

Pandemic Influenza

Section 6: Antiviral Drugs

6. Antiviral Drugs

Antiviral drugs are effective for treatment and prophylaxis of annual influenza. During the pandemic, particularly during the first wave of illness when vaccine is not yet available, antiviral drugs are expected to be effective. The Department and the Regional Health Authorities must plan for the strategic use of a limited supply of antiviral drugs. The creation of a provincial stockpile of antiviral drugs will ensure their availability for the province during the pandemic.

Drugs currently approved for the prevention and treatment of influenza in Canada include:

- **Amantadine®**, has been available for several decades but has limited use because of its side effects and the rapid development of resistance when used for treatment;
- **Tamiflu®** (oseltamivir phosphate) and **Relenza®** (zanamivir), the neuraminidase inhibitors, when administered within two days of onset of the first symptoms, have been shown to reduce the duration of illness, complications, antibiotic use, hospitalizations and deaths.

During the pandemic, antiviral drugs will be used in the province in accordance with established national priorities and best practices. The final recommendations for antiviral use will be determined after the pandemic begins and will be adjusted in light of the epidemiology of the pandemic, what is known about the effectiveness of treatment and resistance and the antiviral supply available at the time.

6.1 Objectives of Antiviral Program

The objectives of an effective antiviral drug program include to:

- Provide a secure supply of antiviral drugs (neuraminidase inhibitors) for treatment of residents of Newfoundland and Labrador

- Store, allocate, distribute and administer antiviral drugs efficiently and appropriately
- Monitor the safety and effectiveness of the antiviral program and monitor resistance to the antiviral drugs.

6.2 Interpandemic Period

Antiviral drugs are currently used to control seasonal influenza outbreaks in long term care facilities in Newfoundland and Labrador. Individual physicians may also prescribe antiviral drugs as indicated for their patients.

6.3 Pandemic Alert Period

As part of the national pandemic planning process, Canada has secured and cost-shared a stockpile of antiviral drugs for use in the provinces and territories based on populations in each jurisdiction. The stockpile is sufficient to treat persons ill with influenza and requiring treatment during the first wave of the pandemic.

The Department of Health and Community Services maintains the provincial supply of antiviral drugs in proper storage ready for distribution to the Regional Health Authorities when needed. The Regional Health Authorities must begin to plan for secure storage and distribution throughout the regions as well as a system of rapid distribution to patients within the treatment window.

6.4 Pandemic Period

Distribution and Administration – The Department will provide secure storage and transportation to the regions for antiviral drugs held by the province. On receipt of the antiviral drugs, the Regional Health Authorities will provide secure storage and distribution of the antiviral drugs according to the nationally agreed upon protocols and treatment plans.

Surveillance for Antiviral Drug Adverse

Events – Recipients of neuraminidase inhibitors will be monitored for severe and unexpected adverse events, as is the protocol for all new medications. Information will be provided for patients and health care providers outlining what to look for and how to report.

The Provincial Public Health Laboratory will ensure ongoing monitoring of viral isolates for antiviral resistance as part of a national surveillance plan. Additional studies should be conducted if there is evidence of ineffectiveness of antiviral drugs, eg., failure to control an outbreak in a nursing home.

6.5 Post-Pandemic Period

Research and epidemiologic analysis will be completed in this phase. To facilitate analysis it is important for RHA's to gather required information on clinical presentation, effectiveness, antiviral drug uptake and antiviral drug resistance. Protocols will be provided. Information is shared with national teams for further analysis. Resulting recommendations should be shared with all relevant stakeholders.

Table 6.1: Antiviral Roles and Responsibilities by Pandemic Phase

Antiviral Drugs Interpandemic Period		
Phase 1 - No new influenza subtypes have been detected in humans. A new influenza virus subtype may be present in animals, but the risk for human infection is low		
Phase 2 – New influenza subtype in animals posing a substantial risk of human disease		
National	Provincial	Regional
<ul style="list-style-type: none"> • Provide updates on ongoing risk assessment for pandemic influenza potential. 	<ul style="list-style-type: none"> • Provide updates on ongoing risk assessment for pandemic influenza potential. 	<ul style="list-style-type: none"> • Provide updates on ongoing risk assessment for pandemic influenza potential.

