

Preparing for Pandemic Influenza in Manitoba

A Guide for the Public from the Office
of the Chief Medical Officer of Health
March 2006

Manitoba's Public Health Pandemic Influenza Plan

This is a living document that will be reviewed and updated on a regular basis by the Office of the Chief Medical Officer of Health. The document will be a reflection of its time, as new scientific information becomes available and as a result of our ongoing planning process.

There is currently not an influenza pandemic in Canada or the world. It is important, however, to be prepared and ready to respond in the event that one does occur.

This is a summary document that highlights key facts about pandemic influenza, public health preparedness activities in Manitoba and how a public health response to pandemic influenza will be handled in Manitoba. The goal of this document is to provide information to the public about pandemic influenza, how public health is preparing, and how individuals and families can prepare themselves.

Manitoba's public health plan for pandemic influenza is based on the Canadian Pandemic Influenza Plan. The Canadian Pandemic Influenza Plan can be accessed at the following website: www.phac-aspc.gc.ca/cpip-pclcpi/

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Pandemic Influenza and Other Respiratory Disease Threats

Introductory Comments from Manitoba's Chief Medical Officer of Health

Manitobans are familiar with influenza – “the flu” – which returns to Manitoba every winter. Although symptoms of the flu – fever, cough, tiredness and muscle aches – are often severe, most people are back on their feet within a few days. Influenza and other respiratory infections cause increased absenteeism from school and work in the winter months. For some, serious complications and death can occur – especially the very young, the elderly and those with chronic medical conditions. Although not always confirmed by diagnostic tests, it is estimated that about 100 deaths are associated with influenza every year in Manitoba.

To fight these effects, Manitobans at high risk, their caregivers and all health care workers are encouraged to get an annual flu shot. Getting a flu shot every year is necessary because there are many different influenza strains and each year they undergo mild changes (drifts). About three times a century, a more dramatic change (shift) occurs in an influenza strain. When that happens our immune systems have no specific antibodies or immune cells to fight the new strain. When a new strain of influenza causes significant illness and spreads from human to human around the world, it is called a pandemic influenza.

We do not have a pandemic influenza in Canada or anywhere in the world at this time.

Avian (bird) influenza has been identified in poultry and birds for many years. The H5N1 strain was first discovered in a small number of humans in Hong Kong in 1997. Avian flu is not a pandemic influenza because it does not spread easily from human to human.

Manitobans, like others around the world, may not know when the next pandemic will be, but are preparing to respond when the next pandemic arrives. How bad could it be? Perhaps, not as bad as some are fearing. Nevertheless, we need to be prepared. An effective response to a pandemic, including appropriate use of vaccines, antivirals, other public health measures and treatment, should significantly reduce the rate of severe illness and death, as well as the levels of fear and social disruption. The health of Manitobans and the abilities of our health system are much better now than they were during previous pandemics, so we have good reasons to be optimistic about our ability to withstand the next pandemic.

The public health plan described here is the result of the hard and good work of many – but there is more to do. Our goal is that every Manitoban – whether a health care worker, essential service provider or parent - will know what they need to do to care for themselves and others. This will help reduce illness and keep our province and its towns and cities functioning well during a pandemic.

Like all public health issues, it is important to keep things in perspective. While it is necessary to prepare for the next pandemic, we must also continue to address today's public health threats – infectious diseases such as tuberculosis and HIV/AIDS; chronic

diseases such as diabetes, injuries and mental health. If we can address the underlying causes of our major health problems, especially for those populations and groups at greatest risk, we will go a long way to reduce the impact of any new public health threat, not only a pandemic influenza.

While focusing on pandemic influenza, it is intended that these plans can be used to address other new or emerging public health problems.

As Manitoba's planning evolves, this document will be updated to keep everyone informed of the progress.

Dr. Joel Kettner

1. Understanding Influenza

“Ordinary” Influenza and Pandemic Influenza: Key Facts

What is “ordinary” influenza (flu)?

Influenza, commonly called “the flu,” is caused by the influenza virus, which infects the respiratory tract (nose, throat, lungs). Influenza is highly infectious and can spread easily from person to person.

What are the symptoms of the flu?

Influenza affects people with different degrees of seriousness, ranging from minor symptoms through to pneumonia and death. Influenza usually appears with a sudden onset of symptoms that typically feature fever and a cough, and may include one or more other symptoms such as:

- aching muscles and joints
- headache
- severe weakness and fatigue
- sore throat
- runny nose

Children can have additional gastrointestinal symptoms, such as nausea, vomiting and diarrhea, but these symptoms are uncommon in adults.

Although the term “stomach flu” is sometimes used to describe vomiting, nausea or diarrhea, these illnesses are caused by other viruses, bacteria or possibly parasites, and are rarely related to influenza.

Every year during the winter months, Manitoba experiences an epidemic of influenza. There are three types of influenza - A, B and C - as well as subtypes, all of which can cause infection in humans. Influenza A viruses are the most common cause of winter influenza epidemics. Influenza B viruses circulate at lower levels causing less severe outbreaks, particularly among young children in schools. Influenza C viruses are typically mild and usually not considered a public health concern. Influenza viruses undergo minor changes every year, causing the need for annual influenza immunization to protect against circulating strains of flu viruses.

Fortunately, this annual variation in influenza viruses is usually minor. This allows scientists to guide vaccine manufacturers in producing annual vaccines that are generally effective for circulating viruses. These vaccines protect individuals at high risk of developing complications from influenza. Over the years, most people have acquired some resistance to circulating types of influenza. As a result, the effects of influenza from year to year are greatest in people with lowered immunity, such as young children, the elderly and those with chronic diseases. This is why these high-risk groups are targeted for immunization each year, along with those at risk of spreading influenza to them, such as health care workers.

