

Public Health

Emergency Preparedness and Response

Vaccines and Antivirals

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

What is the difference between vaccines and antiviral drugs?

The main way to prevent illness and death from influenza (flu) is through vaccines. Vaccines cause the body to produce antibodies against the flu virus, providing immunity. The vaccine contains inactive virus, so it cannot cause the flu.

Antivirals are drugs used for prevention and early treatment of influenza. If taken soon after a person gets sick (within 48 hours), they can reduce flu symptoms, shorten the length of the illness and potentially reduce serious complications. Antivirals work by reducing a virus' ability to reproduce; however, they do not provide immunity from the virus.

In a pandemic influenza outbreak, antiviral drugs may play an important although limited role. In the early stages of a pandemic, a vaccine specific to the strain of influenza may not yet be available. Antivirals may be the only specific treatment available until a vaccine is developed.

NOTE: Antibiotics are used to treat bacterial infections. Influenza is a viral infection and antibiotics do not work against viruses. Sometimes influenza causes complications such as secondary bacterial infections. If this happens, antibiotics may be prescribed.

What's being done to develop a pandemic influenza vaccine?

A vaccine for a pandemic strain of influenza virus can only be developed once a pandemic starts and scientists isolate the specific virus causing the outbreak.

Canada has a 10-year contract with a Canadian vaccine manufacturer for the development of a pandemic vaccine, if one is needed. Manitoba, along with the other provinces and territories, is a participant in this contract. For more information, please visit the Public Health Agency of Canada website at: www.phac-aspc.gc.ca/influenza/pandemic/e.html

What is involved in vaccine planning for pandemic influenza?

There is ongoing work, both within Canada and internationally, in many areas related to pandemic vaccine development. These include identifying and reviewing scientific, legal, logistical and financial issues as well as developing the required components of a national pandemic influenza immunization program.

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 and is preparing to be able to vaccinate all Manitobans. It may be necessary to provide two doses of vaccine for each person immunized although that is not confirmed at this time.

Some of the considerations in preparing for a pandemic vaccine response include the following:

- Vaccines only work if they match the virus that is infecting people. This is why a vaccine for a pandemic strain of influenza cannot be developed until the virus causing the pandemic has been identified and isolated in a laboratory.
- The timing of vaccine availability with the onset of pandemic activity in Canada is also not known. It is anticipated that a specific vaccine will become available for use on a prioritized basis within approximately four to six months.
- During a pandemic, Manitobans will be eager to have themselves and their families immunized. When vaccine becomes available, it will likely be distributed 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.

Why do we need a stockpile of antiviral drugs?

Until a pandemic vaccine is available, antivirals will be an important part of a pandemic response. Although antivirals cannot provide immunity to the influenza virus, the drugs can be used for the treatment and/or prevention of illness.

Osetamivir (Tamiflu®) is currently considered the antiviral drug of choice for use during a flu pandemic. Currently, the global supply of this drug is limited; during a pandemic, it is possible that stocks may be depleted. Given the potential shortage of osetamivir, a nationally co-ordinated response will be essential to ensure Canada is prepared for the pandemic.

An antiviral stockpile is only one component of pandemic preparedness. The public health pandemic influenza strategy also includes a domestic vaccine supply and other public health measures to reduce the effects of a pandemic.

Do we know if antivirals will be effective against a pandemic influenza strain?

The World Health Organization (WHO) has recommended osetamivir specifically for the treatment and prevention of avian influenza H5N1. The WHO has further recommended that countries consider stockpiling it for use against a pandemic strain of influenza; however, its effectiveness will not be known until a pandemic occurs.

The H5N1 avian influenza virus has the potential to become a pandemic influenza that affects humans. Studies have shown that osetamivir is effective against this strain of avian influenza.

Is there potential for a pandemic influenza to develop resistance to antivirals?

Yes, resistance is a possibility. Based on scientific evidence currently available, the class of antivirals to which osetamivir belongs has a lower risk for drug resistance to develop and also a lower risk of side effects.

To reduce the risk of drug resistance, it is extremely important to use antivirals appropriately during a pandemic.