

## Table of Contents

<b>1. Human Influenza</b> .....	1
What is influenza? .....	1
How serious is the flu in Canada? .....	1
What is an influenza pandemic?.....	1
<b>2. Avian Influenza</b> .....	2
What is avian influenza?.....	2
Can avian influenza affect people?.....	2
Why is avian influenza of concern? .....	2
Is it safe to continue eating poultry? .....	2
Is there any avian influenza in Canada?.....	3
What workers are at risk from avian influenza?.....	3
<b>3. Pandemic Predictions</b> .....	3
What causes a pandemic? .....	3
What is the expected course of the next pandemic? .....	3
Is there a government plan to deal with the influenza pandemic? .....	3
What assumptions are being made about flu vaccine in a pandemic? .....	4
What are the stages of a pandemic? .....	4
<b>4. Workplace Precautions and Planning</b> .....	4
What is considered an influenza outbreak in the workplace?.....	4
What should an employer do in the Interpandemic Period to protect workers?.....	4-5
How can businesses prepare for the next pandemic, in addition to what they do in the Interpandemic Period? .....	5-6
Could Public Health officials “commandeer” our facilities or employees in a pandemic?.....	6-7
What precautions should poultry handlers and processors take to protect their employees and processes? .....	7
Will legislation change during a pandemic?.....	7
<b>5. Travel Issues</b> .....	8
Are there any travel restrictions to Asia at this time?.....	8
What has WSIB said about travel?.....	8
<b>6. Additional Resources</b> .....	8

## 1. Human Influenza

### What is influenza?

Commonly called “the flu” influenza is a disease of the upper respiratory tract. For basic information about the flu and how it differs from a cold or so-called “24-hour” or “stomach flu”, see IAPA’s Free Download, Colds and the Flu.

### How serious is the flu in Canada?

Millions of people get the flu in Canada each year. Most recover in one to two weeks, but each year up to 2,000 Canadians die from the flu or complications such as pneumonia. In an influenza pandemic, those numbers will be much higher. Health Canada estimates that in a pandemic, over 50% of Canadians will be infected, and between 11,000 and 58,000 Canadians may die, depending on the severity of the strain. The Ontario Ministry of Health and Long Term Care estimates the most likely scenario for the next pandemic is that about 8,000 Ontarians will die, but the number could be as high as 20,000.

### What is an influenza pandemic?

Influenza viruses regularly mutate or change slightly. That’s why it’s necessary to get a new flu shot each year, since the viruses circulating in the population change. However, 3-4 times each century, a completely new flu virus appears, unrelated to any previous circulating viruses. When this happens, no one has any immunity and the virus spreads rapidly around the globe, infecting and killing millions of people. This is known as a pandemic. In the last century there were three pandemics, during the years of 1918-1919, 1957-1958 and 1968-1969. The 1918 pandemic caused at least 20 million deaths worldwide, including 50,000 in Canada. The two later pandemics were much milder, but still killed 2 million and 1 million people worldwide, respectively, including 7,000 and 4,000 Canadians respectively.

Experts believe that another influenza pandemic is overdue and possibly imminent. See the section below, Pandemic Predictions, for more details.

## 2. Avian Influenza

### What is avian influenza?

Avian influenza or “bird flu” refers to many different strains of influenza that infect many species of birds. One particularly serious strain has been infecting chickens and ducks, as well as a few mammals – pigs, tigers and leopards – in many countries since December 2003. It is a highly pathogenic (disease-causing) strain that spreads easily from bird to bird, and is almost 100% fatal for chickens. This H5N1 strain is of concern because of its tendency to mutate rapidly, and also to acquire genes from viruses infecting other species, such as humans. At this time, avian influenza H5N1 is present in many Asian, European and African countries. These countries have slaughtered millions of birds in an attempt to eradicate the virus. Beginning in the latter part of 2004, the outbreaks have no links to each other, suggesting that the virus may have become “endemic” (meaning constantly present) in these areas, and/or are being spread by migratory wild birds. Canada and the United States have also experienced outbreaks of avian influenza, but not due to the highly pathogenic H5N1 strain.

### Can avian influenza infect people?

Yes. Although most animal viruses do not infect people, the H5N1 avian influenza has jumped the species barrier and infected a number of humans. This happened for the first time in Hong Kong in 1997, when 18 people were infected with the H5N1 virus, of whom 6 died. This outbreak was stopped by the prompt elimination of millions of chickens. However, the virus has now re-emerged in many Asian countries at the same time. The fact that it is capable of infecting a number of different mammals, including pigs and cats, is also worrying.

