

## Chapter 10: Antiviral Drugs

Antiviral drugs can be used to treat or prevent influenza, and will likely be the only virus-specific measure available during the first wave of illness before vaccine is available. Statistical modeling suggests that early treatment of influenza with antiviral drugs can significantly reduce influenza complications and the need for hospitalization.

The antiviral drug strategy describes the role of Peel Public Health and other health sector stakeholders in the distribution and use of antiviral drugs during the pandemic.

### Objectives of the Antiviral Drug Strategy

The objectives of the antiviral strategy are:

- To provide antiviral drugs to all persons needing treatment within 48 hours of onset of their illness; and
- To monitor uptake, safety, and resistance to antiviral drugs.

### Description of the Antiviral Drug Strategy

All provinces and territories are participating in the national stockpile of antiviral drugs that is being created for use in the next influenza pandemic. Stockpiling is essential if antiviral drugs are to be used, as commercial supplies are expected to be scarce, or not available, at the time of a pandemic. Ontario has announced plans for a large stockpile that will allow treatment of 25% of the provincial population.

The Ministry of Health and Long-Term Care (MOHLTC) is stockpiling two antiviral drugs: oseltamivir (Tamiflu®) and zanamivir (Relenza®) (see Table 10.1). The stockpile will consist of 90% oseltamivir, some in oral suspension form for children or elderly persons who are unable to swallow capsules, with the remaining 10% as zanamivir to provide an alternative drug.

**Table 10. 1: Antiviral Drugs for Pandemic Use**

**Oseltamivir phosphate:**

Tamiflu® is available in two forms: 75 mg tablets in a 10-dose blister pack, or an oral suspension which is reconstituted into a treatment course of the drug. Tamiflu® can be used for the treatment or prevention of influenza in persons one year of age or older.

**Zanamivir:**

Relenza® is a powdered neuraminidase inhibitor taken by inhalation. Relenza® is supplied with an inhalation system called a Diskhaler. Relenza® is currently approved in Canada for treatment or prevention of influenza in persons seven years of age and older.

Oseltamivir and zanamivir are classified as neuraminidase inhibitors (Nis). Nis act by inhibiting the release of new viruses from an infected cell, thereby stopping the spread of the virus. When used for treatment, the Nis have been shown to shorten the duration of illness and to reduce the risk of complications and hospitalization. A major challenge to their use is that treatment with Nis must begin within 48 hours of onset of illness, and preferably within 12-24 hours.

Antiviral drugs may also be used to prevent illness in individuals, or in family settings, and to control outbreaks in long term care homes and other health care facilities. Prophylactic use by health care workers or essential service workers could help maintain the health care system and other essential services. This potential deployment of antiviral drugs is still under consideration at the national and provincial levels.

### **Antiviral Drug Release, Distribution, and Use**

The provincial distribution plan for antiviral drugs has not yet been developed; thus, it is not known how antiviral drugs will flow from the province to the end user. However, it is anticipated that distribution of antiviral drugs to local areas will begin before pandemic activity reaches Ontario. If antiviral drugs flow through public health departments, Peel Public Health will have to store, and subsequently distribute, approximately 2.75 million doses of drug.

For treatment of ill persons, it is anticipated that amounts of antiviral drugs, based on the population served by the hospital, will be provided to each of the three hospitals and long term care homes based in the Region of Peel. These health care settings are expected to follow MOHLTC guidelines in using the antiviral drugs for treatment of pandemic influenza in hospital patients, long term care residents, and ill employees.

The Health Services chapter of this plan (Chapter 12) describes the establishment of community influenza assessment, treatment, and referral centres (Flu Centres) throughout Peel Region to deal with persons in the community with suspect influenza. If established, Flu Centres will likely be the primary venue for the distribution of antiviral drugs to ill persons in the community. It is not expected that antiviral drugs will be made available to individual doctor offices or to every community pharmacy. However, depending on provincial direction, select community pharmacies may be used as distribution points for antiviral drugs, especially early in the pandemic before Flu Centres are established.

Peel Public Health will provide ongoing advice to physicians and other health care providers on recommended antiviral treatment and prophylaxis regimes and will make patient information materials available for use. Peel Public Health will also alert health care organizations and physicians when influenza reaches and leaves the Region of Peel, as antiviral therapy or prophylaxis is only appropriate when influenza is circulating. It is anticipated that once influenza is known to be circulating locally, most antiviral prescribing will be based on clinical criteria, with diagnostic testing confined to cases with unusual presentations.

### **Transport and Storage**

Although the precise details are not yet known, some general principles for transportation and storage can be identified:

- Antiviral drugs can be stored and transported without cold chain considerations; and
- Due to the anticipated demand and scarcity of antiviral drugs, security should be provided during transportation and storage.

Specifics on the coordination of antiviral drug transportation will be identified in future editions of the plan.

### **Tracking and Surveillance**

All organizations and sites that will dispense, or administer, antiviral drugs will be expected to follow provincial eligibility criteria and guidelines for use, and to provide data on antiviral drug use and wastage, as required by MOHLTC or Peel Public Health.

Hospitals, physicians, and other health care providers will be expected to report any severe or unexpected adverse reactions to antiviral drugs through the usual Health Canada system for reporting adverse drug reactions. This process involves on-line, telephone (1-866-234-2345), or fax reporting to Health Canada. These reports are to be sent directly to Health Canada, not Peel Public Health.

Instances of suspected antiviral drug resistance (e.g., failed outbreak prophylaxis) should be reported to Peel Public Health, which will provide advice on appropriate specimen collection and testing in conjunction with the public health laboratory.

### **Prophylactic Use of Antiviral Drugs**

Antiviral drugs can be used to prevent influenza infection, as well as to treat illness. The federal and provincial governments will determine if prophylaxis will be provided from national or provincial antiviral stockpiles and will identify who will be eligible to receive prophylaxis. Decisions regarding prophylaxis are expected in early 2007. Peel Public Health will develop plans to distribute or dispense, prophylactic antiviral drugs, as directed by MOHLTC.

If prophylactic antiviral drugs are provided to health care organizations, these organizations will be responsible for distributing the medications to employees in accordance with MOHLTC direction and guidelines. Peel Public Health will assist organizations to develop efficient distribution plans.

Some hospitals and private agencies may have their own stockpile of antiviral drugs for prophylaxis of employees and medical staff. These organizations will be responsible for the use and distribution of their own antiviral drugs.

### **Next Steps**

Peel Public Health will:

- Finalize the antiviral strategy, in cooperation with health stakeholders, when the provincial guidelines are available; and
- Develop storage and security arrangements for antiviral drugs.

Hospitals, long term care homes, and CCACs will:

- Develop their own plans for secure storage, distribution, and administration of antiviral drugs.