How is influenza spread?

Influenza is easily passed from person to person by droplets and small particles released into the air when infected people cough or sneeze. The virus can travel about one metre in the air and has been shown to survive on hard, non-porous surfaces (ex: telephones and doorknobs) for 24 to 48 hours; on cloth, paper and tissue for eight to 12 hours and on hands for five minutes. The virus survives better at low humidity, like we experience during winter.

The influenza virus enters the body through the nose or throat. This can happen when someone inhales droplets produced by the coughing or sneezing of others; after hand-to-hand contact with infected individuals; or, after handling objects contaminated by infected individuals, then touching their mouth, eyes or nose. Once infected with the influenza virus, it usually takes from one to three days to develop symptoms. However, someone with influenza can be contagious from the day before they develop symptoms up to seven days afterwards. Not everyone who is infected with influenza gets sick, but it is still possible for them to spread it to others. The disease spreads very quickly, especially in crowded situations. Because of this, and the fact that the virus can survive outside the body longer in cold and dry weather, seasonal epidemics in Manitoba (and the Northern Hemisphere) occur in the late fall and winter and are generally over by spring.

How do I know if I have influenza?

Respiratory illnesses caused by influenza are hard to distinguish from other respiratory illnesses by symptoms alone. Generally speaking, if you have a fever and a cough when influenza viruses are known to be circulating in the community, there is a good chance that you may have influenza. Swabs may be taken from sick individuals by doctors and sent for laboratory testing. This helps to determine when the flu has reached Manitoba and to monitor the types of flu viruses circulating in the province. This testing is performed by some physicians in Manitoba as part of the national FluWatch program.

During confirmed influenza outbreaks, many people seeking medical advice for upper respiratory tract infections could be infected by influenza. Testing of all affected individuals is neither necessary nor practical. Rapid diagnostic tests that can be used to detect influenza viruses within 30 minutes have recently become available. However, these tests are not widely available and are reserved in Manitoba for specific circumstances, such as to confirm an outbreak in a personal care home.

How is flu activity monitored?

Manitoba participates in the national FluWatch program to monitor flu activity in Canada. Volunteer doctors take part in the FluWatch program in Manitoba and submit weekly reports to the Public Health Agency of Canada (PHAC) on the number of people they see with flu-like illnesses in a typical day. Samples are submitted to the public health laboratory for flu testing. The PHAC monitors and identifies circulating strains of the influenza virus in Canada. The World Health Organization (WHO) analyzes data from around the world and, early in the year, recommends strains to include in the vaccine to make sure it is effective against recently circulating strains.

What is pandemic influenza and how is it different from ordinary flu?

Influenza A is the type involved in all known influenza pandemics. This is because these viruses can undergo major changes or shifts in makeup, producing a completely new strain. Most people have not built up any immunity to a new strain of influenza. As a result, large numbers of people become infected as it spreads. An epidemic like this that spreads throughout the world is known as a **pandemic**. For a pandemic to occur, it must be a new virus (to which the population has no immunity) and easily spread from person to person. There were at least three pandemics in the last century.

The most recent Influenza A pandemics occurred in 1957 (Asian influenza) and 1968 (Hong Kong influenza). Each caused significant illness and death around the world. The most infamous pandemic was the Spanish Flu, which is believed to have killed at least 40 million people worldwide in 1918 and 1919. During this pandemic, the death rate was highest among healthy young adults. This is directly opposite to annual influenza epidemics, which identify high-risk groups like the youngest and oldest, and those with chronic illnesses. This explains why a pandemic could pose such an impact on everyday activities and essential functions.

Based on historical patterns, public health experts predict that a pandemic will occur. However, it is not known when this will happen, where it will emerge, or how severely people will be affected. Theoretically, it is possible that a new influenza virus could emerge from a re-assortment of genetic material among different sources of influenza viruses, including human, avian (bird) and swine (pig) origin. This could happen if someone were infected with a human influenza virus and an avian or swine influenza virus at the same time. This is why public health officials are concerned about outbreaks of avian or swine influenza where humans become infected.

What are the key characteristics of pandemic influenza?

Experts look at a number of key characteristics when deciding if a particular flu virus is a potential pandemic strain.

For a new influenza virus to be capable of causing a pandemic, it must be able to:

- infect people (not just mammals and birds)
- cause illness in a high proportion of those infected
- spread easily from person to person

All previous influenza pandemics exhibited these characteristics.

Why should we be prepared for a pandemic?

In a typical flu season, up to 20 per cent of the population could get sick. In a pandemic, this number could be much higher, and cause more serious illness. When planning for a pandemic, we must prepare for situations where many health care workers and other essential workers could become ill when there is an increase in demand for their services.

It is obvious that the effects of a pandemic would be much wider than just the health sector. As a result, all parts of society and government must review their business continuity planning as a priority, paying particular attention to human resource contingency planning. Given the potential effects of a pandemic and the broad scope of preparedness activities, the Government of Manitoba has the responsibility to make sure that co-ordinated preparedness and response efforts are undertaken in our province.

Is this something Manitobans should be afraid of?

Pandemic influenza could affect much more than the health sector. As people avoid business or entertainment activities, a pandemic could affect all parts of society including the delivery of critical services.

In a pandemic, we expect there may not be enough health care providers or resources to meet the increased demand for health services.