Since 2003, the total human cases and deaths that have occurred worldwide due to avian influenza, are as follows, as of September 2006:

*Avian flu in humans as of September 20, 2006 but changes often daily.*

Country	Number of Human Cases of Avian Influenza	Number of Deaths
Azerbaijan	8	5
Cambodia	6	6
China	21	14
Djibouti	1	0
Egypt	14	6
Indonesia	65	49
Iraq	3	2
Thailand	24	16
Turkey	12	4
Viet Nam	93	42
<b>TOTAL</b>	<b>247</b>	<b>144</b>

In a few instances, limited person-to-person transmission of avian influenza may have occurred following close contact with a patient during the acute phase of illness. However, the virus clearly is not able to spread easily from person to person.

### Why is avian influenza of concern?

Avian influenza viruses that combined with human viruses caused the last three pandemics. Scientists are afraid that a person who has human influenza will become infected with an H5N1 avian influenza virus at the same time. When this happens, it is possible that the two viruses will exchange genetic information inside the person, and turn into a new virus that contains the H5N1 genetic material from the avian virus, but also spreads easily from person to person. Since no one will have immunity to this virus, it could spread quickly around the globe, infecting and killing millions of people.

### Is it safe to continue eating poultry?

Yes, at least in Canada. For many years, Canada has banned imports of poultry from all the affected countries because of concerns about other diseases. If you travel to countries that have experienced avian influenza, you should be sure not to eat under-cooked poultry, raw or under-cooked eggs; and avoid all contact with live poultry. See the Travel Issues section, below. (Even in Canada, you should only eat poultry and eggs that have been thoroughly cooked, and handle raw poultry safely, because of the many bacterial contaminants that are common in these foods, e.g., *Salmonella*, *Campylobacter*, *E. coli*). Thorough cooking destroys all these bacteria as well as the avian flu virus.

## Is there any avian influenza in Canada?

In early 2004, the Canadian Food Inspection Agency (CFIA) detected avian influenza in several chicken farms in the Fraser Valley region of British Columbia. Both low and high pathogenic strains of H7N3 strain were found, but not the serious H5N1 strain causing bird and human disease in Asia. Approximately 17 million birds in the high-risk area of the Fraser Valley control area were humanely killed and their owners compensated. No chickens or eggs from the farms entered the food system. The outbreak was declared over in June of 2004. Federal, provincial and municipal governments met for two days with the poultry industry in late October to strengthen future responses to animal disease outbreaks.

In mid November 2005, another strain of avian influenza was found on a number of farms in British Columbia. Although it was an H5 strain, it was not the H5N1 strain causing concern in Asia, and was not highly pathogenic to the birds. Nevertheless, the CFIA acted quickly to eradicate it, to prevent it from mutating into something more dangerous.

## What workers are at risk from avian influenza?

Any workers who work with or around live or dead poultry may be at risk of acquiring avian influenza, if it is present in the birds. See the section on Workplace Precautions and Planning, below, for details.

## 3. Pandemic Predictions

### What causes a pandemic?

There are four requirements for a pandemic:

1. A new influenza A virus must emerge, which can infect people
2. The new virus must be highly “virulent”, meaning it causes severe illness

3. The population must have little immunity to the virus
4. The virus must spread easily from person to person

At present the first three of the four requirements for a pandemic have been met. If and when the virus mutates or recombines to a form that spreads easily from person-to-person, all the conditions for a pandemic will exist.

### What is the expected course of the next pandemic?

It is anticipated that the pandemic strain will arise in South-East Asia. However, due to global travel, Ontario will have little lead-time before the pandemic strain arrives. There will likely be two or more waves of the pandemic, which will occur three to nine months apart. Each wave will last about two months.

### Is there a government plan to deal with the influenza pandemic?

Health Canada has developed the *Canadian Influenza Pandemic Plan*, which was released on February 12, 2004. The World Health Organization has called it an “excellent template” for other nations to use.

The Plan’s focus is on prompt vaccine development and delivery, with Canadian vaccine manufacturers gearing up to produce the millions of doses of vaccine that will be needed in a pandemic. The WHO notes that “Canada is better placed than virtually any other country on the issue of a flu vaccine, having contracted with a Canadian-based company to produce its vaccine.” (It is speculated that in a pandemic situation, many countries may embargo their domestically manufactured vaccines to make sure that their own citizens are protected first, so countries without their own vaccine producers may have difficulties obtaining vaccine.)

