

Guide to Influenza Control
For Long-Term Care Facilities
and
Adult Residential Centres

Nova Scotia Department of Health and Wellness
&
District Health Authority Public Health Services

2011-2012



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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) and adult residential centres (ARC). 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 vaccination recommendations each season. However, because influenza outbreaks can still occur among highly vaccinated long-term care/adult residential residents, LTC and ARC 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 and ARC. They have been developed from local, provincial, and national experience, discussions, and review of the literature.



Helpful Tip: *In order to make best use of this guide Public Health and LTCF/ARC staff involved with outbreak management for a specific facility should meet prior to Influenza season to review the information together.*

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

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

- 2.1 Planning, Education and Communication
- 2.2 Immunization
- 2.3 Surveillance
- 2.4 Outbreak Management

2.1 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. If possible, an in-service training program for staff on droplet/contact precautions, hand hygiene techniques and a review of the influenza control plan should be held prior to the start of the influenza season.

The following section includes a list of other recommendations that facilities should consider when planning for influenza season (this is not an exhaustive list):

- LTCF and ARC should review and revise their 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.




Helpful Tip: *The dosage for Amantadine can be precalculated. It is important to note that an up-to-date age, ideal body weight*, and serum creatinine are needed to calculate a creatinine clearance for Amantadine dosing. Up to date serum creatinine is within 12 months for medically stable residents or since any significant change in medical status (see Appendix G, Q & A: Antiviral Medication use during Influenza Outbreaks in LTCF)*

*Ideal body weight (IBW) is calculated by pharmacists using a formula (IBW: males= 50kg+2.3kg for each inch>5 feet; IBW: females=45.5kg+2.3kg for each inch>5 feet). IBW is used in the calculation of creatinine clearance.

- Obtain resident's consent for influenza, tetanus and pneumococcal immunization on admission to facility
- Ensure facility nurses have the appropriate knowledge and skills to administer influenza vaccine and develop standing order policies allowing the nurses to administer the vaccine
- Develop standing orders for eligible residents to receive annual influenza vaccination
- Organize activities such as vaccination fairs and competitions between wards and work units
- Make influenza immunization clinics accessible in time and place to all staff
- Develop a process that helps track who (residents and staff) have been immunized and who has not, if you don't already have one in place.
- Ensure vaccine providers have all the information they need to appropriately handle questions and concerns
- Provide feedback to staff on immunization coverage rates



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

 Are you ready for flu season checklist	
<input type="checkbox"/> Nasopharyngeal swabs (check expiry dates)	<input type="checkbox"/> Up to date serum creatinines
<input type="checkbox"/> Lab requisitions	<input type="checkbox"/> Standing orders antiviral treatment/prophylaxis
<input type="checkbox"/> Copy of this guide/ influenza plan on nursing units and checklist (Appendix E) posted on units	<input type="checkbox"/> Vaccine Program planning completed (staff and residents)

2.2 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/ARC, influenza vaccine decreases the incidence of pneumonia, hospital admission and death, and reduces exacerbations in persons with chronic obstructive pulmonary disease (CCDR August 2010).

With respect to health care workers (HCW), studies have shown that transmission of influenza from a clinically or sub-clinically infected HCW to their vulnerable patients can result in significant morbidity and mortality. For this reason, the National Advisory Committee on Immunization (NACI) states that, "...provision of influenza vaccination for HCW who have direct patient contact [is] an essential component of the standard of care for influenza prevention for the protection of their patients." (CCDR, August 2010)

It is also important to note that the Required Organizational Practices for Standard Accreditation Canada states that, "findings show that an intervention to improve the assessment and delivery of influenza vaccination to healthcare staff, service providers, and hospitalized clients would improve outcomes in addition to cost savings for the health system" (Accreditation Canada, 2011).

Being immunized will also protect HCW's and their families from becoming ill and developing influenza complications.

Therefore, it is recommended that:

- all staff and volunteers in LTCF and ARC s be immunized for influenza, unless medically contraindicated, when the vaccine becomes available (usually in late October).
- all residents should receive influenza immunization starting late October unless medically contraindicated.
- if it is more practical to hold immunization clinics for staff and residents simultaneously, then late October or early November would be the best time to immunize.

