandpopulation/exttopaviflu/0,,menuupk:1793605~pagepk:64168427~pipk:64168435~thesitepk:1793593,00.html>

**World Health Organization**

<http://www.who.int/en/>

*Influenza*

[www.who.int/topics/influenza/en/](http://www.who.int/topics/influenza/en/)

## SARS

The acronym SARS stands for “Severe Acute Respiratory Syndrome,” an illness caused by a coronavirus that developed in China in late 2002 and spread to different parts of the world over several weeks. SARS eventually affected about 8,500 persons and caused more than 900 fatalities.

SARS hit Canada in 2003. By August of that year, Canada reported 438 probable and suspected SARS cases, including 44 deaths. The majority of SARS cases and all deaths occurred in the greater Toronto area in Ontario, with additional cases reported in the Vancouver metropolitan area of British Columbia.

Response to the SARS outbreak put more than 25,000 residents of greater Toronto in quarantine. In addition to the psycho-social effects of SARS on health care workers, patients, and families, economic losses in Canada were substantial for such a relatively moderate event. Tourism alone sustained a loss of about \$350 million as compared with usual seasonal activity. Reduction in airport activity resulted in another \$220 million loss, and retail sales dropped \$380 million.

The SARS impact on tourism and related industries is an example of the long-term economic impact that may affect a community hit by pandemic influenza.

See also *Learning from SARS: Renewal of Public Health in Canada*, available through the Public Health Agency of Canada website at:

[www.phac-aspc.gc.ca/publicat/sars-sras/naylor/index.html](http://www.phac-aspc.gc.ca/publicat/sars-sras/naylor/index.html)

## Sequester Workforce

Limiting face-to-face contact is a proven method of reducing the chance of influenza infection. Businesses should consider the option of sequestering essential employee groups when an infection within a particular workforce could impact critical corporate functions.

“Sequester” means to remove a group of workers from potential exposure to the influenza virus. This action reduces to a minimum any interaction by essential workers with other persons, including family members, with the intent of halting the potential to acquire the virus.

As an example, one commercial bank in Ontario set apart their information technology staff during the SARS outbreak by providing sleeping accommodations and food at the workplace. Sequestered workers did not return to their families until the danger passed. Sequester may also be accomplished through arrangements with a nearby hotel or motel.

While sequester would reduce the risk of infection, it may be difficult to gain cooperation from the workforce. Family concerns may limit voluntary participation. It may be advisable, therefore, to consider incentives, such as:

- Provide families of essential workers with special care, such as contracted home support services or antiviral medications to encourage voluntary cooperation.
- Consider workforce rotations for extended duration events.
- Identify ways to monitor families of sequestered employees to ease mutual concerns.
- Provide psychological support to sequestered workers.

## **Social Distance**

Research has shown that a contagious person can infect others within a distance of about one metre (3 feet) through coughing and sneezing. Social distance (the physical distance between persons) can then be considered in reducing risk.

Businesses may wish to consider these potential strategies for increasing social distance during a pandemic:

- Prepare policies allowing telecommuting for employees. This may require appropriate security and remote network access to applications and data.
- Consider design elements to reduce risk of exposure, such as a revised office layout to increase the physical distance between employees, using the one-metre rule.
- Consider suspending non-essential work and releasing employees on leave.
- Identify non-essential work that may be cancelled for the time of increased exposure.
- Prepare to rotate worker shifts to eliminate overlaps and provide sufficient time to disinfect workplaces between shift occupancies.
- Develop guidance for employees returning from affected areas worldwide, including voluntary quarantine, in consultation with health authorities.

## Spanish Flu

Much has been written on the severe pandemic influenza that circled the world over several years beginning in 1918. Scientists remain unclear on how and where the 1918 pandemic began, but it was most certainly not in Spain. Known by various names in various countries, it became known as the Spanish Flu in North America when newspapers in Spain, then a neutral country in the conflicts of World War I, reported the presence of the disease.

In Canada, the 1918 Influenza first arrived with the return of Canadian troops from Europe in the late spring and early summer of that year. The first major outbreak among civilians occurred in September of 1918, when 400 students at Victoriaville College, Quebec, became ill. Similar events occurred in St. John's, Newfoundland, and on the Labrador coast in September and October, as well as in Halifax, Nova Scotia.

The disease spread from the Maritime Provinces across central Canada following the rail lines, attacking citizens in Toronto and Winnipeg by the first week of October. Residents of Regina, Saskatchewan, began dying on October 6, about the same time the illness hit Calgary, Alberta.