Most provinces and territories have their pandemic plans in place, to complement the federal plan. In Ontario, the *Ontario Health Pandemic Influenza Plan* is also supplemented by a number of regional plans.

## What assumptions are being made about flu vaccine in a pandemic?

Because the vaccine manufacturing process cannot begin until the specific pandemic strain emerges, and because of the complexity of the process, it is expected that a vaccine against the pandemic strain will not be available for 4 to 6 months after the start of the pandemic. In other words, no vaccine will be available during the first wave, and possibly not for a second wave, depending on how quickly the second wave follows the first. Even once the vaccine is available, it will be in short supply for some time, and the government will decide who has access to it first. The *Ontario Health Pandemic Influenza Plan* sets out the highest priorities, in order as:

1. Health Care Workers (HCW) who are caring for patients who have influenza
2. Other HCW
3. Emergency workers or providers of essential services
4. Those at highest risk of fatal outcomes of influenza (primarily the very young and the elderly)
5. Healthy adults
6. Children from ages 2 to 18 years of age

## What are the stages of a pandemic?

The WHO has defined six stages of a pandemic:

Period	Phase	Description
Interpandemic Period	Phase 1	No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human infection is considered to be low.
	Phase 2	No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.

Period	Phase	Description
Pandemic Alert Period	Phase 3	Human infection(s) are occurring with a new subtype, but there is no human-to-human spread, or at most rare instances of spread to a close contact.
	Phase 4	Small cluster(s) are occurring with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.
	Phase 5	Larger cluster(s) are occurring, but human-to-human spread is still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).
Pandemic Period	Phase 6	Increased and sustained transmission is occurring in the general population.
Postpandemic Period		Return to interpandemic period.

At present, the world is considered to be in Phase 3 of the Pandemic Alert period.

## 4. Workplace Precautions and Planning

### What is considered an influenza outbreak in a workplace?

Absenteeism of 10% or more on any one day due to “influenza-like illness” (ILI) is considered an outbreak, and a workplace should report this to their local public health unit. “Influenza-like-illness” is defined as the sudden onset of respiratory illness with fever and cough and with one or more of the following: sore throat, aching joints, aching muscles or extreme exhaustion.

### What should an employer do in the Interpandemic Period to protect workers?

As with any workplace hazard, it is important to follow a continuous improvement process. The following should be implemented during “usual” flu seasons, and continued on an ongoing basis:

1. First, assess the risks to workers in your particular workplace. Those who have contact with the public are at particular risk of contracting the flu. Make sure you include workers in your discussions about the potential problems and possible remedies.
  2. With input from workers, plan the controls you intend to put in place, and develop your standards, policies, and procedures. Some of these that may be applicable are suggested below:
    - > Offer free on-site flu vaccine to all workers and their families every October or November. While the flu vaccine is free to all Ontarians, making it convenient by offering it in the workplace may encourage people to get their shot. Including family members may avoid having immunized workers stay home to care for ill family members.
    - > Strongly encourage any employees who may travel to Asia for business or vacation to have the current influenza vaccination two to three weeks before they leave.
    - > Ensure that you have a sickness and absenteeism policy that encourages people to stay home when they are sick and does not penalize people for compliance (through loss of pay when off sick, or giving rewards for perfect attendance). Having sick people come to work is the best way to decimate the workforce in a pandemic.
    - > Encourage good hygiene among all your workers, which means covering their mouth during a cough or sneeze, not spitting, handwashing, and keeping their hands away from their mouth, eyes, and nose.
- when arriving home
  - before and after work
- > Provide alcohol-based hand sanitizers for workers in places or situations where it is impossible or inconvenient to wash hands with running water and soap.
  - > Ensure regular cleaning of frequently touched environmental surfaces, such as doorknobs, railings, telephones, keyboards, etc.
  - > Do appropriate cross training so that essential services or processes can continue if key people are off sick with the flu.
3. Communicate your standards, policies, and procedures clearly and appropriately to all employees on a regular basis and through many vehicles.
  4. Train employees so that they understand the facts about flu vaccine and good hygiene practices.
  5. Measure and evaluate your efforts and make improvements as necessary.

## How can businesses prepare for the next pandemic, in addition to what they do in the Interpandemic Period?

During a pandemic, up to 35% of employees may be absent at one time due to illness. An additional number may be absent for other reasons, such as the need to care for ill family members, caring for children who are at home due to school closures, or simply due to fear of travel on public transit. Apart from the risk of illness to employees, this unprecedented absenteeism can threaten the survival of a business.