The influenza vaccine is usually available from PHS in mid to late October (this is dependent upon national vaccine production, licensing and distribution procedures). Since the cold chain must be respected at all times (i.e., vaccine must be stored at

2° C to 8° C and should not be frozen) no vaccine will be released from PHS unless it is immediately placed in an appropriate cooler with ice packs for transportation.



Helpful Tip: For information outlining vaccine dose, contraindications, commonly asked questions etc. see **Appendix G, Q & A: 2011-2012 Seasonal Influenza Vaccine Information for Immunizers.**

IMPORTANT: Data on individuals (staff and residents) vaccinated within the facility must be reported to local Public Health Services using the data collection form and completion instructions you will receive from Public Health. A sample can be found in **Appendix B: Reporting Immunization Coverage.**

2.3 Surveillance for Influenza and Influenza-like Illness (ILI)

Case Definitions

Influenza

An acute viral disease of the respiratory tract characterized by fever/chills, headache, myalgia (muscle aches), arthralgia (joint pain), sore throat, cough and prostration (exhaustion).

Influenza-like illness (ILI)

Acute onset of respiratory illness with fever and cough and with one or more of the following: sore throat, arthralgia, myalgia or prostration which is likely due to influenza.*+

* In persons 65 and older, fever may not be prominent. There may just be a decline in function or a worsening of an underlying chronic condition.

+ According to Atlanta CDC's 2009-2010 Influenza Prevention and Control Recommendations, "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" (Fiore et al., 2008, p5). 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 a number of factors. As the season unfolds, the predominant symptoms usually become more familiar to the staff monitoring the facility.



Helpful Tip: "Acute onset" in the above case definition usually means a distinct change from normal status to respiratory illness over 1-3 days, based on clinical judgement.

Suspect Influenza 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 1st to April 30th). Symptoms of influenza-like illness (ILI) may also be reported by staff.

LTCF/ARC and acute care facilities are required to report outbreaks or suspected outbreaks of influenza and/or ILI to District Public Health Services. 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 surveillance protocol in place at the start of the influenza season.

Note: *The objective of Surveillance activities is to detect clusters of ILI and report suspected and confirmed outbreaks of influenza and ILI in LTCF/ARC/acute care facilities to Public Health Services*

2.4 Outbreak Management of ILI in LTCF/ARC

This section has the following components:

2.4.1 Steps to take when an outbreak is suspected (Outbreak Identification and Confirmation).

2.4.1.1 Important Laboratory Information

2.4.2 Infection Prevention and Control and Public Health Measures

2.4.3 Antiviral Prophylaxis and Treatment

2.4.4 Declaring the Outbreak Over

2.4.1 When an outbreak is suspected, it is important to do the following:

1. Confirm that the symptoms meet the case definition for influenza-like illness:

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

- Sore throat;
- Arthralgia (joint pain) ;
- Myalgia (muscle aches) ;
- Prostration (exhaustion);
- Fever may not be prominent in individuals over 65. There may just be a decline in function or a worsening of an underlying chronic condition.

If you suspect ILI, consult with Public Health Services (PHS).

2. Determine the number of residents and staff meeting the case definition and find out if those affected are confined to one unit/floor. Initiate a line listing (**see Appendix C: Respiratory Disease Line Listings, Residents and Staff**)

AND

Notify local PHS immediately of the suspected outbreak and obtain an outbreak number to be included on lab requisitions and specimens. After hours and on weekends, please call the Medical Officer of Health (MOH) on call (902-473-2222-CDHA Locating).



Helpful Tip: *Ensure workers know that ILI is reportable even if it occurs on the week-end or after regular business hours. It is a good idea to post the check list (see Appendix E: CHECK LIST WHEN SUSPECT ILI IN YOUR FACILITY) on all nursing units as a friendly reminder about what steps to take when ILI occurs.*

3. Collect viral nasopharyngeal (NP) swabs from the initial cases **as soon as ILI is suspected**. Please refer to section 2.4.1.1 below (section A: “Nasopharyngeal Specimen Collection for Influenza”)
4. Once an outbreak is suspected, infection prevention and control and public health measures need to be implemented as soon as possible (refer to “Infection Prevention and Control and Public Health Measures” section 3.4.2).

IMPORTANT: Confirmation of an outbreak will be determined following discussions between PHS, the MOH, and the facility.