Some Manitobans may find it scary to think about the effects a pandemic may have on rates of illness and death. However, we must put these fears into perspective. There is no confirmed evidence of any human-to-human spread of a new influenza virus at this time. In addition, Canadians are generally healthier now than during previous pandemics and our health system is better than ever before. Measures are being taken to increase our capacity to respond to the threat of a pandemic.

Manitoba Health is working with Manitoba's regional health authorities, other provinces and territories and the Public Health Agency of Canada, to make sure an excellent public health surveillance system is in place locally, provincially and nationally. The system will detect new strains of influenza and other communicable diseases early so we can respond quickly and effectively. In turn, the Public Health Agency of Canada is working with the World Health Organization to make sure a strong global surveillance system is in place.

Through global surveillance systems, the avian influenza situation is being monitored closely. Measures are being taken internationally to reduce the chances that human and avian influenza strains will mix, as this could create a new strain of influenza to which people would not be immune.

The collaborative efforts of all levels of government to contain the avian influenza outbreak in British Columbia in spring 2004 demonstrated how well animal and human surveillance and health systems can work together. Manitoba Health has a close working relationship with counterparts in the animal health field and is working to enhance links between animal and human influenza surveillance.

What is being done to protect people from pandemic influenza?

Due to the widespread effects of pandemic influenza, planning for a pandemic requires the involvement of the health sector, other government sectors, non-government organizations and ultimately, the participation of all Manitobans.

Manitoba Health is working within the department and with the regional health authorities and other partners in health service delivery, to make sure that business continuity plans are in place for the health sector. These business continuity plans will help us respond to any emergency affecting the health sector, whether a public health emergency (ex: pandemic) or another type of emergency (ex: natural disaster).

We do not know what strain of influenza will cause the next pandemic. Some believe that it will be caused by an avian influenza virus that mutates into a virus that is able to infect people and be transmitted from person to person. For this reason, public health officials and scientists monitor avian influenza outbreaks and instances where people have become infected. International public health alerting mechanisms are in place and Canada plays a key role in this global public health surveillance network.

An effective **vaccine**¹ is the main defence against an influenza pandemic. But, until that vaccine is available, **antivirals**² may be an important part of our response. This shows the need for a balanced and multi-faceted strategy, including providing information to the public on self-care and care of others at home, communicating when to stay home and when to go to work during a pandemic, and where and how to access health services.

The purpose of this document is to give Manitobans information about pandemic influenza and efforts to prepare for such a public health emergency. More information about specific readiness and response measures is outlined in the sections that follow.

What can I do to prevent myself from getting infected with influenza during a pandemic?

Public health officials expect that if a new type of influenza emerges and causes a pandemic, this virus will spread like the influenza viruses that cause outbreaks each winter. Influenza is highly contagious, so it spreads quickly in families and communities. There are, however, some steps you can take to reduce your risk of infection.

- **Improve your overall health.**
In general, healthier people are better at fighting off disease. To stay healthy, you should eat healthy foods, live an active lifestyle, don't smoke and avoid heavy alcohol consumption. Get enough sleep and try to maintain a positive and balanced outlook.
- **Wash your hands often.**
Washing hands is the most effective way of preventing the spread of disease. Get into the habit of washing your hands often with soap and warm water, scrubbing your wrists, palms, fingers and nails for 10 to 15 seconds. Rinse and dry with a clean towel. This should be done especially before meals, after using the toilet, and after you cough, sneeze or blow your nose. Teach your children to do the same.
- **Avoid visiting people who have the flu if you are able to do so.**
This will help prevent you from becoming infected. This advice must be balanced with the need to provide support and care to sick people. Caregivers to sick people should wear a mask when coming face to face with a coughing individual to reduce the risk of catching influenza.

¹ **Vaccines** are given by a needle in your arm. Vaccines cause the body to produce antibodies against the flu virus in the vaccine, providing immunity from the virus. The influenza vaccine contains inactive virus, so it cannot cause influenza. In a pandemic, a vaccine specific to the pandemic influenza virus affecting people will need to be developed. This is considered to be the most effective tool to protect the public in a pandemic.

² **Antivirals** are drugs prescribed by your doctor and used for the prevention and early treatment of influenza. Antiviral drugs work by reducing the ability of the virus to reproduce; however, they do not provide immunity from the virus. Some antiviral drugs are available as capsules (pills) that must be swallowed and some of these are available as a liquid; others are powders that must be inhaled.

- **Avoid large crowds.**
Large crowds are ideal for the spread of influenza, so at the time of a pandemic, public health may recommend that people avoid large gatherings. In general, the wearing of masks by well individuals during daily activities is not a recommended preventive measure. At the time of a pandemic, specific recommendations will be made by public health officials as needed.
- **Don't share eating utensils or drinks.**
If a family member is sick, keep their personal items (ex: towels and toothbrushes) separate from those of the rest of the family.
- **Get a vaccine when available.**
Vaccination is the main way to prevent influenza and reduce the effects of epidemics. Various types of influenza vaccines have been available and used for more than 60 years.
- **Take antivirals if recommended by your doctor.**
When taken before or immediately after exposure to influenza virus, but before symptoms have occurred, antivirals may help prevent illness. If symptoms have already occurred, their early administration may reduce the duration and severity of symptoms.
- **What if I think I have the flu?**
Most people with influenza recover without any serious problems. The disease can last for four to seven days and leave a cough and tiredness for several weeks. In general, there is no specific treatment for influenza. Antivirals may occasionally be prescribed by your doctor. Antibiotics are *not* effective against any virus,

including the influenza virus, although they will be effective against complications caused by bacteria such as pneumonia. Avoid going to work or social gatherings if you are sick. During a pandemic, if you are sick with symptoms of influenza and need to visit your doctor, you should wear a face mask to prevent spreading infection to others. At the time of a pandemic, Manitoba Health will provide information on steps you can take to help care for yourself if you have influenza.

