

# Public Health

## Emergency Preparedness and Response

### Influenza: Annual, Pandemic and Avian

**Remember: there is currently no influenza pandemic in the world.**

There are many variations of influenza (the flu). However, there are three main types that are of interest around the world:

- **Annual influenza** — Human influenza viruses circulate every year. The virus changes slightly each year, so generally most people have some specific immunity. Scientists can generally track the variations to develop an annual vaccine to prevent the flu. For more information, see [www.gov.mb.ca/health/flu](http://www.gov.mb.ca/health/flu)
- **Avian influenza** — Bird flu affects birds and some mammals. In rare cases, this virus can spread from birds to people. Avian viruses are watched carefully in case they undergo a major change that could cause a human pandemic with significant illness and death among people. For more information, see [www.gov.mb.ca/avian](http://www.gov.mb.ca/avian)
- **Pandemic influenza** — This would be the result of a major shift in influenza A virus, to which people will have little or no immunity. A pandemic influenza would cause illness and death among people around the world. Although the impact of a pandemic is unknown, it could be widespread and significant. For more information, visit [www.gov.mb.ca/pandemic](http://www.gov.mb.ca/pandemic)

#### What is influenza (the flu)?

Influenza is a respiratory disease caused by a virus. It can cause a variety of symptoms, such as fever, cough, aching muscles and joints, headache, severe weakness and fatigue, sore throat and runny nose. Children may have additional symptoms such as nausea, vomiting and diarrhea, but these symptoms are uncommon in adults.

There are many other respiratory viruses in the environment. Some of these viruses cause the common cold. Others cause respiratory infections with symptoms similar to influenza. However, true influenza is only caused by the influenza virus.

The flu spreads quickly from person to person by coughing or sneezing, by hand-to-hand contact with an infected person, or after handling objects contaminated by infected people. Influenza can be spread for up to 24 hours before symptoms appear, and up to seven days after. Not everyone who gets influenza develops symptoms but they still may be able to spread it to others, especially if they cough or sneeze.

People usually recover from the flu without medical help. Very young children and the elderly are at increased risk of severe illness, as well as people with lowered immunity (ex: those with chronic illnesses).

Flu vaccines are available and recommended for people at risk of serious illness as a result of getting the flu, and also those who care for them. For information on eligibility for annual flu vaccine in Manitoba, see [www.gov.mb.ca/health/flu/index.html](http://www.gov.mb.ca/health/flu/index.html)

There are three main types of influenza viruses — A, B and C — as well as subtypes. All can cause infection in humans.

- **Influenza A** viruses are the most common cause of annual flu epidemics, something Manitoba experiences every year during the winter months.
- **Influenza B** viruses circulate at lower levels with less severe outbreaks, particularly among young children in school settings.
- **Influenza C** viruses are typically mild and are not usually considered a public health concern.

Influenza A and B viruses undergo minor genetic changes every year. This means that new vaccines have to be created each year to make sure people are protected against the current circulating viruses.

Every year, the World Health Organization determines which types of influenza are most likely to be circulating. Then, vaccines are produced to provide protection against those strains. Influenza vaccine is up to 90 per cent effective in preventing influenza, provided the vaccine matches the strains of influenza circulating in the world.

### **What is pandemic influenza? How is it different from ordinary flu?**

Periodically, influenza A viruses go through major genetic changes. This results in a completely new kind of influenza A, to which the human population has little or no immunity.

To be considered a pandemic, the new virus must also be able to spread easily from person to person and cause illness in many of the people who are infected. When it spreads around the world, it is called pandemic influenza or pandemic flu.

The new flu virus infects humans and spreads quickly because people have no specific immunity to the new virus.

All known influenza pandemics were caused by influenza A. The last pandemic occurred in 1968-69.

### **What is the risk of a pandemic?**

- There is currently no pandemic in the world. It is impossible to predict with any certainty when the next pandemic will take place, although scientists expect that one will occur again.
- No one can predict how severe a pandemic will be or which age groups will be most affected. The health of Manitobans and our health system are much stronger than they were during the last major pandemic, and we have good reason to be optimistic.
- An effective plan to deal with a pandemic will help significantly reduce the rate of severe illness and death, as well as the level of fear and social disruption.
- It is not known if the next pandemic will emerge from an avian influenza virus or if the pandemic will be caused by a different influenza virus.

### **What is avian influenza?**

Avian influenza, also known as avian flu or bird flu, is a virus that can infect all species of birds. Less commonly, the virus also infects mammals, including people.

Wild birds can carry influenza viruses without becoming sick. Wild birds can also infect domestic birds, like chickens, ducks, geese or turkeys, with avian influenza.

While all birds can be infected with avian influenza, domestic birds are particularly at risk of influenza infections.

Because they are often raised indoors, they are in close contact with each other. Infections can spread quickly between birds, causing an epidemic.

Infected birds carry the influenza virus in their body secretions. Birds may get infected if they come into contact with contaminated secretions (such as bird droppings), surfaces (such as cages) or materials (such as water or feed).

