

# 2018-2019 Guide to Influenza-Like Illness and Influenza Outbreak Control for Long-Term Care Facilities



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2018-2019 Guide To Influenza-Like  
Illness And Influenza Outbreak Control  
For Long-Term Care Facilities:  
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## 1. Introduction

Influenza is a significant cause of death and hospitalization in Nova Scotia, especially for residents of closed facilities such as long-term care facilities (LTCF), which includes nursing homes and residential care facilities (RCF)\*. These residents are at increased risk for influenza and influenza-related complications because of age, compromised health status, and institutional living environment.

Influenza immunization is safe and effective and is the single most important way to prevent influenza and influenza-related complications and deaths. Every effort should be made to ensure compliance with influenza immunization recommendations each season. However, because influenza outbreaks can still occur among highly vaccinated long-term care residents, LTCF staff should be prepared to monitor staff and residents each year for influenza and promptly initiate measures to control the spread of influenza within facilities when outbreaks are detected.

These guidelines reflect the current standards of practice in influenza control for LTCF. They have been developed based on the current literature, and local, provincial, and national expertise.

\* For the purposes of this document, references to RCFs include Department of Health and Wellness (DHW) and Department of Community Services (DCS) licensed RCFs as well as DCS Adult Residential Centres (ARC) and Regional Rehabilitation Centres (RRC).

## 2. Strategies for the Prevention and Control of Influenza in LTCF

The key strategies for the prevention and control of influenza in LTCF are:

- Planning, Education, and Communication
- Annual Immunization of Residents and Staff
- Surveillance for Influenza and Influenza-Like-Illness (ILI)
- Outbreak Control Measures
- Outbreak Management of ILI in LTCF

*Tip: To make best use of this guide, public health and LTCF staff involved with outbreak management for a specific facility should meet prior to influenza season to review the information together.*

## 3. Planning, Education, and Communication

Planning for the prevention and control of influenza should occur year-round, not just during the influenza season (see [Appendix A](#): Recommended Influenza Program Planning Annual Cycle). All staff, including senior leaders and physicians, should be involved in the planning process. The facility plan for influenza control should be well documented and communicated to all staff and volunteers.

Other recommendations that facilities should consider when planning for influenza season are (this is not an exhaustive list):

- Review and revise facility outbreak guidelines and communicate these guidelines to staff.
- Develop and implement educational in-services for staff regarding infection prevention and control measures for influenza outbreaks (e.g., droplet/contact precautions, proper hand hygiene techniques, case definitions, etc.).
- Develop standing orders for antiviral treatment and/or prophylaxis in the event of an outbreak.
- Obtain resident’s consent for influenza, tetanus/pertussis and pneumococcal immunization on admission to facility.
- Ensure facility health care providers have the appropriate knowledge and skills to administer influenza vaccine and develop standing order policies allowing health care providers to administer the vaccine to residents.
- Make influenza immunization clinics accessible in time and place to all staff.
- Develop a process that helps track who (residents and staff) has been immunized and who has not.
- Ensure vaccine providers have all the information they need to appropriately handle questions and concerns.
- Provide feedback to staff on resident and staff immunization coverage rates.

**Tip:** *It is recommended that the facility has an accessible plan for when/if influenza or influenza-like-illness (ILI) occurs on the week-end or after hours.*

Checklist: Are You Ready For Flu Season?	
<input type="checkbox"/> Nasopharyngeal swabs (check expiry dates)	<input type="checkbox"/> Resident’s recent serum creatinine if needed*
<input type="checkbox"/> Lab requisitions	<input type="checkbox"/> Standing orders for antiviral treatment/prophylaxis
<input type="checkbox"/> Copy of this guide/ influenza plan on nursing units and checklist posted on units ( <a href="#">Appendix D</a> )	<input type="checkbox"/> Vaccine Program planning completed (staff and residents)

\*Note: A recent serum creatinine **is not** required before starting Oseltamivir prophylaxis, unless there is a reason to suspect significant renal impairment. Recent means within 12 months for residents who are medically stable, or since any significant change in medical status.

#### 4. Annual Immunization of Residents and Staff

Immunization is the primary measure to prevent influenza, limit transmission and prevent complications; especially for those at high risk of serious illness or death. Among elderly residents in LTCF, influenza vaccine decreases the incidence of pneumonia, hospital admission and death.

Residents 65 of age or older are at an increased risk of influenza and influenza related complications due to age, compromised health status and institutional living environment. **Therefore, high-dose trivalent influenza vaccine will be offered to long-term care residents 65 years of age and older. The standard-dose quadrivalent influenza vaccine will be offered for all other LTCF residents and staff.**

With respect to health care workers (HCW), studies have shown that transmission of influenza from an infected HCW to their vulnerable patients can result in significant morbidity and mortality. The National Advisory Committee on Immunization (NACI) states that, “Randomized controlled trials conducted in geriatric long-term care settings have demonstrated that vaccination of HCWs is associated with substantial decreases in morbidity and mortality in the residents. Therefore, HCWs should consider it their responsibility to provide the highest standard of care, which includes annual influenza vaccination.

**Tip:** For information on the seasonal influenza vaccine, refer to the 2018-19 Q & A: Influenza Vaccine Information

In the absence of contraindications, refusal of HCWs to be immunized against influenza implies failure in their duty of care to patients”.

Being immunized will also protect HCW’s and their families from becoming ill and developing influenza complications. Therefore, it is recommended that:

- All staff, volunteers and residents in LTCF are immunized for influenza, unless medically contraindicated.
- If it is more practical to hold immunization clinics for staff and residents simultaneously, late October or early November would be the best time to immunize.

**IMPORTANT:** *Data on individuals (staff, volunteers and residents) vaccinated within the facility must be reported to Public Health (PH) in the Nova Scotia Health Authority (NSHA) using the Seasonal Influenza Vaccine Data Collection forms found here:*

[http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/Surveillance\\_Forms.pdf](http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/Surveillance_Forms.pdf)

The influenza vaccine is usually available from PH in the NSHA in mid-late October (this is dependent upon national vaccine production, licensing and distribution procedures). Since the cold chain of the vaccine must be respected at all times, no vaccine will be released from PH unless it is immediately placed in an appropriate cooler with ice packs for transportation. A

min-max thermometer should be placed in the cooler during transport to ensure the vaccine is maintained between 2° C to 8° C. LTCF will need to follow ordering processes as outlined by the Nova Scotia Provincial Public Health Biological Depot.

## 5. Identification of Influenza-Like-Illness (ILI)

### 5.1 Case Definition

#### Influenza-Like-Illness (ILI) Case Definition

Acute onset\* of respiratory illness with fever **and** cough and with one or more of the following:

- sore throat
- arthralgia
- myalgia
- prostration which is likely due to influenza

In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

\*distinct change from normal status to respiratory illness over 1-3 days, based on clinical judgement

Results from studies of older patients highlight the challenge of identifying influenza illness in the absence of laboratory confirmation and indicate that the diagnosis of influenza should be considered in patients with respiratory symptoms or fever during influenza season. This holds true especially at the beginning of influenza season as each season the symptoms of influenza sometimes present in a slightly different manner, depending on several factors. As the season unfolds, the predominant symptoms usually become more familiar to the staff monitoring the facility.