- **What if my child is sick?**
Like adults, most children get better from influenza without any specific treatment. Sick children should be kept home from school and daycare. At the time of a pandemic, Manitoba Health will provide information on steps you can take to help care for your children if they have influenza.

During a pandemic, it will be important to:

- **follow directions given by public health officials.**
These may change over time as more information becomes available about the characteristics of the particular virus causing the outbreak.
- **follow infection control procedures if caring for a person with influenza.**
Providing care to a person with an influenza-like illness will be common during a pandemic. The likelihood of transmitting the disease is reduced by following basic precautions. Watch the Manitoba Health website for updates.

Table 1.1: The differences between ordinary flu and pandemic flu:

	Ordinary Flu	Pandemic Flu
When, Where	Every year during the winter months in Canada and the rest of the Northern Hemisphere.	Occurs about three times a century and can take place in any season. A pandemic is a global event.
Who	Affects Manitobans every winter.	Affects more people than ordinary flu; one-quarter or more of the world's population.
How	<ul style="list-style-type: none"> • Severe illness and deaths are generally confined to people over age 65; people with existing medical conditions like lung diseases, diabetes, cancer, kidney or heart problems; people with weak immune systems and the very young. • Four thousand deaths in Canada and approximately 100 deaths in Manitoba are attributed to influenza each year. These are cases where flu is known or highly suspected to have played a role in a person's death. 	<ul style="list-style-type: none"> • Pandemic flu is associated with much higher rates of illness, and a higher severity of illness and death. • The worst flu pandemic of the last century - the 1918 Spanish Flu - caused about 30,000 to 50,000 deaths in Canada alone and at least 20 to 40 million deaths worldwide. Some experts believe that these estimates are low.
Prevention —Vaccines	<ul style="list-style-type: none"> • A slightly new vaccine is produced every year to ensure protection from the types of influenza expected to circulate in the community. • This is required every year due to small changes in influenza viruses from one year to the next year. • The vaccine is effective because scientists are able to predict fairly reliably which types of influenza virus will circulate during the annual flu season in the Northern Hemisphere, based on flu activity in other parts of the world. 	<ul style="list-style-type: none"> • A vaccine against a pandemic type of influenza will not be available at the start of a pandemic. • This is because the virus type will be completely new. It will be different from the viruses that circulated the previous winter, and not predictable in the same way. • Once a pandemic is detected, scientists need to identify the virus. A specific vaccine is then manufactured based on the scientific findings. • It is anticipated that a specific vaccine will become available for use on a prioritized basis within four months.

	Ordinary Flu	Pandemic Flu
Prevention and Treatment—Antivirals	<ul style="list-style-type: none"> • Antiviral drugs can be used to both treat and prevent influenza infections. • Currently, antiviral drugs are used to manage outbreaks of influenza in long-term care facilities and to a lesser extent, to protect and provide early treatment for people at risk of becoming seriously ill due to influenza. 	<ul style="list-style-type: none"> • Antiviral drugs are expected to be in limited supply. • Countries, including Canada, are stockpiling the antiviral drug oseltamivir (Tamiflu®). • Manitoba has participated in national purchasing initiatives to stockpile Tamiflu® for use in a pandemic. The use of antivirals during a pandemic will depend on the nature and characteristics of the outbreak.

History of Influenza Pandemics

Historical Background

Despite predictions that an influenza pandemic will occur at some point in the future, there is much that we can't predict. The influenza pandemics that took place in the last century share some similarities; however, there have also been

differences. These differences are not only between pandemics, but even within a single pandemic in different geographical areas. The following is a brief overview of the major influenza pandemics in the last century.

Table 2.1

Pandemic	"Spanish Flu"	"Asian Flu"	"Hong Kong Flu"
Strain	A(H1N1)	A(H2N2)	A(H3N2)
Year	1918-1919	1957-1958	1968-1969
Likely origin	Not known (first cases identified in Europe and the U.S.)	China	China
Estimated Deaths:			
Global	At least 20 to 40 million – some experts believe this is a low estimate	1-2 million	1-4 million
Canada	30,000-50,000	not known	not known
Age Group Most Affected	Healthy young adults (20 to 50 years)	Very young and very old	Very old and those with underlying medical conditions

2. How Will Pandemic Influenza Affect Manitoba and What Can I Do?

It is not possible to predict when a pandemic will occur. However, it will likely start elsewhere in the world, then spread across the globe. Therefore, once a pandemic starts, it will only be a matter of time before it reaches Canada and Manitoba. It is also not possible to predict who will be most affected by the pandemic or how severely they will be affected. There is much uncertainty associated with estimating the scale of illness, hospitalization rates and death rates. We are still learning about pandemics that occurred in the 20th century. What we do know, however, is that there will likely be a significant impact on Manitobans and the health services they rely on for routine, emergency and long-term care. Health care providers and other service providers will be at risk like the rest of the population, just as the demand for their services will rise greatly.

The potential effects of pandemic influenza in Manitoba

We will not know how big the effects of an influenza pandemic in Manitoba will be until it happens. A pandemic may affect the population like ordinary influenza, where the youngest and oldest and those with chronic conditions are most severely affected. Or, a different age group or section of the population might be affected. A model for estimating the potential impact of an influenza pandemic has been used to calculate estimates for planning purposes. In Canada, it is thought that approximately 4.5 to 10.6 million people could become ill, resulting in 11,000 to 58,000 deaths.