Employers planning for a pandemic should first ensure that they have done all the things listed in the section above. But in addition, they should:

1. Assemble a team to plan for the pandemic. The team should include senior leadership, senior union leaders, senior human resource staff, health and safety staff, key suppliers, and ideally a health professional from inside or outside the organization.

2. **Assess the risks to the organization.** Consider which people and which processes are at highest risk. For example:
  - > People at risk – those in contact with the public, those who travel extensively in planes and trains, those with school-aged children, those with chronic illnesses (e.g., diabetes, heart disease)
  - > Processes at risk – those that involve public gatherings, those that are dependent on a small number of skilled workers, those dependent on supplies from external suppliers.
3. **Set your priorities.** Which processes are the most critical for the survival and continuance of your business? Which support jobs are most critical for your business (e.g., payroll staff, IT support). Also, determine which are your least essential processes, which could be shut down for a few weeks in an emergency, without affecting your ability to survive as a business.
4. **Protect your people and your processes as much as possible.** This may include increasing your fresh air circulation, shifting staff from less essential processes or functions to critical processes and functions, encouraging alternate working arrangements such as telecommuting and conference calls, etc. Don't forget contingency planning for suppliers. Also be sure to define trigger points for instituting some of these contingency plans.
5. **Build the Foundation.** The controls listed above won't be possible to institute without a solid foundation including:
  - > Good succession planning and cross training
  - > A clear definition of the chain of command in a pandemic situation
  - > A well-defined communication plan for internal and external communications
  - > A definition of the new criteria for alternate work arrangements, as well as the availability of the technology to support them

## Could Public Health Officials “commandeer” our facilities or employees in a pandemic?

During a pandemic, Canada's health care system may be overwhelmed, and public health officials may be required to use community resources to meet the needs of the population. Therefore, public health officials may come to businesses for assistance, as follows:

### 1. Facilities

The *Canadian Pandemic Influenza Plan* has a section (Appendix J) titled, “Guidelines for Non-Traditional Sites and Workers”. This section discusses the possibility of the need for using non-healthcare facilities for the monitoring, care or support of influenza patients during a pandemic. These sites might be used for triage centres, clinics, emergency residential care, etc. The Plan suggests the following types of sites might be appropriate for a Non-Traditional Site:

- > schools
- > hotels
- > community halls
- > banquet facilities
- > arenas
- > churches
- > closed hospitals or hospital wards
- > day care centres

If your workplace is one of the above, or if your company owns large facilities that could be useful for handling large numbers of people or supplies in a pandemic situation, you may want to contact your local Public Health Unit's Pandemic Planning staff, to offer your location as a potential Non-Traditional Site.

### 2. Human Resources – Needed Skills

In a pandemic situation, up to 35% of the population may be clinically ill and unable to work. This will be especially critical if shortages of health care workers result. The Plan calls for searching out additional health care workers, who may not normally be employed in a health care setting, or volunteers who could be trained to do non-medical work. If your company has an occupational health department, or employs trained health care workers who may be working in educational or administrative work, they could be called upon

by the government to assist in managing the pandemic. Under certain circumstances, the time or property of such workers could be legally compelled to assist with the pandemic, though this would be a last resort. Employers should look at the list of skill sets in this section of the Plan, and consider whether your company has health care or other workers who could be of assistance in a pandemic.

The government will also be looking for large numbers of volunteers for non-medical work, and you may want to consider the role your company could play in this.

## What precautions should poultry handlers and processors take to protect their employees and processes?

Ontario's Ministry of Labour states that human infections are almost always linked to direct contact with infected poultry, wild or pet birds, or with droppings from infected birds. Humans can inadvertently transmit the virus between bird populations through contaminated vehicles, equipment, clothing and footwear.

Workers involved in control of outbreaks in birds are at increased risk of exposure to infection due to prolonged, close contact with birds and contaminated surfaces. These workers are advised to take precautions including hand washing and use of personal protective equipment. Employers should ensure workers receive training on these precautions and provide them with appropriate personal protective equipment.

The Canadian Food Inspection Agency (CFIA) has published detailed recommendations on their website for farmers and other poultry processors. They recommend that poultry owners and processors should strictly limit access to their premises. If visitors must enter, owners should ensure that they take the following biosecurity precautions:

### Clothing

Clean coveralls or other clothing should be provided for all visitors. Require all visitors to wear these over their clothes while on the premises. Clean these clothes each day using

normal laundering practices.

### Hygiene

Require all visitors to wash their hands before entering barns.