### 5.2 Suspect ILI Outbreak

An influenza outbreak should be suspected when there is a cluster of acute respiratory illness (i.e., two or more residents who develop acute respiratory illness within 72 hours of each other) during the influenza season, (typically October to April). Staff may also experience symptoms of ILI.

Surveillance for respiratory illness in facilities should be conducted year-round, and should be enhanced during the typical influenza season (October to April each year). Each facility should have a documented outbreak protocol for identification of ILI in place at the start of the influenza season.

**Tip:** “Acute onset” usually means a distinct change from normal status to respiratory illness over 1-3 days, based on clinical judgement.

## 6. Outbreak Control Measures

Use the measures outlined below as soon as resident(s) exhibit ILI symptoms and/or the facility is experiencing an influenza outbreak. Implement additional precautions upon symptom onset and continue using them until symptoms have resolved. Do not wait for lab results to begin additional precautions.

All HCWs should use **Routine Practices** with a [Point of Care Risk Assessment \(PCRA\)](#). All HCWs have a responsibility to always assess the infectious risk posed to themselves and to other residents, visitors, and HCWs. The key to implementing routine practices is for HCWs to assess the risk of transmission of microorganisms by using a PCRA before every resident interaction. A PCRA approach is used to determine which interventions or control measures should be used based on a likelihood of exposure to ILI/influenza. In LTCF, examples of these interventions or controls include; the use of personal protective equipment (PPE), a change in accommodation, use of dedicated equipment, increased cleaning and/or when to apply additional precautions (droplet and contact). In addition to routine practices, residents with suspected or confirmed seasonal influenza in LTC settings should be placed on droplet and contact precautions.

### Hand Hygiene:

- Staff should wash their hands with liquid soap and water or clean their hands using 70-90 % alcohol-based hand rub (ABHR), before and after all resident contact; after handling contaminated surfaces and equipment; after removing PPE; and at any other moment in which hands may become contaminated.
- Residents with ILI should be taught proper hand hygiene and provided with opportunities to practice hand hygiene. ABHR should be made available to residents who are unable to get to a sink after toileting, before eating, etc. Staff should assist residents with hand hygiene if they are not able to clean their hands independently.

### Personal Protective Equipment (PPE):

- Gloves should be used for:
  - direct care of the resident,
  - contact with environmental surfaces that are frequently touched by the resident,
  - handling soiled linen or contaminated objects or equipment
- A long-sleeved gown should be worn if it is anticipated that clothing or forearms will be in direct contact with the resident or with environmental surfaces or objects in the resident care environment.
- A surgical/procedure mask should be used when within two metres (six feet) of a resident with ILI. Masks should be removed by the straps/loops, being careful not to touch the mask. Hand hygiene should be performed before removing the mask.

- Whenever a surgical/procedure mask is required, staff should also wear eye or face protection (face shield or protective glasses). Face shields are single-use. If eye protection is reusable, it must be cleaned and disinfected between uses.
- During collection of an NP swab, a surgical/procedure mask and eye protection are required for respiratory protection.
- To decrease contamination and the need for respirators during nebulizing treatments, and if bronchodilators are required, metered dose inhalers (MDI) with full face mask aerochambers are preferable and this should be specified when ordering.
- It is imperative to remove PPE properly to avoid contaminating one's own clothing, skin or mucous membranes with potentially infectious materials.

**Respiratory Hygiene** (also known as Respiratory Cough Etiquette):

- Residents with ILI should be taught proper respiratory hygiene practices, e.g. turn away from others, cough into sleeve, disposal of tissues, wash hands, etc.
- Residents with ILI who are unable to cover their cough should wear a surgical/procedure mask (if tolerated).
- N95 respirators should not be used on residents.

**Accommodation and Cohorting of Staff and Residents:**

- Asymptomatic residents should be kept away from affected rooms, units/floors. If this is not possible, try to maintain a two-meter distance between residents with ILI and others. Use of partitions, like curtains, may help.
- Limit movement of staff between ill and well residents as much as possible.
- Residents with ILI should stay in their rooms while they are symptomatic and limit contact with others until they are feeling well and are able to fully participate in their usual day-to-day activities.
  - If this is not possible, ill residents should be cohorted together on one unit/floor, if feasible.
- In LTCFs, a PCRA should be performed to determine resident placement. Given that cohorting residents may not be practical in LTCFs, assigning staff members to care only for residents affected with the same signs and symptoms should be considered (cohort staffing).
- A sign should be visible on the resident's door or in the resident's bed space that indicates the resident requires droplet and contact precautions. The sign should not disclose the resident's confirmed or suspect diagnosis.

### **Visitors (including family members):**

- If the facility is experiencing an outbreak of ILI, signage should be posted at all entrances and exits throughout the facility to advise visitors, which include family members, that an outbreak has been declared in the unit/facility. Signage must include instruction for visitors to clean their hands when entering and exiting the facility, a reminder that ill visitors should not visit, and that visitor restrictions are in effect e.g. non-essential visits should be postponed where possible etc. LTCFs should try to communicate with families that there is an outbreak and what to expect when they arrive to visit.
- The facility should place ABHR near the entrance.
- Visitors who are ill should not visit until they are feeling well (symptom-free).
- If a visitor displaying signs and symptoms of ILI is permitted to visit for compassionate reasons, they should be asked to perform hand hygiene on entering/exiting the facility and wear a surgical/procedure mask at all times when in the facility. Ill visitors should not participate in activities.
- All visitors to ill residents should wear surgical/procedure masks when assisting with resident care, and perform hand hygiene on entering and leaving the room.
- Visitors should visit only one resident. If the visitor must visit more than one resident, the visitor should visit the resident on precautions last.

### **Social Activities:**

- Restrict outings and limit gatherings and group activities (e.g. Bingo). Only well individuals can participate in these activities.
- Visits from community groups (e.g. school and/or church groups) should be put on hold until the outbreak is declared over. This should be determined on a case by case basis.
- Any restrictions need to be balanced with the importance of such activities to the well-being of the residents.

### **Admissions and Transfers:**

- **In general, there should be no new admissions, transfers or outside medical appointments during an outbreak.**
- If an admission does occur or if a transfer into the facility is required, the new resident needs to be fully informed of the current situation, and be prepared to take antiviral prophylaxis if recommended.
- If transfer to the hospital or another facility is necessary, notify the hospital/other facility and Emergency Health Services (EHS) of the outbreak situation. If the resident requiring transfer is symptomatic, EHS should be notified prior to pick-up that the resident will require droplet/contact precautions.

- The return of a resident hospitalized with illnesses other than those associated with the outbreak should be discussed on a case-by-case basis with the medical director.
- Transfers between facilities, medical appointments and any elective surgery of ill residents should be discussed with the resident’s physician, person responsible for infection prevention and control, and the medical director.
- Residents with ILI who require urgent medical attention and transfer to an acute care facility should wear a surgical mask, if tolerated. Medical care should not be deferred in such cases simply due to ILI.
- If there are any bed, wing, or facility closures or resumption of service, facilities are to notify:
  - the Placement Office in their area and
  - the Investigation and Compliance (Licensing) office, Continuing Care, DHW by email to the following address [\\_MonandEval@novascotia.ca](mailto:MonandEval@novascotia.ca)

#### **Staff and Volunteers:**

- An annual in-service should be provided for all staff and volunteers on influenza infection prevention and control measures.
- Exclude HCWs symptomatic or infected with influenza from work until 7 days after the onset of symptoms, with the first day of symptoms counted as day 1. If they have been immunized two weeks previously and have started on antiviral therapy, a fitness-for-work assessment should first be conducted through the Occupational Health (OH) department. In the absence of a facility OH designate or department, HCWs should seek guidance from their primary care provider to determine fitness-for-work.
- Staff and volunteers, who have been in contact with someone who has influenza, even if it is in their own home, can work. If they start to develop symptoms, then they should follow the return to work policy of their employer (consider work exclusion above).
- If staff and volunteers work at more than one facility, they should notify the other facility of the outbreak.