The same model applied to Manitoba would lead to approximately 176,000 to 410,000 people becoming ill, resulting in 700 to 1,600 deaths. To make sure the province is prepared, Manitoba is developing plans to prepare for 410,000 Manitobans becoming ill and between 4,100 to 6,100 potential deaths. There is still much we do not know about previous pandemics, such as the precise effects on the population. However, we are a considerably healthier population now than in the past; and we have access to a wide range of interventions, such as antiviral drugs, vaccines and antibiotics, supported by a highly developed health care system. Careful and comprehensive planning will help reduce the illness and deaths that could possibly result from a pandemic.

i. Impact on Health Care

A pandemic will place great pressure on Manitoba's health system. Higher-than-usual numbers of people will seek care for influenza and its complications. Health care and other pandemic responders will also become ill. This will decrease the health workforce and increase demand for services, likely resulting in service delays. Some services may be unavailable. Health human resource contingency planning takes into account the varying degrees of a pandemic's effects. Appropriate self-care and care for family members at home will be more important than usual.

ii. Impact on Business

A pandemic will also affect businesses, with staff getting sick and staying home. Customers may decrease in numbers due to illness or because people are staying at home. This could have a negative economic impact on business and therefore, on Manitoba. Business continuity plans should identify core services and address how services will be maintained in the event of an increase in staff absenteeism rates.

iii. Impact on Schools

Influenza spreads rapidly in schools each winter. During a pandemic, this spread is expected to occur even more quickly. Higher than normal student and staff absenteeism rates are expected during a pandemic. Schools may also be affected by disruptions to transportation services. Public health officials may consider

closing schools to minimize the spread within a community, particularly if school-age children are among the groups most affected by the virus. School and child care authorities will collaborate with public health officials during a response to a pandemic.

iv. Impact on Services

The manufacture and transportation of goods and all kinds of services are likely to be affected by a pandemic influenza due to the number of people expected to get sick. Disruption may also result from public health and other types of control measures that countries around the world may implement, such as restrictions on public gatherings and other activities.

What Can I do to Prepare Myself and My Family?

- **Plan ahead.** We don't know if the next emergency facing Manitoba will be pandemic influenza or a natural disaster. Therefore, you should make general family emergency preparedness plans, such as making sure your family has enough food, drinks and basic household items to last for at least one week. For more information on general family preparedness, please refer to the Manitoba Emergency Measures Organization's family emergency preparedness checklist: www.gov.mb.ca/emo/handbook/checklist.html

- **Plan with your neighbours and community to support each other in times of emergency.** Make sure you have someone you could call for help if you were to become seriously sick.

Have a plan to check on sick people living alone. Remember that schools and child care centre may be closed. Have a backup plan to care for your children.

Some key points to remember:

Ordinary Influenza—what you can do now

- During influenza season, you should wash your hands regularly, cover your mouth when you cough, cover your nose and mouth when you sneeze, and teach these basic hygiene practices to children. Stay home when you are sick to avoid spreading it to others.
- High-risk individuals and health care providers should be vaccinated annually against influenza.
- For more information on Manitoba Health's eligibility criteria for influenza vaccine, visit www.gov.mb.ca/health/flu/

Pandemic Influenza—what you should know

- We can't prevent a pandemic from happening and we don't know when one might take place.
- Should a pandemic occur, specific advice to the public will be communicated through regular channels, such as the media, Health Links-Info Santé, websites and health care providers.
- Direction and advice to the public, health care providers and others will be based on the immediate situation and will include actions people can take to help themselves, their families, their neighbours and their communities.
- Watch the Manitoba Health website (www.gov.mb.ca/pandemic/) for information on pandemic influenza and listen to your local news for important updates on preparedness and current events.

3. Responding to Pandemic Influenza

Threat Levels for Pandemic Influenza

Globally, we are currently in a pandemic alert period. There are several levels indicating the threat of a pandemic. Determining the level of risk is based on knowing if a new influenza virus has been detected, how people are being affected, whether the new virus is able to spread from person to person, and if so, how easily it can be spread. Each alert level requires a set of specific public health activities. These activities prepare the health system to detect, report, respond to and analyze any cases of human illness caused by the new virus, and to manage the demands on the health sector should an outbreak or pandemic occur.

Key actions during the pandemic alert period include enhancing normal operating systems and making sure contingency plans are in place for managing a surge or increased demand on regular systems. The specific type and intensity of these activities depends on how many people have been affected by the new virus, the location of the outbreak, and whether the virus has shown it is able to spread from person to person.

Assumptions Used in Planning for a Pandemic Response

Since we do not know the precise characteristics of a future pandemic, planning is based on several assumptions. We know that rapid virus identification and analysis will be important to allow our plans to adapt quickly as events unfold. These assumptions include:

Characteristics of a Pandemic Virus:

- The virus causing the next influenza pandemic will be a new strain of influenza A virus to which the population may have little or no immunity.
- The incubation period, or the length of time from exposure to symptom onset, is expected to be that of a typical influenza A virus – one to three days.
- The time frame when the virus can spread from one infected person to others will be from 24 hours before onset of symptoms up to seven days afterwards. This time frame may be longer in children and people with decreased immune systems.
- Many people will be infected but show no symptoms or mild symptoms. These people could still spread the virus to others.
- The virus will be spread by droplets from coughing and sneezing, and by touching objects that have been contaminated with droplets from infected people.