5. Update the line listing regularly and send to PHS. There should be regular communication between the facility and PHS 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 running line list per outbreak. You would just indicate in the room number 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 PHN

It might help to send the PHNs a copy of Floor plans of the facility, if available, when trying to determine how/if outbreak is spreading

For readability purposes, it is helpful to print/fax the line list on legal size paper, if possible

6. The need for antiviral treatment and prophylaxis will be determined by the facility Medical Director in consultation with the MOH.

Please see section 2.4.3 below and Appendix G, Q & A: Antiviral Medication use during Influenza Outbreaks in Long-Term Care Facilities
Table 1: “Recommended adult doses of oseltamivir and zanamivir for the prophylaxis and treatment of influenza”

7. In consultation with the MOH, the outbreak will be declared over approximately two incubation periods after the symptom onset of the last case, depending on which influenza virus is identified.

8. Refer to **Appendix D and E: Algorithm and Check List**

2.4.1.1 Important Laboratory Information

Diagnosis of respiratory viruses (influenza, RSV etc.) depends on the collection of high-quality specimens, their rapid transport to the lab and appropriate storage. See sections A-F below for more information on specimens.

- During influenza season, viral collection kits may be available at local / regional hospital laboratories. Districts 1 through 8 should obtain their viral collection kits from their local / regional laboratory. For District 9 (Capital Health only), collection kits can be ordered directly from CDHA Microbiology.
- The viral collection kits contain two swabs; in addition to the regular swab that was used in the past, **the kit contains a smaller calibre, more flexible swab that should make collecting a nasopharyngeal sample easier.**



Helpful Tip: *These kits do not require refrigeration prior to use but must be refrigerated after a sample has been taken.*

- **Nasopharyngeal swabs should be obtained as soon as an influenza outbreak is suspected.**

NEW: Specimens should be collected within 5 days of onset of symptoms, preferably within 48 hours. Sampling beyond 5 days may be considered in patients with persisting or worsening symptoms regardless of age, in young children or the elderly, and in the immunocompromised (CPHLN, 2011, p. 4).

- **Collect nasopharyngeal swabs from up to 4 to 6 different ill patients.** It is not necessary to test more than six residents for each outbreak.
- **Once influenza has been confirmed in an institution, further testing during this outbreak is not necessary.** However, if residents develop ILI while on treatment or prophylaxis, repeat testing can be done for identification of resistant viruses. Under the guidance of public health, a repeat NPS should be collected and submitted for PCR. Repeat specimens from an institution with confirmed influenza will not be processed within a two week period unless directed by

Public Health. If influenza is identified, the specimen may be set up for culture and submitted for supplemental characterization and resistance testing.

- If patients present with new ILI after the outbreak has ended, repeat testing is appropriate.
- Ensure your lab specimen and the requisition indicates the name of the facility involved and the outbreak number from PHS. If no outbreak number is available, clearly indicate “ILI outbreak” on the requisition.
- You must notify your public health offices whenever there is a possible outbreak; **do NOT delay notifying PHS while awaiting the results of swabs. Ensure your lab specimen and the requisition indicates the Outbreak Number, name of the facility involved, ILI outbreak.** Ensure the swab has not expired, as specimens received in expired containers will not be processed.
- Testing frequency (weekday / weekend) is assessed on an ongoing basis by CDHA Microbiology. Please note that turn-around time may be further impacted by transportation from local / regional labs to the CDHA microbiology testing facility.

A. Specimen Collection

Appropriate specimen types common in LTCFs:

- Nasopharyngeal swab and aspirate
- Endotracheal aspirate

Other appropriate specimens (more common in acute care settings)

- Bronchial Wash
- CSF
- Tissue

(Note: ensure that all specimen containers have a valid expiration date)

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

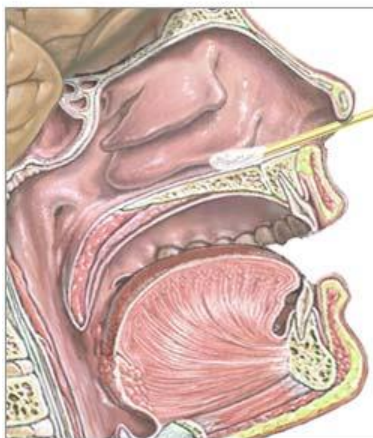
- Nose
- Throat and throat washings

B. Collection of Nasopharyngeal Swabs

An instructional video is available at <http://www.youtube.com/watch?v=TFwSefezIHU>

1. When you collect the specimens, wear gloves and a surgical/procedure mask. The mask is to protect you if the resident coughs or sneezes while you are collecting the specimen. Change gloves and wash your hands between each resident.
2. Explain the procedure to the resident.