#### **Environmental Management:**

- Enhanced environmental cleaning and disinfection regimens are important. This includes frequent (twice daily) cleaning and disinfection of high-touch surfaces.
- Hospital-grade disinfectants with a drug identification number (DIN) are effective in killing influenza viruses if used according to the manufacturers’ instructions.
- Laundry and waste disposal protocols are as per facility routine practices.

#### **Resident Care Equipment**

Any equipment that is shared between residents must be cleaned and disinfected, as per facility routine practices, before use on another resident.

## Immunization

In certain circumstances, the MOH may recommend that unvaccinated residents and staff be vaccinated during an outbreak.

## Discontinuation of Precautions for Individual Residents with ILI

Precautions should remain in place for residents until there is no longer a risk of transmission of the illness. With suspected or confirmed influenza, this includes droplet and contact precautions for 7 days after illness onset or until 24 hours after the resolution of fever and respiratory symptoms, whichever is longer. Note: Regardless of whether influenza/ILI is suspected or confirmed, residents who have signs and symptoms of any respiratory illness must be managed with the appropriate additional precautions (droplet and contact).

During outbreak situations, removal of precautions on individual residents should be part of the ongoing management and discussion with public health.

## 7. Outbreak Management of ILI in LTCF

This section has the following components:

- Actions to take when an outbreak is suspected
- Important Laboratory Information
- Antiviral Prophylaxis and Treatment
- Declaring the Outbreak Over

### 7.1 Actions to take when an outbreak is suspected:

- i. Confirm that the symptoms meet the case definition for ILI:

Acute onset\* of respiratory illness with fever **and** cough and with one or more of the following:

- sore throat
- arthralgia
- myalgia
- prostration which is likely due to influenza

In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

\*distinct change from normal status to respiratory illness over 1-3 days, based on clinical judgement

- ii. Determine the number of residents and staff meeting the ILI case definition (see above for case definition), and determine if those affected are confined to one unit/floor. Initiate a line listing (see [Appendix B](#): Respiratory Disease Line Listings, Residents/ Staff).

### **AND**

LTCF are **required** to report outbreaks or suspected outbreaks of influenza and/or ILI to local PH immediately. Notify local PH to obtain an outbreak number to be included on lab

requisitions and specimens. If for any reason it is not possible to obtain an outbreak number, please clearly indicate “ILI Outbreak” on the lab requisition. After hours and on weekends, please notify the MOH on call (through Central Zone Locating - 902-473-2222).

iii. Collect viral nasopharyngeal (NP) swabs from the initial cases as soon as ILI is suspected. Please refer to section 7.2 for detailed instruction for how to collect a [Nasopharyngeal Specimen for Influenza](#).

Once an outbreak is suspected, outbreak control measures need to be implemented as soon as possible (refer to [Outbreak Control Measures](#)).

**IMPORTANT:** Confirmation of an outbreak will be determined following discussions between PH and the facility.

iv. Update the line listing daily and send to PH. There should be regular communication between the facility and PH to monitor the progress of the outbreak.

### Tips for Filling Out Line List

- *Add new cases to line list daily but do not remove any of the earlier cases.*
- *There should be one line list per outbreak. Include the room number and section where the resident resides. This means that each unit shouldn't have their own line list. For larger facilities, where this may not be practical, discuss with a public health nurse (PHN).*
- *It might help to send the PHN a copy of floor plans of the facility, if available, when trying to determine how/if an outbreak is spreading.*
- *For readability purposes, it is helpful to print/fax the line list on legal size paper, if possible.*

v. The need for antiviral treatment and prophylaxis will be determined by the facility medical director in consultation with the MOH.

Please refer to [Antiviral Prophylaxis and Treatment](#) and [Appendix E: Antiviral Medication use during Influenza Outbreaks in Long-Term Care Facilities](#).

vi. In consultation with PH, the outbreak will be declared over. This is usually seven days after symptom onset of the last case. The first day of symptoms is counted as Day 1.

vii. Please refer to [Appendix C: Influenza-Like-Illness in LTCF Algorithm](#) and [Appendix D: Check List for Suspect ILI in LTCF](#)

## 7.2 Important Laboratory Information

Diagnosis of respiratory viruses depends on the collection of high-quality specimens, their rapid transport to the lab and appropriate storage. See sections below for specific laboratory requirements.

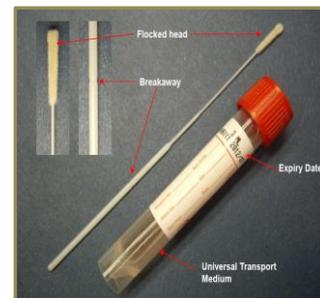
### Viral Collection Kits

- Viral collection kits are available at local/regional hospital labs.
- The viral collection kits contain two swabs. In addition to the regular swab that was used in the past, the kit contains a smaller caliber, more flexible swab with a flocked head that should make collecting a nasopharyngeal sample easier.

### Testing Information

- **Nasopharyngeal swabs should be obtained as soon as an influenza outbreak is suspected.** Specimens should be collected within 5 days of onset of symptoms, preferably within 48 hours. Sampling beyond 5 days may be considered in residents with persisting or worsening symptoms regardless of age, in the elderly or immunocompromised.
- **Collect nasopharyngeal swabs from 3 different ill residents.** It is not necessary to test more than three residents for each outbreak.
- **Once influenza has been confirmed in an institution, further testing during this outbreak is not necessary.** If residents develop ILI while on treatment/prophylaxis, repeat testing can be done for identification of resistant viruses. Under the guidance of PH, a repeat NP swab should be submitted for PCR testing. The laboratory should be notified of a potential resistant virus otherwise, repeat specimens from an institution with confirmed influenza will not be processed within a two-week period unless directed by PH. If influenza is identified, the specimen may be submitted for supplemental testing.
- If residents present with new ILI after the outbreak has ended, repeat testing is appropriate.
- Ensure the lab specimen and the requisition indicates the name of the facility involved and the outbreak number from PH. If an outbreak number is not available, clearly indicate “ILI outbreak” on the requisition.

### Viral collection kits



- These kits do not require refrigeration prior to use but must be refrigerated after a sample has been taken.
- Check expiration dates.

- You must notify the local PH office whenever there is a possible outbreak; **do NOT delay notifying PH while awaiting the results of swabs**. Ensure your lab requisition indicates the **“Name of Facility”, “ILI Outbreak” and “Public Health Outbreak Number”** if provided by PH. Ensure the swab has not expired, as specimens received in expired containers will not be processed.
- Influenza testing services are available at the QEII Health Sciences Centre (QEII) and Cape Breton Regional Hospital Microbiology laboratories. Testing frequency (weekday / weekend) is assessed on an ongoing basis. Please note that turn-around time may be further impacted by transportation from local / regional labs to the QEII microbiology testing facility.