Table 6.1 – Continued.

Antiviral Drugs Pandemic Alert Period Phase 3 – New influenza subtype identified in at least one human case. No human transmission or rare cases of spread through very close contact only		
National	Provincial	Regional
<ul style="list-style-type: none"> • Develop or modify plans to acquire, store and distribute antiviral drugs • Confirm security of supply of antiviral drugs • Review recommended priority groups and plans for antiviral drug use based on available epidemiological data 	<ul style="list-style-type: none"> • Ensure that RHAs have identified antiviral requirements • Develop or modify plans to acquire, store and distribute antiviral drugs • Acquire recommended antiviral stockpile • Ensure that RHAs have identified their needs for storage and distribution of antiviral drugs • Work collaboratively with RHA on developing strategies for rapid treatment • Confirm security of supply of antiviral drugs 	<ul style="list-style-type: none"> • Identify antiviral requirements • Develop or modify plans for adequate supply, storage and distribution of antiviral drugs • Identify human resources, training and supplies for administering antiviral drugs • Develop strategies for rapid treatment

Antiviral Drugs Pandemic Alert Period Phase 4 – Localized small clusters of limited human-to-human transmission		
National	Provincial	Regional
<ul style="list-style-type: none"> • Continue activities of previous phase(s) • Assess antiviral inventory relative to perceived need • Confirm distribution points, shipping requirements and security for antiviral drugs • Provide training materials for use and monitoring of antiviral drugs 	<ul style="list-style-type: none"> • Continue activities of previous phase(s) • Assess antiviral inventory relative to perceived need • Confirm distribution points, shipping requirements and security for antiviral drugs • Review and update educational materials on administering antiviral drugs • Provide training materials for use and monitoring of antiviral drugs 	<ul style="list-style-type: none"> • Continue activities of previous phase(s) • Assess antiviral requirements relative to perceived need • Confirm distribution points, shipping requirements and security for antiviral drugs, including isolated communities • Review regional treatment plan • Provide training materials for use and monitoring of antiviral drugs • Provide additional training/education as required

Table 6.1 – Continued.

Antiviral Drugs Pandemic Alert Period Phase 5– Localized larger clusters of human-to-human transmission		
National	Provincial	Regional
<ul style="list-style-type: none"> • Continue activities of previous phase(s) 	<ul style="list-style-type: none"> • Continue activities of previous phase(s) • Distribute antiviral drugs as required for early containment 	<ul style="list-style-type: none"> • Continue activities of previous phase(s) • Distribute antiviral drugs as required for early containment • Ensure staff are trained and infrastructure is in place • Track recipients of antiviral drugs and report adverse events and drug resistance

Antiviral Drugs Pandemic Period Phase 6 – Increased and sustained transmission in general population		
National	Provincial	Regional
<ul style="list-style-type: none"> • Continue activities of previous phase(s) • Monitor antiviral drugs supply, demand, distribution, uptake adverse events and resistance 	<ul style="list-style-type: none"> • Continue activities of previous phase(s) • Distribute antiviral drugs • Coordinate and compile data on use in RHAs • Monitor antiviral drug supply, demand, distribution, uptake adverse events and drug resistance 	<ul style="list-style-type: none"> • Continue activities of previous phase(s) • Distribute antiviral drugs • Coordinate and compile data on use • Manage antiviral drug supply and demand • Monitor distribution, uptake adverse events and drug resistance

Table 6.1 – Continued.

Antiviral Drugs Post-Pandemic Period Recovery		
National	Provincial	Regional
<ul style="list-style-type: none"> • Review activities; compile and analyze data and report • Evaluate response • Debrief with relevant partners • Revise pandemic plans based on review, evaluation and analysis • Return to Phase 1 	<ul style="list-style-type: none"> • Review activities; compile and analyze data and report • Evaluate response • Debrief with relevant partners • Revise pandemic plans based on review, evaluation and analysis • Return to Phase 1 	<ul style="list-style-type: none"> • Review activities; compile and analyze data and report • Evaluate response • Debrief with relevant partners • Revise pandemic plans based on review, evaluation and analysis • Return to Phase 1