### Footwear

Require all visitors to wear footwear you supply while on the premises. If this is not feasible, thoroughly clean all debris from footwear with soap and water followed by disinfectant. As an added precaution, footbaths containing disinfectant should be placed at the entrance of poultry houses to clean entering and exiting footwear.

### Vehicles

Place a standard pump sprayer containing disinfectant at the entrance to the property. Require all visitors to thoroughly spray their vehicles – particularly the tires, wheel wells and undercarriage – before driving onto the premises.

### Equipment

Ensure all equipment brought onto the premises is clean. To further protect against avian influenza spread, spray equipment with disinfectant (bleach and water mixture).

## Will legislation change during a pandemic?

Employers should ensure that they have a mechanism to remain aware of legislative changes. During a pandemic, a state of emergency may, or may not, be declared. If it is declared, it may change the implications of various pieces of legislation. Even if it is not declared, there may be changes or policy decisions that affect employers and workers. For example, the Workplace Safety and Insurance Board may publish a policy statement clarifying the eligibility of various classes of workers for compensation if they should acquire influenza while on the job. Similarly, the Ministry of Labour may publish policies or clarification of policies related to the right to refuse work, job reassignments, and other employment issues.

## 5. Travel Issues

### Are there any travel restrictions to Asia at this time?

No. At this time, neither the Public Health Agency of Canada (PHAC) nor the WHO is advising against travel to any countries because of avian Influenza.

PHAC is advising travelers to receive the current influenza vaccination before travelling, and avoid unnecessary contact with live poultry, as might happen at poultry farms or live animal markets. Travellers are asked not to bring poultry or egg products back to Canada. Further, anyone who visits a farm while abroad, should make sure their clothing and footwear are clean and free from soil and manure before entering Canada.

PHAC is also advising that visitors to affected countries avoid eating undercooked eggs or poultry products, and maintain good hygiene, as suggested above.

### What has the Workplace Safety and Insurance Board (WSIB) said about travel?

WSIB released this travel advisory related to avian influenza: Many people make plans for travel out of the country during the winter. Some locations in the world now require that you be mindful of health and safety issues, particularly in those locations where avian flu is suspected. Please consider the following precautions for your travel plans:

- > Before finalizing your travel arrangements, check with your local public health department to find out the most recent locations where avian flu has been found.
- > Get a flu shot before departing to a distant location.
- > If you are travelling to an area of the world where avian flu has been found, avoid contact with live or uncooked fowl. Do not purchase live fowl in any market or visit a farm where direct contact with birds is anticipated.
- > While away from home, avoid eating uncooked or partially cooked fowl, egg or egg products. (Salad eaters note that Caesar salad dressing may contain raw egg.)

- > Frequently clean your hands. One of the most effective guards against infection is frequent hand washing. Wash your hands often with hot soapy water or clean your hands frequently with waterless disinfectant.
- > Upon your return to Canada, monitor your health. Influenza symptoms could take several days to develop and will need immediate medical attention.

## 6. Additional Resources

### Where can I get more information on this subject?

There are many excellent web sites with information about influenza and avian influenza. Here's a selection of some of the best:

- > Canadian Food Inspection Agency
- > Canadian Pandemic Influenza Plan
- > Healthy Ontario
- > Ontario Ministry of Health
- > Ontario Ministry of Labour
- > Ontario Health Pandemic Influenza Plan
- > Public Health Agency of Canada
- > US Government Pandemic Flu Site
- > World Health Organization

© Industrial Accident Prevention Association, 2006. All rights reserved.

As part of IAPA's mission to inform and educate, IAPA permits users to reproduce this material for their own internal training and educational purposes only. For any other purpose, including use in conjunction with fee for service or other commercial activities, no part of this material may be used, reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopy, recorded, or otherwise, without the express prior written permission of the Industrial Accident Prevention Association.

The information contained in this material is provided voluntarily as a public service. No warranty, guarantee or representation is made by IAPA as to the correctness, suitability, fitness, or sufficiency of any information contained in this material. Use of this material means that the user agrees that IAPA and its employees will not have and are released from any liability whatsoever, however caused or arising, in connection therewith. Users also acknowledge that it cannot be assumed that all acceptable safety measures are contained in this material or that additional measures may not be required in the conditions or circumstances that are applicable to the user or his/her organization, and that the user will personally make his/her own assessment of the information contained in this material.

While IAPA does not undertake to provide a revision service or guarantee accuracy, we shall be pleased to respond to your individual requests for information.