### **Specimen Collection and Handling**

- ***Specimen Collection:***

**Appropriate** specimen types common in LTCFs:

- Nasopharyngeal swab and aspirate. Directions for the collection of Nasopharyngeal Swabs are found below. Additionally, an instructional video is available at: <http://www.youtube.com/watch?v=TFwSefezlHU>.
- Other appropriate specimens may be collected in acute care settings e.g. bronchial wash, endotracheal aspirate, tissue.

**Non-appropriate specimen types** (will be rejected by the lab):

- Nose
- Throat and throat washings

#### **Key Lab Points:**

- Specimen collection kits
  - **Order from lab**
  - **Check expiry dates**
- Refer to NP collection instructions
- Requisition details for influenza:
  - Indicate ‘Nasopharyngeal’ as specimen type
  - Include resident name
  - Include health card number
  - Include name of LTCF
  - Label “ILI Outbreak” on requisition
  - Include Outbreak Number
- Sample Labelling:
  - Include resident name
  - Include health card number
  - Include Outbreak Number
- Transport to lab promptly

## INSTRUCTIONS FOR THE COLLECTION OF A NASOPHARYNGEAL SWAB FOR RESPIRATORY VIRUSES

Container		Store Before Collection	Store After Collection	Deliver to Lab
Nasopharyngeal Swab Collection kit		Room Temperature	Refrigerate	*72 hours

HOW TO COLLECT THE SAMPLE or view online <http://www.youtube.com/watch?v=TFwSefezIHU>

1. Use the swab supplied with the viral transport media.
2. Explain the procedure to the patient.
3. When collecting the specimens, wear eye protection, gloves, and a mask. Change gloves and wash your hands between each patient.
4. If the patient has a lot of mucus in the nose, this can interfere with the collection of cells. Either ask the patient to use a tissue to gently clean out visible nasal mucus or clean the nostril yourself with a cotton swab (e.g. Q-Tip).
5. How to estimate the distance to the nasopharynx: prior to insertion, measure the distance from the corner of the nose to the front of the ear and insert the shaft approximately 2/3 of this length.
6. Seat the patient comfortably. Tilt the patient's head back slightly to straighten the passage from the front of the nose to the nasopharynx to make insertion of the swab easier.
7. Insert the swab provided along the medial part of the septum, along the floor of the nose, until it reaches the posterior nares; gentle rotation of the swab may be helpful. (If resistance is encountered, try the other nostril; the patient may have a deviated septum.)
8. Allow the swab to sit in place for 5-10 seconds.
9. Rotate the swab several times to dislodge the columnar epithelial cells. *Note: Insertion of the swab usually induces a cough.*
10. Withdraw the swab and place it in the collection tube.
11. Refrigerate immediately.
12. Remove gloves.
13. Wash hands.
14. Attach completed requisition.
15. Transport to the laboratory.

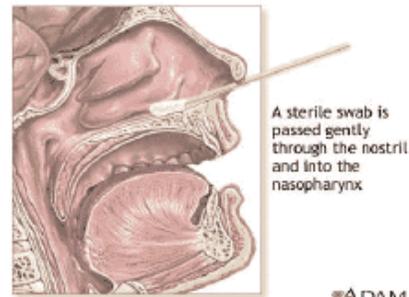


Image obtained from <http://www.nlm.nih.gov/medlineplus/ency/imagepages/9687.htm>

### MAKE SURE THE SPECIMEN LABEL INCLUDES

- Patient's legal name
- Patient's Health Card Number or another unique identifier (as determined by healthcare provider)
- Date and time of collection

### MAKE SURE THE REQUISITION FORM INCLUDES

- Patient's legal name
- Patient's Health Card Number or another unique identifier (as determined by healthcare provider)
- Date and time of collection
- Patient's date of birth
- Physicians full name and address

**Note:** If the specimen and requisition are not labelled correctly, the specimen will not be processed.

### DELIVER THE SPECIMEN

- Deliver sample(s) to the local district laboratory.
- Testing performed at QEII Health Sciences, Cape Breton Regional Hospital and IWK Health Centre: \*Patient specimens should be kept at 4°C and received at the testing laboratory within 72 hours. If swabs are to be delayed in transit longer than this, they should be frozen at ≥-70°C.

NP swab procedure based on PHAC description in Annex C of the Canadian Pandemic Influenza Plan for the Health Sector (English): <http://www.phac-aspc.gc.ca/cpip-pclcpi/ann-c-eng.php>

- **Labeling of Specimens:**
  - Ensure specimen label (and requisition) includes two unique identifiers. One identifier must be the resident's legal name and the other can be the provincial health card number / registered health card equivalent, medical record number, passport number or private insurance policy number.
  - Ensure specimen container has not expired. Specimens in expired containers will not be processed by the lab.
- **Filling in the Requisition – Complete All Parts and Add the Following:**
  - Ensure specimen requisition (and label) also includes the same two unique identifiers.
  - Ensure the collection date & time are indicated.
  - Indicate that the test is for "Influenza".
  - Indicate if the specimen is part of an outbreak. Write "Name of Facility", "ILI Outbreak" and "Public Health Outbreak Number" if provided by PH.
  - Ask results to be copied to the MOH and to the resident's family physician and/or medical director.

- **Shipping Specimens:**

Specimens should be collected and transported to the local/regional hospital laboratory as soon as possible, preferably within 72 hours on cold packs (4°C). If a longer delay is anticipated, specimens should be frozen at -70°C and transported on dry ice by the laboratory. If -70°C/dry ice is not available they should remain at 4°C and shipped as soon as possible.

- **Result Inquiry:**

- Turnaround time for results may be 1-2 business days during the height of the influenza season.
- Result inquiries can be directed to your local/regional lab or:
  - QEII laboratory testing site: central lab reporting 902-473-2266.
  - Cape Breton Regional Hospital laboratory testing site: 902-567-8000 extension 1412412.

### 7.3 Antiviral Prophylaxis and Treatment

For quickness and efficiency, it is recommended that the medical director order antiviral prophylaxis for all eligible residents using standing orders.

- If it is suspected or confirmed that an ILI outbreak is caused by influenza, antiviral medication for prophylaxis and treatment should be considered and started as soon as possible.
- The MOH will make a recommendation to the medical director regarding the need for antiviral medication and which antiviral drug to use in outbreak situations.

Also see [Appendix F](#): Antiviral Medication use During Influenza Outbreaks in Long-Term Care Facilities.

- When the decision to use antiviral medication for outbreak control has been made, local PH will notify the provincial Pharmacare Program staff to ensure Pharmacare payment for antiviral medication claims for Pharmacare beneficiaries. This will be done by faxing a copy of the letter located in [Appendix E](#) to Pharmacare (902-496-4440). A PHN may sign this letter on behalf of the MOH. This may wait for the next business day.
- Veterans Affairs Canada will provide financial coverage for antiviral medications for veterans residing in a LTCF when prophylaxis or treatment are recommended by PH due to an outbreak of influenza-like-illness or confirmed influenza.
- In situations where the antiviral may need to be changed (based on subtyping or difficulty controlling the outbreak), the MOH will make recommendations based on current information.
- During an outbreak, the actual ordering of antiviral medications is the responsibility of the facility.
- There should be regular communication between the facility and PH to monitor the progress of the outbreak and to determine when it is over. Updated resident and staff line listings also need to be faxed or emailed to local PH on a regular basis. This assists PH in monitoring the outbreak.