For more information about avian influenza in domestic birds, please visit the Manitoba Agriculture, Food and Rural Initiatives website at: [www.gov.mb.ca/agriculture/livestock/poultry/bba13s00.html](http://www.gov.mb.ca/agriculture/livestock/poultry/bba13s00.html)

### **Can people become infected with avian influenza?**

Mostly, avian influenza viruses infect birds. There have been no documented cases of people getting infected with avian influenza from wild birds. While people become infected with avian influenza from contact with domestic birds, the risk to humans is generally low.

Human infections with avian influenza elsewhere in the world and in Canada have been due to direct contact with infected birds during poultry outbreaks.

Strict biosecurity measures are in place on Manitoba farms to keep wild birds away from poultry. For domestic birds, this reduces the risk of catching avian influenza from wild birds. It also reduces the potential risk of infection for Manitoba poultry farmers.

For more information on biosecurity measures for farmers, please visit the Manitoba Agriculture, Food and Rural Initiatives website at: [www.gov.mb.ca/agriculture/livestock/poultry/bba13s00.html](http://www.gov.mb.ca/agriculture/livestock/poultry/bba13s00.html)

### **What are the symptoms of avian influenza in humans?**

- For people, the kind of avian influenza symptoms and how serious they are seems to depend on which strain of virus causes the infection.
- Symptoms of avian influenza in humans have ranged from typical flu-like symptoms (fever, cough, sore throat and muscle aches) to eye infections, gastrointestinal symptoms, pneumonia, acute respiratory distress and other serious and possibly life-threatening complications.

### **How is avian influenza treated in humans?**

Antiviral drugs are a type of prescription medicine used to treat and prevent influenza infection in human. These drugs can also be used to treat avian influenza infections in humans.

Antiviral drugs can also be used to prevent infection in poultry workers responding to outbreaks in birds. However, influenza viruses can become resistant to these drugs, so the medications may not always work.

### **What is H5N1 avian influenza?**

Influenza A viruses are divided into different types based on two proteins called hemagglutinin (H) and neuraminidase (N). Many different combinations are possible. Each combination results in a different type, such as H3N2 or H5N1.

H5N1 avian influenza is a type of influenza A virus. Since late 2003, this virus has caused widespread outbreaks in domestic birds in several Asian and European countries. Rarely, this virus has also caused infections in humans.

To date, human cases of H5N1 avian influenza have been associated with direct contact with infected chickens.

The World Health Organization (WHO) monitors emerging infectious diseases, (including H5N1 avian influenza) and investigates human cases and contacts. For up-to-date situation reports and more details of H5N1 activity in the world, visit the WHO's website at: [www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/)

### **Does avian influenza occur in Canada?**

- In 2005, a Canadian wild bird survey identified some wild ducks that tested positive for avian influenza in several provinces, including Manitoba. A very small number of these birds were found to have H5N1 avian influenza. It was a North American strain, not the same strain circulating in Asia and parts of Europe, and not associated with human illness. The Asian strain of H5N1 avian flu could arrive in North America in the summer or early autumn of 2006. Wild bird surveillance will continue.
- Although rare, avian influenza outbreaks have occurred among domestic birds in Canada. An outbreak of H7N3 avian influenza affected several B.C. poultry farms in 2004.
- For more information on avian influenza in Canada, please visit the Public Health Agency of Canada's website at [www.phac-aspc.gc.ca/influenza/avian\\_e.html#wildbird](http://www.phac-aspc.gc.ca/influenza/avian_e.html#wildbird) or the Canadian Food Inspection Agency's (CFIA) website at [www.inspection.gc.ca/english/animal/heasan/disemala/avflu/2005wildsauv/surenge.shtml](http://www.inspection.gc.ca/english/animal/heasan/disemala/avflu/2005wildsauv/surenge.shtml)

### **What is the risk to Manitobans from H5N1 avian influenza?**

The current risk to Manitobans from H5N1 avian influenza is low. To date, there have been no outbreaks of this type of avian influenza in poultry or people in North America or in Manitoba. However, Manitoba, the rest of Canada and other countries around the world are preparing for the possibility that the virus could develop the ability to spread from person to person.

It is possible that travellers returning from countries affected by avian influenza outbreaks in birds could be infected, especially if they have had direct contact with infected poultry. Medical and public health personnel in Manitoba watch for, report and follow up promptly if any unusual severe respiratory disease cases are found in the province, particularly if they are suspected to be travel-related.

### **What should I know if I am travelling to an area affected by avian influenza outbreaks?**

Manitoba Health recommends that travellers talk to their personal physician or a travel medicine clinic professional about their travel plans at least six to eight weeks before they begin their trip. It is also recommended that travellers receive the current influenza vaccine before leaving.

In addition, travellers should consider the following:

- Avoid unnecessary contact with live birds. This includes poultry farms as well as markets where live animals such as chickens, ducks and pigs are sold. These animals have been found to be carriers of the avian influenza virus.