Onset of a Pandemic:

- A new flu virus could arise in any country. However, it is most likely to occur in Asia, where the close proximity of dense populations to domestic animals may allow for mixing of influenza genes.
- The emergence of a new influenza virus does not necessarily mean the onset of a pandemic. For this to happen, three factors are thought to be important: little or no human immunity to the new virus, the ability of the virus to cause serious illness in people, and the ability of the virus to spread efficiently from person to person. False alarms are also possible.

Spread of a Pandemic:

- The first peak of illness in Canada may occur within two to four months after the virus arrives in Canada. The first peak in deaths is expected about one month after the peak in illness.
- Historically, pandemics tend to spread in two or more waves, either in the same year or in successive influenza seasons. A second wave may occur within three to nine months of the initial outbreak wave and may cause more serious illness and deaths than the first.
- In any place, including Manitoba, the length of each wave of illness is likely to be six to eight weeks.

Impact of a Pandemic:

- In general, most people will not have specific immunity to a new strain of influenza virus and will be susceptible in a pandemic. How well our immune systems will be able to fend off disease during a pandemic will, in part, depend on our overall health.
- The intensity of a new flu virus and the age groups it targets will have a major influence on its effects.
- The improved health of people today, antivirals, vaccines and modern health services will have positive effects on mortality rates, compared to previous pandemics. However, much will depend on the characteristics of the new flu virus.

For more background information on pandemic influenza, please refer to the Canadian Pandemic Influenza Plan: www.phac-aspc.gc.ca/cpip-pclcpi/

Pandemic Influenza Response Goals

Manitoba's goals are the same as those of the Canadian Pandemic Influenza Plan, namely:

- to minimize serious illness and deaths
- to minimize societal disruption

Public Health Pandemic Influenza Strategy in Manitoba

Manitoba Health has done considerable work to prepare for public health emergencies, specifically pandemic influenza. This work is part of our daily efforts to provide quality public health policy direction and program support to the regional health authorities, who provide public health programs and services to Manitobans. This work is ongoing, and we work hard to make improvements as new information becomes available

While we are confident in our health system, we know there is more work ahead. Both within and beyond public health, we need to prepare for a public health emergency on the scale that an influenza pandemic could create. We can't prevent a pandemic from occurring and it is unlikely that the global spread of a pandemic flu virus could be prevented once it emerges. The emphasis in pandemic flu response, therefore, is on reducing the effects. There are several ways the health system can do this, including:

- providing vaccines (once they become available)
- using antiviral drugs

- developing public health measures to prevent or delay the spread of infection
- developing effective and accurate methods of diagnosis and treatment, including supportive care and antibiotics for bacterial complications

Strategy Principles:

Manitoba's response to public health emergencies, including pandemic influenza, is based on the following principles:

- ***Strengthening existing systems and processes***
Pandemic planning is being included, as much as possible, in regular operations. For example, expanded immunization programs strengthen the capacity of related systems and infrastructure.
- ***Building generic systems and processes***
Manitoba needs to prepare for many possible health emergencies, including an influenza pandemic or any other respiratory disease outbreak. Since we cannot predict emergencies before they happen, we must have a system that can readily adapt to meet the needs of any emergency response. It is more efficient to build a core response system and adapt it to meet the needs of a single event than to build individual response systems for each possible event.

- ***Collaborating with and being consistent with other jurisdictions***

Due to the far-reaching effects of a significant respiratory disease outbreak, such as a pandemic, it is essential for Manitoba's plan to be as consistent as possible with the nationally agreed-upon approaches, and for our actions to be co-ordinated. This co-ordination occurs with many organizations including regional health authorities, the Public Health Agency of Canada, First Nations and Inuit Health Branch of Health Canada and other provinces and territories.

Specific Components of Public Health Pandemic Preparedness Efforts in Manitoba

Manitoba already has existing systems and resources to deal with respiratory disease outbreaks. We are also working to make improvements as needed and ensure these systems have the capacity to deal with a public health emergency such as a pandemic. In keeping with nationally agreed-upon approaches, the components of Manitoba's plan that address a respiratory disease outbreak complement corresponding national plans.

- i. **Surveillance**

Surveillance is critical to the work of public health and is required to detect and assess an outbreak and to identify the cause. Canada participates in global surveillance efforts for influenza and other diseases, and within Canada, the provinces and territories participate in national surveillance efforts. The national system is in place for the rapid detection of respiratory illnesses causing unusually severe illness and/or death. This system allows public health to provide early warning and assessment of potential new cases of emerging respiratory infections, such as with a pandemic strain of influenza.

Established Systems and Processes for Influenza and Other Respiratory Disease Surveillance in Manitoba

Manitoba Health receives information on influenza activity through the following routine surveillance initiatives:

- Outbreak detection, reporting and management: Regional medical officers of health, healthcare practitioners and regional health authorities report significant influenza developments to Manitoba Health, such as outbreaks of influenza in hospitals, nursing homes and schools.
- School absenteeism: Schools report absenteeism rates above 10 per cent to public health in their region. When authorized by a medical officer of health, public health nurses will test a small number of ill children for influenza to find out if an outbreak of influenza is occurring.

- Influenza-like illness activity monitoring: A number of pre-identified doctors report weekly on influenza-like illness activity in their practices. They also contribute to influenza virus surveillance by performing throat swabs on some patients.
- Influenza virus activity–laboratory monitoring and reporting: Cadham Provincial Laboratory reports all confirmed influenza results by rapid antigen testing and culture. In Manitoba, both the Cadham Provincial Laboratory and the National Microbiology Laboratory in Winnipeg perform testing to identify the specific types of influenza virus causing illness in the province.