**Tip:** *The rationale for prophylaxis is to prevent influenza among exposed residents before symptoms develop. Antiviral prophylaxis should be given to residents whether vaccinated previously or not. In outbreak control, antiviral prophylaxis should be continued until the outbreak is over. If residents develop influenza-like symptoms while on prophylaxis they should be switched to the antiviral treatment regime.*

**Tip:** *If there is just one resident suspected of having influenza and the physician has decided to treat this individual, the MOH or local PH doesn't need to become involved.*

**IMPORTANT:** Antiviral medication may be considered for treatment in residents who have influenza symptoms for less than 48 hours. Antiviral medication is less likely to benefit residents who have been ill for more than 48 hours. Antiviral treatment is continued for a maximum of 5 days.

#### **7.4 Declaring the Outbreak Over**

The outbreak of influenza or ILI will usually be declared over seven days after symptom onset of the last case in a resident. The first day of symptoms is counted as Day 1. This seven-day timeframe is derived by allowing one complete incubation period (3 days) following the period of communicability (3 to 5 days) of the last case in the facility. See [Appendix E: Letter Confirming the Outbreak is over](#), for a generic letter to use when declaring an influenza outbreak over.

## Appendix A: Recommended Influenza Program Annual Cycle

	April – May (Post-Influenza Season)	June – September (Pre-Influenza Season)	October – March (Influenza Season)
<b>Planning, Education and Communication</b>	<ul style="list-style-type: none"> <li>involve staff and senior leaders in debriefing</li> <li>evaluate educational materials used</li> </ul>	<ul style="list-style-type: none"> <li>engage all stakeholders</li> <li>develop comprehensive communication and education strategy</li> <li>develop a chart for resident serum creatinine levels if needed</li> </ul>	<ul style="list-style-type: none"> <li>initiate communication and education strategy</li> <li>regular updates within facility</li> </ul>
<b>Immunization</b>	<ul style="list-style-type: none"> <li>evaluate coverage rates by target groups [i.e., residents and staff/volunteers (physicians, nurses and other staff)]</li> </ul>	<ul style="list-style-type: none"> <li>plan for targets of 100% in staff, volunteers and residents</li> <li>modify immunization recording process as required</li> <li>plan immunization clinics</li> </ul>	<ul style="list-style-type: none"> <li>hold immunization clinics</li> <li>obtain new vaccine</li> <li>track inventory</li> <li>document and post coverage rates</li> </ul>
<b>Surveillance</b>	<ul style="list-style-type: none"> <li>evaluate surveillance system</li> </ul>	<ul style="list-style-type: none"> <li>revise surveillance system as required</li> </ul>	<ul style="list-style-type: none"> <li>conduct surveillance (for residents and staff) as part of infection prevention and control program</li> </ul>
<b>Outbreak Management</b>	<ul style="list-style-type: none"> <li>debrief with key staff</li> <li>report on outbreaks, including cost</li> <li>evaluate infection prevention and control measures</li> </ul>	<ul style="list-style-type: none"> <li>review and revise outbreak guidelines as necessary</li> </ul>	<ul style="list-style-type: none"> <li>monitor for and report suspect outbreaks and manage as per guidelines</li> </ul>

## **Appendix B: Respiratory Disease Line Listings (Residents and Staff)**

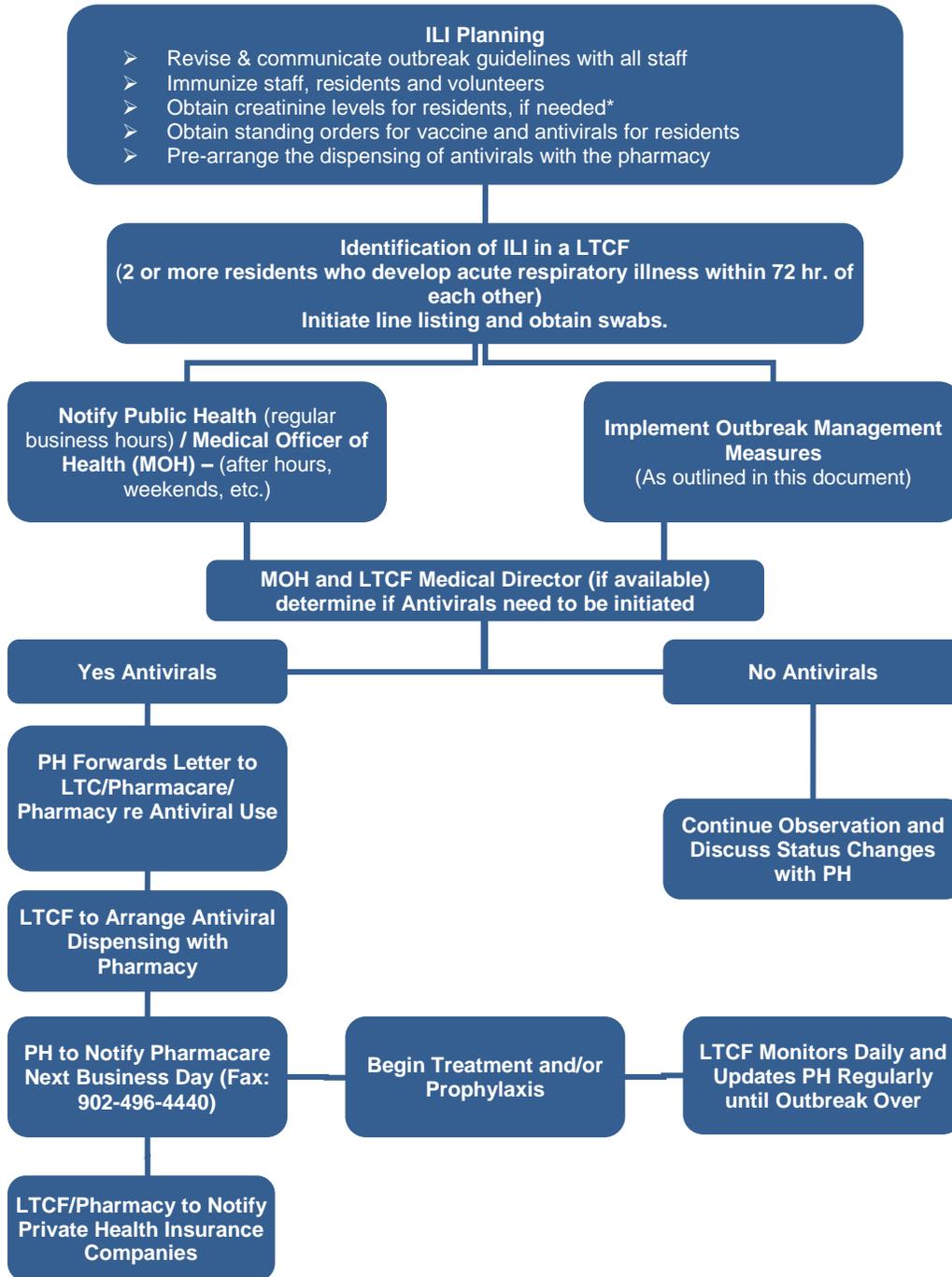
**Resident line list available at following link:**