- Maintain high standards of hygiene, including thorough hand washing, particularly after having contact with eggs or under-cooked poultry and egg products. Travellers to affected areas should not consume under-cooked poultry, raw eggs or lightly-cooked egg products (such as runny eggs). Travellers are also advised not to bring poultry or egg products from affected countries into Canada.
- If visiting a farm in an affected country, make sure that clothing and footwear worn on the farm are free from soil and manure before entering Canada. Clothing should be laundered and footwear should be disinfected after returning home. For more information visit: [www.inspection.gc.ca/english/animah/seasan/disemala/avflu/avflue.shtml](http://www.inspection.gc.ca/english/animah/seasan/disemala/avflu/avflue.shtml)
- To find out if your destination is currently affected by avian influenza outbreaks and for precautions against avian influenza, please refer to the Public Health Agency of Canada's Travel Medicine website: [www.phac-aspc.gc.ca/tmp-pmv/pub\\_e.html](http://www.phac-aspc.gc.ca/tmp-pmv/pub_e.html)

### What should I do if I have travelled to an affected area and feel ill?

As with any travel, people who become ill upon returning home should contact their health care provider and inform them of the places visited as well as any significant exposures (ex: handling sick or dead birds).

### Should hunters take special precautions?

Hunters should follow these steps when handling game:

- Do not handle birds that appear sick or are found dead.
- Wear disposable rubber or latex gloves while handling and cleaning game. Wash hands with soap and water after taking off the gloves or touching equipment.

Alcohol-based hand products can also work if hands are not visibly dirty. Completely clean knives, equipment and surfaces that come into contact with game.

- Do not eat, drink or smoke while handling live or dead birds.
- Thoroughly cook any bird intended for consumption (internal temperature should be 80C or 170F). Proper cooking kills this virus just as it does many other disease organisms and parasites.
- Dispose of bird remains after field dressing in a way that will prevent scavengers from coming in contact with the carcass or remains.

For more information, visit [www.gov.mb.ca/conservation/wildlife/faq/hunting](http://www.gov.mb.ca/conservation/wildlife/faq/hunting)

### How is Manitoba prepared to respond to an outbreak of avian influenza?

- Manitoba Health works with the province's RHAs, other government departments, the Public Health Agency of Canada, other federal agencies, and other provinces and territories to prepare quick and effective responses to public health emergencies.
- Guidelines for managing the human health aspects of an avian influenza outbreak in domestic birds have been developed for use in Manitoba.
- Across Canada, the federal and provincial governments are working co-operatively on avian influenza, similar to the national effort to plan for a pandemic influenza. Activities such as conducting wild bird surveys provide additional information on which to base informed decisions. The provincial government, through the Manitoba Emergency Measures Organization, Manitoba Agriculture, Food

and Rural Initiatives (MAFRI), Manitoba Health, Manitoba Conservation, and Manitoba Labour is working closely with the Canadian Food Inspection Agency (CFIA), Health Canada's Occupational Health Service and the Public Health Agency of Canada to plan and prepare for a potential avian influenza outbreak.

- Manitoba has a supply of the antiviral drug oseltamivir (Tamiflu®). This drug may be used if appropriate to prevent infection or treat illness in poultry workers and other priority populations if an avian influenza outbreak ever occurs in Manitoba.

### Can avian influenza cause a pandemic?

Influenza viruses are constantly changing over time. For a pandemic to occur, a new influenza virus with major genetic changes would have to develop.

Avian influenza outbreaks in birds increase the chances of human exposure, particularly where there is close contact between humans and infected birds. If there are more human infections, this increases the chances that the avian influenza virus will adapt and "learn" how to directly affect people. Theoretically, it is also possible that a human influenza strain and an avian influenza strain could combine and develop an entirely new strain of influenza.

That is why, during a response to an outbreak of influenza among domestic birds, people at high risk of exposure to birds infected with avian influenza may be offered a "flu shot" with annual influenza vaccine. The reason for this would be to prevent infection with avian and human influenza at the same time. Some scientists think that if a person were to become infected with both types of influenza, the viruses could mix to produce a new strain.

People would have no specific immunity to this new strain, which could spread from person to person, and cause illness.

To date, no instances of human-to-human spread of avian influenza virus have been confirmed. However, this possibility is being closely monitored internationally.

### Is it safe to eat poultry?

- Eating properly cooked poultry in Canada is safe. The Canadian Food Inspection Agency (CFIA) has import restrictions in place on poultry and non-processed poultry products from countries affected by avian influenza.
- To date, there has been no evidence that the virus is transmitted through contaminated food. Viruses (including influenza viruses) are easily inactivated by cooking.

### How is Manitoba Health preparing for pandemic influenza?

Manitoba Health is working with the province's regional health authorities on development of their pandemic plans. Manitoba Health also continues to develop, review and refine the provincial pandemic influenza response plan and emergency response structure.

In addition, Manitoba Health is working with other Manitoba government departments to promote government preparedness, and also with the Public Health Agency of Canada (PHAC) to contribute to the national pandemic preparedness plan.

In a pandemic, Manitoba Health will provide further direction to the public through the media and other types of communication (ex: websites and Health Links-Info Santé).

For more information on Manitoba Health's public health preparedness for pandemic influenza, please visit: [www.gov.mb.ca/pandemic](http://www.gov.mb.ca/pandemic)