The following systems are currently in place for emerging respiratory diseases, including a new strain of influenza. These systems will be used for pandemic influenza:

- When a new or re-emerging respiratory disease is detected anywhere in the world, the World Health Organization informs the Public Health Agency of Canada, which notifies provincial and territorial public health officials. Through a variety of national networks, the provinces, territories and federal government discuss and develop recommendations for enhanced surveillance and for any actions that are being taken or should be taken.

- National guidelines on surveillance and reporting of emerging respiratory diseases are in place and Manitoba follows these guidelines.
- When there is a situation of concern about severe respiratory illness in Manitoba, key public health responders at the regional and provincial levels are notified. When such an alert is issued, efforts are coordinated to further investigate sick individual(s), their contacts and the possible source of infection.
- Any laboratory detection of a new respiratory virus in Manitoba is reported to Manitoba Health. The director of the Cadham Provincial Laboratory participates in the Canadian Public Health Laboratory Network. This network provides surveillance recommendations and standards for public health and laboratories, especially during evolving crises.
- Other provinces, territories and the Public Health Agency of Canada are notified of situations of concern or known or suspected cases, through a secure national electronic surveillance system.

ii. Vaccine and Antiviral Strategy

General information is provided below on vaccines and antiviral drugs, followed by details of Manitoba's strategy for vaccine and antiviral use during a pandemic.

General information about vaccines and antiviral drugs

Vaccination is considered the most effective way to protect the public from pandemic influenza. Influenza vaccine causes the body to produce antibodies against the flu virus in the vaccine, providing immunity from the virus. The vaccine contains inactive virus, so it cannot cause influenza.

Antivirals are drugs used for the prevention and early treatment of influenza. When taken before or immediately after exposure to influenza virus, but before symptoms have occurred, antivirals may help prevent illness. If taken very soon after getting sick (within 48 hours), they can reduce influenza symptoms, shorten the length of the illness and potentially reduce any serious complications. Antivirals work by reducing the ability of the virus to reproduce; however, they do not provide immunity from the virus.

Influenza is a viral infection and antibiotics do not work against viruses; however, antibiotics may be prescribed to treat secondary bacterial complications such as pneumonia.

Antiviral drugs may have an important, though limited, role to play in an outbreak of pandemic influenza. Since a vaccine specific to the strain of disease is not likely to be available for at least several months after the virus is detected, antivirals may be the only treatment available until a vaccine is developed.

Manitoba's Vaccine Strategy for Pandemic Influenza

Pandemic preparedness for vaccines includes making sure we have the capacity to carry out mass immunization campaigns. As vaccine becomes available, the goal is to immunize the entire population. It may be necessary to provide two doses of vaccine to each individual. However, since the vaccine will be available in a series of shipments, priority groups will be first to receive the vaccine. As soon as Health Canada approves the new vaccine, Manitoba Health, regional health authorities and other health service delivery organizations will work together to mount a province-wide mass immunization campaign. Planning for mass immunization is underway.

How will vaccine be distributed during a pandemic?

Vaccination is the cornerstone of the Canadian and Manitoba pandemic influenza preparedness plans.

The goal of Canada's pandemic vaccine strategy is to produce enough vaccine to protect all Canadians as quickly as possible. Manitoba shares this goal for its population. Once available, the goal is to immunize all Manitobans on a priority basis.

We understand that during a pandemic, Manitobans will be eager to have themselves and their families immunized. However, when vaccine becomes available, it will likely be available in batches. This is why priority groups have been identified to receive the first doses of vaccine. These groups will likely include health care workers, paramedics and other essential workers who will be needed to care for the sick.

Priority groups for vaccines are required because the vaccine will be available in batches as it is produced. As with vaccination programs for annual flu, individuals at highest risk of getting infected and developing complications should be immunized as soon as possible. During a pandemic, it is critical that essential responders are protected so they can provide essential health care, emergency and social response services. Therefore, nationally agreed-upon priority groups will be used in Manitoba for influenza vaccination during a pandemic.

It is important to note that priority groups may be adjusted, depending on the epidemiology of the pandemic (ex: age and high-risk groups affected). We won't know who will be at greatest risk until the time of a pandemic.

For more information on vaccine for an influenza pandemic, please visit our website at: www.gov.mb.ca/pandemic

Established System and Processes for Vaccine Programs in Manitoba

Manitoba has a well-established annual influenza immunization program. The annual influenza vaccine becomes available in the fall of each year and is distributed to regional health authorities and doctors' offices. Manitoba has the following systems and processes in place:

- vaccine acquisition, storage and distribution (also applies to antiviral drugs)
- storage and handling protocols for vaccines
- established ways for health care practitioners to get the vaccine
- defined target populations for vaccination (identified by vaccine eligibility criteria)
- contracts in place to ensure central storage and co-ordinated distribution of all publicly-funded vaccines
- electronic database for vaccination coverage and reporting system for vaccine-associated adverse events (a component of all immunization programs in Manitoba)

In preparation for pandemic influenza, Manitoba's existing systems are being tested and enhanced. The province has experience in mass immunization campaigns and rapid implementation of such campaigns (ex: meningitis).

Manitoba's Strategy for the Use of Antiviral Drugs during a Pandemic

Uses of Antiviral Drugs

In an influenza pandemic, Manitoba will use antiviral drugs in a way that is consistent with the national approach and based on the best evidence available. Once we know how the new virus is affecting the population, a public health assessment of risk will be made to guide the use of antiviral drugs.

Antiviral drugs can be used for either treatment or prophylaxis.

Treatment: Antiviral drugs can be taken to treat illness from influenza, after symptoms have occurred. To be effective, antivirals must be taken within 48 hours of the onset of symptoms.