[http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/Line Listing for LTCF Residents.pdf/](http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/Line_Listing_for_LTCF_Residents.pdf)

**Staff line list available at following link:**

[http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/Line Listing for LTCF Staff.pdf](http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/Line_Listing_for_LTCF_Staff.pdf)

## Appendix C: Influenza-Like-Illness in LTCF Algorithm



**\*Note: A recent serum creatinine is not required before starting Oseltamivir prophylaxis, unless there is a reason to suspect significant renal impairment. Recent means within 12 months for residents who are medically stable, or since any significant change in medical status.**

## Appendix D: Check List for Suspect Influenza-Like-Illness in LTCF

### Case Definition for ILI:

Acute onset\* of respiratory illness with fever **and** cough and with one or more of the following:

- sore throat
- arthralgia
- myalgia
- prostration which is likely due to influenza

\*distinct change from normal status to respiratory illness over 1-3 days, based on clinical judgement.

In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

Check List for Suspect Influenza-Like-Illness in LTCF
<p>If two or more residents develop ILI symptoms (see case definition) within 72 hours of each other report to your local public health office:  <b>(Mon-Fri: 0830-1630)</b> phone the local public health nurse (PHN) or CDC intake line  <b>(After hours)</b>, phone the on-call Medical Officer of Health through Central Zone Locating: 902-473-2222</p>
<input type="checkbox"/> Implement outbreak control measures as soon as possible
<input type="checkbox"/> Send line list to local PH ASAP and then daily: <ul style="list-style-type: none"> <li>• Add only those who meet the case definition</li> <li>• Each day add new cases but do not remove any of the earlier cases</li> </ul>
<input type="checkbox"/> Obtain outbreak number from PH
<p><b>Lab specimens:</b></p> <input type="checkbox"/> Collect viral nasopharyngeal (NP) swabs on initial cases (check expiry dates) - max 3 swabs/outbreak <input type="checkbox"/> Label swab AND requisition with 2 unique identifiers (resident name and health card number) <input type="checkbox"/> Label requisition with the same 2 unique identifiers. <i>Other key points: specimen source, collection date and time, test 'influenza', 'facility name', 'ILI outbreak', and 'public health outbreak number'. For lab reports, indicate the resident's family physician and/or medical director as well as the MOH</i>
<p><b>Antiviral therapy:</b></p> <input type="checkbox"/> Consult PH (the MOH will make a recommendation to the medical director regarding the need for antiviral medication and which antiviral drug to use) If YES: <input type="checkbox"/> Arrange antiviral dispensing with pharmacy <input type="checkbox"/> Notify private health insurance companies If NO: <input type="checkbox"/> Continue observation and discuss status changes with PH
<p>Outbreak declared over</p> <input type="checkbox"/> Consult PH to determine when to declare over

## Appendix E: Letters

Date \_\_\_\_\_

### Letter to LTCF Director of Care/Medical Director

#### **Re: Antiviral Medication for the Control of an Influenza Outbreak at**

Dear Director of Care/Medical Director:

Influenza has now been confirmed as the cause of the outbreak of respiratory illness at your facility. This letter is intended to provide you with information and guidance around the use of antivirals for the prophylaxis or treatment of your residents during the current outbreak.

In Canada, two neuraminidase inhibitors (Oseltamivir and Zanamivir) are licensed for use as treatment and prophylaxis against influenza. Over the past few years, the predominant circulating strains of influenza have been sensitive to Oseltamivir and Zanamivir, but it is important to be aware of the potential for antiviral resistance to occur. The choice of drug depends on the resistance patterns of the type of influenza detected in your facility. The effectiveness of antivirals is determined each season and recommendations may change as new information becomes available.

#### **A. Chemoprophylaxis:**

It is recommended that residents who have not been affected by the current outbreak of influenza-like-illness (ILI) be started on an antiviral medication as soon as possible. (ILI definition: Acute onset of respiratory illness with fever **and** cough and with one or more of the following; sore throat, arthralgia, myalgia, and prostration which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent. Acute onset is defined as a distinct change from normal status to respiratory illness over 1-3 days, based on clinical judgement).

Antiviral prophylaxis should be given to residents whether vaccinated previously or not. In outbreak control, antiviral prophylaxis should be continued until the outbreak is over, usually 1 to 2 weeks (7 days after the onset of symptoms of the last case). If residents develop influenza-like symptoms while on prophylaxis they should be switched to the antiviral treatment regime.

The decision on whether to place individuals who have already had ILI this season on prophylaxis needs to be done on a case-by-case assessment of the risks of influenza (likelihood that the ILI was true influenza plus risk of severe influenza complications) vs. the risks of antivirals.

#### **B. Treatment:**

It is recommended that residents who have been affected by the current outbreak of influenza illness and who are within 48 hours of onset of their illness be started on antiviral medication as soon as possible. Antiviral medication is less likely to benefit residents who have been ill for

more than 48 hours. Antiviral treatment is continued for a maximum of 5 days. Unless contraindicated by specific clinical circumstances, the 5 day antiviral treatment course should be completed even if residents are started on antibiotic treatment.

Guidance around the precautions and dosage requirements related to prescribing antiviral medication for chemoprophylaxis or treatment are outlined in [Appendix F: Antiviral Medication use during Influenza Outbreaks in Long-Term Care Facilities](#) in the Guide to Influenza Control for Long Term Care Facilities, NS Department of Health and Wellness.

**Drug recommended** (check all that apply)  Oseltamivir  Zanamivir

Zanamivir recommended due to:  Lab confirmed influenza strain  Clinical information

**Pharmacy supplier** (name and phone, if available)

If you have any questions or concerns, please call

Sincerely,

Public Health Nurse

**Letter to Pharmacy/ Pharmacare**

Pharmacare fax: 902-496-4440    Pharmacare phone: 902-429-6565 or 1-800-544-6191

Name of Pharmacy: \_\_\_\_\_

Pharmacy Phone: \_\_\_\_\_

Date \_\_\_\_\_

**Re: Antiviral Medication for the Control of an Influenza Outbreak**

Influenza has now been confirmed as the cause of the outbreak of respiratory illness at this facility \_\_\_\_\_.

In Canada, two neuraminidase inhibitors (Oseltamivir and Zanamivir) are licensed for use as treatment and prophylaxis against influenza. Over the past few years, the predominant circulating strains of influenza have been sensitive to oseltamivir and zanamivir, but it is important to be aware of the potential for antiviral resistance to occur. The choice of drug depends on the resistance patterns of the type of influenza detected in your facility. The effectiveness of antivirals is determined each season and recommendations may change as new information becomes available.

This letter is intended to provide you with the recommendations that were given to the LTCF facility around the use of antivirals for the prophylaxis or treatment of their residents during the current outbreak.

**A. Chemoprophylaxis:**

It has been recommended that residents who have not been affected by the current outbreak of influenza-like illness be started on an antiviral medication as soon as possible. For outbreak control, antiviral prophylaxis is to be continued until the outbreak is over, usually 1 to 2 weeks (7 days after the onset of symptoms of the last case). If residents develop influenza-like symptoms while on prophylaxis they will be switched to the antiviral treatment regime.