3. Viruses live in cells. If the resident has a lot of mucus in the nose, this can interfere with the collection of cells. Either ask the resident to use a tissue to gently clean out visible nasal mucus or clean the nostril yourself with a Q-tip or tissue.
4. To estimate the distance to the nasopharynx, measure the distance from the corner of the nose to the front of the ear prior to insertion and then insert the shaft **ONLY half this length**.
5. Seat the resident comfortably. Tilt the resident's head back slightly to straighten the passage from the front of the nose to the nasopharynx to make insertion of the swab easier.
6. Insert the smaller, more flexible swab provided along the medial part of the septum, along the base of the nose, until it reaches the posterior nares – gentle rotation of the swab may be helpful. The swab may be inserted straight back, parallel to the roof of the mouth. Do not aim the swab upward (see diagram) Insertion of the swab usually induces a cough.
Note: If resistance is encountered on one side, try the other nostril, as the patient may have a deviated septum.
7. Rotate the swab several times to dislodge the columnar epithelial cells. *Note - Insertion of the swab usually induces a cough.*
8. Withdraw the swab and place it in the collection tube. Snap the end of the swab to make it fit more easily. Seal the tube. Label the specimen with patient's name and another unique identifier (See labelling requirements below), date of specimen collection and type of specimen (i.e. nasopharyngeal swab).
9. Refrigerate immediately. Transport to the lab promptly.
10. Remove gloves and wash hands.



A sterile swab is passed gently through the nostril and into the nasopharynx

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

C. Labelling of Specimens

1. Ensure specimen label (and requisition) includes two unique identifiers. One identifier must be the patient's legal name and the other can be the medical record number and provincial health card number or registered health card equivalent, passport number, private insurance policy number.
2. Ensure specimen container has not expired. Specimens in expired containers will not be processed by the lab.

D. Filling in the Requisition – Complete all parts and add the Following:

1. Ensure specimen requisition (and label) also includes the same two unique identifiers.
2. **Indicate the specimen is part of an outbreak. Write “(Name of Facility)” and ILI Outbreak.**
3. Indicate that the test is for “influenza”.
4. Indicate ‘Public Health Outbreak # _____’ if provided by Public Health.
5. Ask results to be copied to the MOH and to the resident’s family physician.

E. Shipping Specimens:

Send specimen(s) promptly to your local / regional hospital.

F. Result Inquiry:

Result inquiries can be directed to your local/regional lab or CDHA lab reporting 902-473-2266 as appropriate.

2.4.2 Infection Prevention and Control and Public Health Measures for Influenza

Use the measures outlined below when residents start to exhibit influenza-like illness (ILI) symptoms. Please continue using them until symptoms have resolved.

1. Routine Practices:

Wear gowns/aprons and facial protection (surgical/procedure masks and eye protection or combination mask/shield) during procedures and resident care activities that will likely generate splashes or sprays of blood, body fluids, secretions or excretions. Gowns should be long sleeved, and can be reusable or disposable. Aprons can be used when limited contamination is likely. Gowns and aprons must be changed after each use.

2. Droplet/ Contact Precautions:

- Wear gloves when providing personal care to a resident with ILI;
- Staff should use liquid soap and water or alcohol-based hand sanitizer to wash their hands after removing gowns, gloves, masks and after leaving the room. If there is no access to soap and water, use a 70-90% alcohol-based hand sanitizer;
- A surgical/procedure mask (with ear loops) is required when within two metres of a resident with ILI;
- Masks should be removed by the straps, being careful not to touch the actual mask.
- Whenever a surgical/procedure mask is required, staff should also wear eye or face protection (shield or protective glasses). Eye protection can be reusable and must be cleaned between uses with disinfectant wipes;