British Columbia also reported its first case of the killer influenza in the first week of October, attesting to the rapid spread of the disease even in an era without jet air travel. Vancouver's first case was reported on October 5, and the illness also appeared in Prince Rupert, Victoria, and Kamloops within the week. Most communities suffered thousands of illnesses and hundreds of fatalities throughout October and into November of 1918. Vancouver and Victoria did not lift their ban on public gatherings until November 18.

Although no one kept careful records of the number of influenza-related cases or deaths at the time, historians estimate that between 30,000 and 50,000 Canadians died from the pandemic. This includes about 4,400 British Columbians.

Refer to "References" in this Index for some sources of interest, particularly John Barry's *The Great Influenza – The Epic Story of the Deadliest Plague in History*. Also see *The Silent Enemy*, by Eileen Pettigrew, and *Dr. Fred and the Spanish Lady*, by Betty O'Keefe and Ian MacDonald.

## Stockpiling

Every business should examine their need for supplies and existing stocks. Some suggestions related to stockpiling include the following:

- Stock your business with all necessary supplies for regular day-to-day functions that will serve you for at least six weeks.

- Develop contact lists for all your suppliers and alternate suppliers, including emergency numbers.
- Develop an inventory (including serial numbers) of all computer equipment, printers, fax machines, photocopier machines in case repairs are needed.
- Identify contact information for all potential equipment repair persons, including alternates.
- Identify who in your organization can authorize repairs and supply/equipment orders, and their alternates.

## Strain

A virus strain refers to a mutant variation of the influenza virus within a given subtype. New strains appear every few years and are responsible for yearly outbreaks of influenza among human populations.

## Surveillance/Attendance

Your business would benefit from tracking the number of influenza cases that occur over time to help plan response actions. Businesses should consider:

- Identifying a position (and alternate) in your organization for collecting/managing information about staff absenteeism.
- Collecting data on the average number of staff absences due to illness and vacation at different times of the year (monthly rates)
- Developing a mechanism to monitor and report increasing staff absenteeism due to illness to health authorities (e.g., Medical Health Officer)

## Symptoms

The spectrum of illness seen with influenza is broad, ranging from symptomatic infection to death, frequently due to secondary bacterial pneumonia or exacerbation of an underlying chronic condition.

Characteristic symptoms of influenza include:

- Acute onset of respiratory illness
- Fever
- Cough
- Sore throat



- Joint and muscle pain
- Extreme fatigue and prostration

## Transmission, Means of

The influenza virus is designed for easy transmission among humans and infects the respiratory tract to aid this purpose. Persons infected with the virus develop a persistent cough, which generates droplets containing virus particles.

Therefore, droplet transmission from respiratory tracts of infected individuals is one of the primary means that the virus uses to find new hosts.

In addition, the influenza virus is found in the mucous membranes of the nasal cavities and around the eyes. These provide further means for virus transmission between persons.

Finally, uninfected individuals can acquire the virus by way of direct contact from hands in contact with mucous discharges from ill persons, or from surfaces where the virus has been deposited. Virus can live on the hands for five minutes. The influenza virus can live on a hard surface for 24 to 48 hours, and on non-porous surfaces, such as cloth, paper and tissue, from 8 to 12 hours.

For more information on the means of transmission, consult your health authority or see the *Canadian Pandemic Influenza Plan*, available through the Health Canada website at:

[www.hc-sc.gc.ca/pphb-dgspsp/cpip-pclcpi/](http://www.hc-sc.gc.ca/pphb-dgspsp/cpip-pclcpi/)

## Travel Restrictions

Under the *BC Health Act*, the Medical Health Officer can “prevent the departure of persons from localities infected with epidemic”... until the danger of infection has passed. This can have the effect of essentially closing the borders of a community. Travellers seeking to return to their homes will likely be turned back, but will not be detained.

## Utilities

Some essential service utilities that provide electrical power, natural gas, telecommunications, food distribution and financial services are regulated services. These companies have a legislated responsibility to develop and maintain emergency preparedness plans that ensure the continuation of the essential services they deliver.

It is common practice for major utility providers to have Business Continuity Plans.

## **Vaccine**

A vaccine stimulates the body's own immune system to generate anti-bodies and other defences against diseases such as influenza. While not 100 percent effective in all cases, a vaccine represents the strongest protection available against contracting the disease.

An effective vaccine can only be produced once the virus responsible for the pandemic has been identified and isolated. This could take six months or perhaps longer in some cases. Depending on the nature of the virus of threat, immunization may require two doses of the vaccine administered one month apart.