**B. Treatment:**

It has been recommended that residents who have been affected by the current outbreak of influenza illness and who are within 48 hours of onset of their illness be started on antiviral medication as soon as possible. Antiviral medication is less likely to benefit residents who have been ill for more than 48 hours. Treatment should be continued for a maximum of 5 days.

**Drug recommended**

<input type="checkbox"/> Oseltamivir	<input type="checkbox"/> Zanamivir: Recommended due to:	<input type="checkbox"/> Lab confirmed influenza strain
		<input type="checkbox"/> Clinical information

Sincerely,

Public Health Nurse

**Letter Confirming the Outbreak Is Over**

Date: \_\_\_\_\_

**RE: END OF INFLUENZA OUTBREAK AT \_\_\_\_\_**

Dear Director of Care/Medical Director:

It has now been 7 days since the onset of the last case of influenza-like illness in the residents of your facility. Therefore, the influenza outbreak can be declared over and outbreak control measures, including antiviral prophylaxis, can be discontinued.

Residents who have been placed on antiviral medication for treatment should remain on it for a maximum of 5 days.

Please do not hesitate to call me at if you have any questions.

Sincerely,

Medical Officer of Health

## Appendix F: Antiviral Medication use during Influenza Outbreaks in LTCF

### What Antiviral Medications are available for use against Influenza?

In Canada, two neuraminidase inhibitors (Oseltamivir and Zanamivir) are licensed for use as treatment and prophylaxis against influenza. Over the past few years, the predominant circulating strains of influenza have been sensitive to Oseltamivir and Zanamivir, but it is important to be aware of the potential for antiviral resistance to occur. The choice of drug depends on the resistance patterns of the type of influenza detected in your facility. The effectiveness of antivirals is determined each season and recommendations may change as new information becomes available. PH will help guide the choice of antiviral agent in this situation.

### How are Antiviral Medications used in Long-Term Care Facilities?

Antiviral medications can be used for the control of influenza outbreaks among residents with high-risk conditions of institutions in two ways:

- For the presumptive treatment of residents with influenza-like illness, while awaiting laboratory confirmation;
- For the prevention of influenza among residents (i.e. prophylaxis).

### Who decides when to use Antiviral Medication in the LTC setting?

It is the responsibility of the Medical Officer of Health (MOH), working closely with PH and the Provincial Public Health Laboratory Network (PPHLN), to ensure that a surveillance system for influenza is in place. In this way, the MOH knows the level of influenza activity in the community and can make recommendations about outbreak management and about antiviral medication use in the long-term care setting.

*Please note: If there is just one resident suspected of having influenza and the physician has decided to treat this individual, the MOH doesn't need to become involved.*

Therefore, it is the MOH who recommends the use of antiviral medication when:

- A number of residents have a respiratory illness that meets the case definition for influenza.
- An outbreak investigation has recently been or is currently being carried out.
- Influenza has been identified from viral nasopharyngeal swabs taken from residents, or there is a community-wide outbreak occurring.

The MOH would make a recommendation to the facility. It is then up to the facility to implement the use of antiviral medication in consultation with the medical director.

Antiviral medication use in an outbreak situation should begin as early as possible after the outbreak begins in order to be effective in interrupting the outbreak.

### What can you do to prepare for the possible use of antiviral medication?

Each LTCF should have a contingency plan in place that would allow for the rapid administration of antiviral medication if an influenza outbreak occurs.

- A recent serum creatinine is not required before starting oseltamivir prophylaxis, unless there is a reason to suspect significant renal impairment. For those with significant renal impairment, prior to the influenza season,

document an up-to-date serum creatinine, weight and age. Up-to-date means within 12 months for residents who are medically stable, or since any significant change in medical status; using these data, work with your pharmacist to calculate an Oseltamivir dose for those residents.

- Develop a mechanism to obtain physicians' orders on short notice (consider a pre-approved antiviral order);
- For adverse events and considerations on each antiviral drug, please see Table 2.

### **Which residents do you treat with antiviral medication in the outbreak situation?**

Antiviral medication may be considered for treatment in residents who have influenza symptoms for less than 48 hours. Antiviral medication is less likely to benefit residents who have been ill for more than 48 hours. Antiviral treatment is continued for a maximum of 5 days as a longer duration is unlikely to benefit most individuals.

In consultation with the medical director and MOH, presumptive treatment can be stopped if influenza is not identified as the cause of the ILI (e.g. laboratory test is negative for influenza).

### **Which residents do you put on antiviral prophylaxis in an outbreak situation?**

Residents who do not have influenza-like illness should be put on antiviral prophylaxis regardless of influenza vaccination status. Prophylaxis should be continued until the outbreak is declared over. If influenza is ruled out as the cause of the ILI after prophylaxis has begun, then prophylaxis should be stopped.

If large numbers of residents continue to become ill in spite of antiviral prophylaxis, the outbreak may be caused by another virus or antiviral resistance may have emerged. Consult with PH for further recommendations.

### **Can the same antiviral medication be used for both treatment and prophylaxis?**

Yes

### **Who pays for antiviral medications?**

If residents have private or veterans' drug insurance plans, coverage should be preferentially billed to these plans. The Pharmacare Programs cover antiviral medications for influenza treatment or prophylaxis for LTCF residents who meet the clinical criteria (listed below) and are Pharmacare beneficiaries.

**Note:** Co-payments and/or deductibles may apply depending on what program the resident is enrolled in. For example, Seniors' Pharmacare has a 30% co-payment per prescription up to a co-payment maximum of \$382.00 annually.

Oseltamivir and Zanamivir are Exception Status Benefits under the Nova Scotia Pharmacare Program. LTCF residents who are covered by one of the Pharmacare Programs (Family, Seniors, <65 LTC, or Community Services) and meet the exception status criteria will have access to Oseltamivir and Zanamivir. Please note that the decision to use Zanamivir during outbreak situations will occur on a case-by-case basis.

The Pharmacare Exception Status Benefit criteria are:

- For treatment of long-term care residents with lab-confirmed influenza;
- For clinically suspected cases, it is covered for the treatment of residents with influenza-like illness where there is lab confirmed influenza circulating in the facility or community;

- For use as a prophylaxis of residents when the facility has an influenza outbreak.

**Note:** Oseltamivir and Zanamivir are covered by the Pharmacare programs in LTCF based on the recommendation of a MOH. Veterans Affairs Canada will provide financial coverage for antiviral medications for veterans residing in a long-term care facility when prophylaxis or treatment are recommended by PH due to an outbreak of flu-like illness or confirmed influenza.

When the decision to initiate the use of antivirals is made, in consultation with the MOH, a letter will be sent to the facility on behalf of local PH. This letter entitled to LTCF Director of Care/Medical Director Re: Antiviral Medication for the Control of an Influenza Outbreak can be found in [Appendix E](#). PH will also fax a letter (found in [Appendix E](#)) to Pharmacy/Pharmacare at 902-496-4440. This should be done as soon as possible, or the next business day if after hours, since Pharmacare will need to provide billing information to the pharmacy. In the event of an outbreak, the facility will need to work closely with the pharmacy in order to advise them of the MOH recommendation to initiate therapy.