Prophylaxis: Antiviral drugs can be taken to prevent illness from influenza, either before exposure occurs or immediately after exposure, but before symptoms occur.

About Antiviral Drugs

There are only a small number of antiviral drugs licensed for use for influenza in Canada. These are:

- Oseltamivir (Tamiflu®), a neuraminidase inhibitor, licensed for both prevention and treatment of influenza A and B
- Amantadine, an M2 ion channel inhibitor, licensed in Canada for both the prevention and treatment of influenza A infections
- Zanamivir, a neuraminidase inhibitor, licensed for treatment of influenza A and B

It is important to note that antiviral drugs are not a cure-all remedy. There are several issues surrounding the use of antiviral drugs in an influenza pandemic. They include:

- Effectiveness: It is not known for sure how well any specific antiviral drug will work against a new influenza virus. Oseltamivir (Tamiflu®), currently recommended for the treatment and prevention of influenza, is the drug being stockpiled by governments in Canada (including Manitoba), and around the world.
- Resistance: It is possible that the influenza virus causing the pandemic could become resistant to a particular antiviral drug. The scientific and medical community currently monitor for antiviral drug resistance in influenza viruses. This monitoring would continue during a pandemic.

- Safety: The most common side-effect of oseltamivir is nausea. Safety and effectiveness of repeated treatment or prevention courses of drugs like oseltamivir have not been studied. However, there is some evidence of its safety for continuous use for up to six weeks.
- Availability: There are a limited number of manufacturers of antiviral medication. Manitoba, along with the other provinces and territories, continues to work with the Public Health Agency of Canada to strengthen provincial and national stockpiles of oseltamivir. It is widely recognized that antiviral drugs are in relatively scarce supply internationally. Therefore, a national stockpile is required to secure a supply of antiviral drugs in preparation for a pandemic. Furthermore, even with a national stockpile, the demand may exceed the stockpiled supply, as available supplies will be used up rapidly at the start of a pandemic either for early treatment of cases or for preventative treatment of contacts.
- Ethics: There are many ethical issues surrounding the potential use of antivirals in a pandemic. Because there will likely be insufficient supply of drugs available, decisions will need to be made how best to use them. Much discussion has taken place on this topic and guidelines have been developed by the Canadian Pandemic Influenza Committee. These guidelines will be reviewed on an ongoing basis as our collective scientific understanding evolves.

For more information on antiviral drugs and their potential use in Manitoba during an influenza pandemic, please visit our website at:
www.gov.mb.ca/pandemic

Established Systems, Plans and Processes for the use of Antiviral Drugs in Manitoba

- Manitoba Health has protocols in place for the use of antiviral drugs in the management of influenza outbreaks in facilities such as personal care homes. Manitoba Health maintains an annual stock of the antiviral drug oseltamivir (Tamiflu®) specifically for this purpose.
- Manitoba acquired a stockpile of this drug through participation in nationally co-ordinated cost-shared stockpile purchasing initiatives, where provinces, territories and the federal government purchased antiviral drugs based on population proportions.
- Central storage and regional distribution mechanisms for antivirals are in place. Planning is underway to make sure this system can support mass distribution that would be needed during an influenza pandemic.

iii. Other Public Health Measures or “Societal” Measures

In Manitoba, *The Public Health Act* gives public health officials the authority to deal with public health emergencies, such as pandemic influenza. Through provincial-regional networks, Manitoba Health provides doctors and regional health authorities with regularly updated information on how to detect, report and manage cases of severe respiratory illness. Regional health authorities are updated on provincial and national planning for public health threats, such as pandemic influenza, and are consulted on adapting nationally produced guidelines for use in Manitoba.

During an outbreak or pandemic, Manitoba Health will provide doctors, regional health authorities and health care facilities/agencies with direction on managing patients with the disease, and those who have come in contact with infected individuals. A rapid communication system is in place to transmit information to health providers on a same-day basis. This direction will help protect the health of the public and that of health care workers.

Other public health measures that may be considered include:

- providing antiviral medication for treatment and prevention of illness, as well as vaccines if available
- closing hospital wards to visitors, and other restrictions of movement in the community if needed
- postponing or cancelling non-essential public meetings and events
- isolating known cases and quarantining suspected cases and contacts of cases

Medical officers of health and other experts will examine the practicality and effectiveness of various measures once specific information emerges, such as ease of transmission and severity of disease. Manitoba Health will continue to liaise with other provinces, territories and the Public Health Agency of Canada in these efforts. The measures implemented by public health officials will be reviewed and may change as more is learned about the specific nature of the disease. These changes will be communicated in a timely manner to all stakeholders.

For more information on public health measures that could be implemented during an influenza pandemic, please visit our website at:

www.gov.mb.ca/pandemic

iv. Communications

A communications strategy is in place that applies to any public health emergency. At the time of an emergency, such as an influenza pandemic, key messages tailored to the specific nature of the event will be developed, based on surveillance information and scientific analysis. Messaging to the public during a pandemic will include information on the actual event; what individuals, families and communities can do to protect themselves and to cope with the situation; what steps they should take to manage their daily activities; and how they can help respond and what steps to take if they're ill, including how and where to access health services.

- While we do not have a pandemic influenza in Canada or anywhere in the world at this time, it is important to understand key facts about pandemic influenza, public health preparedness activities and how a public health response to pandemic influenza will be handled in Manitoba. This guide will be reviewed and updated on a regular basis by the Office of the Chief Medical Officer of Health so Manitobans are informed as new information becomes available.