The federal government is responsible for acquiring and distributing the vaccine to the provinces, territories, and First Nations. A federal/provincial/territorial working committee will recommend priorities for administering the vaccine. The province will then distribute the vaccine to the health authorities within the province.

## **Virulence**

The degree of ability of an organism to cause disease.

## **Virus**

See "Influenza."

## **Waves, Pandemic Influenza**

From historical research, scientists have observed that pandemic influenza typically arrives in waves. The initial wave sees a rapid increase in the number of new cases and perhaps fatalities over a period of about three to five weeks, followed by a rapid decline in the number of cases.

A second wave of cases may arrive between three and nine months after the initial wave. Additional waves are possible and spikes in cases may return periodically for years. Between the waves, the number of cases may be minimal but still cause for concern.

## Worker Education and Awareness

Businesses intent on managing pandemic risks will devote primary attention to educating employees about the risks they face, including the potential for contracting the disease in the workplace. For example, employees at higher risk include those who are in frequent close personal contact with large numbers of people.

Awareness messages should encourage employees to stay home if they are sick to stop the spread of illness. Businesses should inform all workers about updated sick leave, family and medical leave policies. Concern about lost wages is the largest deterrent to self-quarantine.

Worker awareness may take many forms, including posting signs and handing out brochures that inform employees how they can protect themselves in the workplace from the virus. One example is offered below:

### Protect Yourself and Others from Influenza

Influenza is caused by a virus that is spread when an infected person coughs or sneezes. Here are six simple, common sense precautions that can help safeguard everyone's health.

1. **Stay home when you are sick or have influenza symptoms.** Get plenty of rest and check with a health care provider as needed.
2. **Avoid close contact with people who are sick.** If you are sick, keep your distance from others to protect them from getting sick.
3. **Cover your mouth and nose with a tissue when coughing or sneezing, and throw the tissue away immediately.** This may prevent those around you from getting sick.
4. **Wash your hands.** Washing your hands often will help protect you from getting sick. When soap and water are not available, use alcohol-based disposable hand wipes or gel sanitizers.
5. **Avoid touching your eyes, nose or mouth.** You can become ill by touching a surface contaminated with the virus and then touching your eyes, nose or mouth.
6. **Practice other good health habits.** Get plenty of sleep, be physically active, manage stress, drink plenty of fluids, eat nutritious foods, and avoid smoking, which may increase the risk of serious consequences if you do contract influenza.

Employees may be invited to a series of in-house information awareness sessions, where senior managers can present risk information and answer questions about the measures taken to protect workers. A representative from the health authority should be invited to address questions about influenza and its risks.

## Workforce Backup

Absenteeism could be a major consequence of pandemic for some businesses. See also “Absenteeism” in this Index.

To overcome the temporary loss of workers to the disease, businesses should develop plans for duplicating staff capabilities. Consider the following actions:

- Prepare an inventory of skills in the event that workers in your organization are required to perform duties in other business units to maintain critical functions.
- Prepare a current list of staff, complete with telephone numbers, and keep it current.
- Develop a current list of recently retired staff (complete with telephone numbers) who may be contacted in the event of extreme staff shortages.
- Identify the position (and alternate) in charge of communicating to the employees in your organization.
- Anticipate the roles and responsibilities of external contract workers in the event of staff shortages.
- Identify the positions (and alternates) with the authority to hire contract/temporary workers during a pandemic.
- Identify the person (and alternates) that new workers can go to for passwords to office equipment and electronic files.
- Identify alternates for information technology personnel if you experience computer problems during a pandemic.
- Identify the security officers (and alternates) who will control physical access to your work location and address access by new personnel.

## WorkSafe BC

WorkSafe BC is the operational arm of the *Workers’ Compensation Board of British Columbia*. The mission of WorkSafeBC is to keep workers and workplaces safe and secure from injury, illness, and disease

Occupational exposure includes certain infectious diseases, including influenza, and therefore falls under the core mandate and regulation of WorkSafeBC.

Section 6.34 of the Occupational Health and Safety Regulation addresses the need to develop and implement an exposure control plan for blood borne pathogens or other biohazardous material.

More information on WorkSafeBC and their requirements related to pandemic influenza may be found on their website at:

[www.worksafebc.com](http://www.worksafebc.com)

## **World Health Organization (WHO)**

The World Health Organization is a special agency of the United Nations established in 1948 to help people throughout the world attain the highest possible level of health.

WHO has an active world-wide program of monitoring influenza and for alerting world partners to the earliest evidence of pandemic.

For more on the World Health Organization, see their website at:

[www.who.int/en/](http://www.who.int/en/)