### **How does a LTC Facility go about getting a supply of antivirals?**

A prescription for antiviral medication written by the resident's doctor is filled in the same way as any other prescription. There are supplies of antiviral medications, including oseltamivir, in community pharmacies; however, that supply is limited. To ensure there is a supply within the community for confirmed cases with moderate to severe illness, physicians are encouraged NOT to prescribe antiviral medications unless it is within the recommended guidelines.

## Recommended Doses of Antiviral Drugs:

**Table 1: Recommended adult doses of Oseltamivir and Zanamivir for the prophylaxis and treatment of influenza**

<b>Oseltamivir<sup>1</sup> (Tamiflu)</b>		
<i>No Renal Impairment</i>		
<b>Dosage</b>		
<b>Prophylaxis<sup>2,3</sup></b>	<b>Treatment</b>	
75mg once a day	75 mg twice a day for 5 days	
<i>Renal Impairment</i>		
<b>Creatinine clearance (mL/min)</b>	<b>Dosage</b>	
	<b>Prophylaxis until the outbreak is over</b>	<b>Treatment</b>
>60 mL/min	75 mg once daily	75 mg twice daily
>30-60mL/min	75 mg on alternate days or 30 mg once daily	75 mg once daily or 30 mg twice daily
10-30 mL/min	30 mg on alternate days	30 mg once daily
<10 mL/min (renal failure)*	No data	Single 75 mg dose for the duration of illness
Dialysis patients*	<b>Low-flux HD:</b> 30 mg after alternate dialysis sessions <b>High-flux HD:</b> No data <b>CAPD dialysis:</b> 30 mg once weekly <b>CRRT High-flux dialysis:</b> No data	<b>Low-flux HD:</b> 30 mg after each dialysis session <b>High-flux HD:</b> 75 mg after each dialysis session <b>CAPD dialysis:</b> 30 mg once weekly <b>CRRT High-flux dialysis:</b> 30 mg daily or 75 mg every second day
*Experience with the use of oseltamivir in patients with renal failure is limited. These regimens have been suggested based on the limited available data. Consultation with an infectious disease physician or clinical pharmacist is recommended. Doses may vary from those in product monograph.		

<b>Zanamivir</b>	
<i>No Renal Impairment</i>	
<b>Dosage</b>	
<b>Prophylaxis<sup>2,3</sup></b>	<b>Treatment</b>
10 mg (two 5 mg inhalations) once a day	10 mg (two 5 mg inhalations) twice a day for 5 days
<i>Renal Impairment</i>	
<b>Dosage</b>	
No dosage adjustment necessary for prophylaxis or treatment	

1. Oseltamivir is administered orally without regard to meals, although administration with meals may improve gastrointestinal tolerability. Oseltamivir is available in 30 mg, 45 mg, and 75 mg capsules and as a powder for oral suspension that is reconstituted to provide a final concentration of 6 mg/mL. When dispensing commercially manufactured Oseltamivir (Tamiflu) Powder for Oral Suspension (6 mg/mL), pharmacists should ensure the units of measure on the prescription instructions match the dosing device.
2. If residents develop ILI symptoms while on the prophylactic dose they should be switched to the treatment dose.
3. Prophylaxis should be continued until 7 days after symptom onset in the last case (symptom onset is Day 1).

**Table 2. Recommended Antiviral Doses in Children**

<b>Oseltamivir (Tamiflu)</b>			
<b>Dosage</b>			
<b>Age</b>	<b>Weight</b>	<b>Prophylaxis</b>	<b>Treatment (5 days)</b>
< 3 months		Not recommended unless situation is critical due to limited data in this age group	3 mg/kg/dose twice daily
3 months to < 12 months		3 mg/kg/dose once daily	3 mg/kg/dose twice daily
≥ 12 months	≤ 15 kg (33 lbs)	30 mg once daily	30 mg twice daily
	> 15 to 23 kg (> 33 to 51 lbs)	45 mg once daily	45 mg twice daily
	> 23 to 40 kg (> 51-88 lbs)	60 mg once daily	60 mg twice daily
	> 40 kg (88 lbs)	75 mg once daily	75 mg twice daily

<b>Zanamivir</b>		
<b>Dosage</b>		
<b>Age</b>	<b>Prophylaxis</b>	<b>Treatment</b>
≥ 7 years old	10 mg (two 5 mg inhalations) daily	10 mg (two 5 mg inhalations) twice daily

## Adverse Reactions

**Table 3: Adverse reactions of antiviral drugs**

Adverse Reaction	Oseltamivir	Zanamivir
Gastrointestinal	<ul style="list-style-type: none"><li>• Nausea</li><li>• Vomiting (less severe if taken with food)</li></ul>	
Respiratory		<ul style="list-style-type: none"><li>• Bronchospasm</li><li>• Exacerbation of underlying chronic respiratory disease</li></ul>

Adverse reactions to antiviral therapy should be reported to Health Canada:

- By calling toll-free at 1-866-234-2345
- Online at [www.healthcanada.gc.ca/medeffect](http://www.healthcanada.gc.ca/medeffect)
- By completing a Canada Vigilance Reporting Form which you can send by fax toll-free to 1-866-678-6789.

## Appendix G: Resource Links

Local Public Health Offices:

<http://www.nshealth.ca/public-health-offices>

2018 Influenza Vaccine NACI Statement:

<http://www.phac-aspc.gc.ca/naci-ccni/index-eng.php>

Hand Hygiene Practices in Healthcare Settings

[http://publications.gc.ca/collections/collection\\_2012/aspc-phac/HP40-74-2012-eng.pdf](http://publications.gc.ca/collections/collection_2012/aspc-phac/HP40-74-2012-eng.pdf)

[Point of Care Risk Assessment:](#)

<https://www.canada.ca/en/public-health/services/infectious-diseases/nosocomial-occupational-infections/guidance-infection-prevention-control-measures-healthcare-workers-acute-care-long-term-care-settings.html>

## Appendix H: References

Canadian Immunization Guide: Chapter on Influenza and National Advisory Committee on Immunization "Statement on Influenza Vaccine for 2018-2019". Public Health Agency of Canada.

<https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/healthy-living/canadian-immunization-guide-statement-seasonal-influenza-vaccine-2018-2019/canadian-immunization-guide-statement-seasonal-influenza-vaccine-2018-2019.pdf>

Public Health Agency of Canada, "FluWatch: ILI definitions," September 2014. [Online]. Available: <https://www.canada.ca/en/public-health/services/diseases/flu-influenza/influenza-surveillance/influenza-definitions.html>

Public Health Agency of Canada, "Guidance: Infection Prevention and Control Measures for Healthcare Workers in Acute Care and Long-term Care Settings," PHAC, 20 December 2010. [Online]. Available: <http://www.phac-aspc.gc.ca/nois-sinp/guide/ac-sa-eng.php>

F. Aoki, D. Upton, H. Stiver and G. Evans, "The use of antiviral drugs for influenza: A foundation document for practitioners." Canadian Journal of Infectious Diseases Medical Microbiology, vol. 24, no. Autumn, p. 7C, 2013.

Stiver HG, Evans GA, Aoki FY, Allen UD, Laverdiere M. Guidance on the use of antiviral drugs in acute care facilities 2014-2015. Canadian Journal of Infectious Disease Medical Microbiology Vol 26 No 1, January/February 2015.