- **The current recommendation for respiratory protection during collection of an NP swab is a surgical/procedure mask and eye protection;**
 - In an effort 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
3. **Respiratory Hygiene** (also known as Respiratory Cough Etiquette):
- Residents with ILI should also be taught proper respiratory hygiene practices, e.g. cough into sleeve, disposal of tissues, etc.;
 - Residents with ILI who are unable to cover their cough should wear a surgical/procedure mask (if tolerated) when staff are providing close personal care. Masks should be changed when they become dampened from respiration. N95 masks should never be used on residents.
4. **Hand Hygiene:**
- Residents with ILI should be taught proper hand hygiene and provided with opportunities to practice hand hygiene. Hand sanitizer wipes should be made available to residents who are unable to get to a sink after toileting, before eating, etc.. Staff should assist residents in handwashing if they are not able to wash their hands independently.
 - Staff should perform hand hygiene frequently (as per the facility policies) using either liquid soap and water or 70-90 % alcohol-based hand sanitizer.
5. **Accommodation:**
- 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.
6. **Cohorting of Residents and Staff:**
- Asymptomatic residents should be kept away from affected units/floors;
 - Limit movement of staff between ill and well residents as much as possible.
7. **Visitors:**
- Signs should be posted at all entrances and exits throughout the facility advising visitors that the facility is experiencing an outbreak of ILI and to wash their hands when entering and exiting the facility. Place alcohol-based hand sanitizer near the entrance;
 - Visitors who are ill should stay away until they are feeling well and are able to fully participate in their usual day-to-day activities;
 - If an ill person is allowed to visit for compassionate reasons, the visitor 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 in the facility;

- All visitors to ill residents should wear surgical/procedure masks and perform hand hygiene on entering and leaving the room.

8. Social Activities:

- Restrict outings and limit gatherings of people for activities such as bingo;
- Visits from community groups (e.g. school and/or church groups) should be put on hold until the outbreak is declared over;
- These restrictions, however, need to be balanced with the importance of such activities to the well-being of the residents.

9. New Admissions:

- In general, there should be no new admissions during an outbreak. However, this can be decided on a case-by-case basis;
- If an admission does occur, the new resident needs to be fully informed of the current situation, and be prepared to take antiviral prophylaxis if recommended.

10. Transfers:

- Residents of the facility who are hospitalized with influenza or ILI may return to their home facility when they are feeling well and are able to fully participate in their usual day-to-day activities;
- 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;
- If a transfer into the facility is required, the transferred resident needs to be fully informed of the current situation, and be prepared to take antiviral prophylaxis if recommended;
- 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, the medical director, and MOH;
- Facilities are to notify the Placement Office in their region of any bed, wing, or facility closures and resumption of service;
- 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 illness;
- If transfer to the hospital or another facility is necessary, notify the hospital/other facility and paramedic service 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.

11. Staff and Volunteers:

- An annual in-service should be provided for all staff and volunteers on influenza control measures.
- **Exclude HCW symptomatic/ infected with influenza from work :**
 - 1. until 7 days after onset of symptoms with the first day of symptoms being counted as day 1, OR**

2. they have been immunized at least two weeks previously and have started on antiviral therapy.

- **If the second criterion is met, a fitness-for-work assessment shall first be conducted through the Occupational Health department (Health Canada, 2002).**
- 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 criteria above).
- If staff and volunteers work at more than one facility, they should notify the other facility of the outbreak.

12. Environmental Controls:

- Staff, residents and volunteers should observe careful hand hygiene, using proper technique with soap and water or a 70-90 % alcohol-based hand sanitizer;
- Staff, residents and volunteers should practice respiratory hygiene/respiratory cough etiquette (i.e. covering the mouth and nose when coughing and/or sneezing and proper tissue disposal, and then hand hygiene);
- When possible, try to maintain a two-meter (six-foot) distance between residents with ILI and others. Use of partitions, like curtains may help;
- Enhanced environmental cleaning regimens are important. This includes cleaning and disinfection of high-touch surfaces and the proper disposal of tissues and other contaminated objects with respiratory secretions. Routine hospital-grade disinfectants that have a drug identification number (DIN) and a virucidal claim are effective in killing influenza viruses if used according to the manufacturers' instructions. Also consider increasing frequency of cleaning;
- Any equipment that is shared between residents must be cleaned and disinfected, as per *Routine Practices*, before use on another resident;
- Laundry and waste disposal protocols are as per *Routine Practices*.

13. Immunization

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

2.4.3 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 an ILI outbreak is determined to be caused by influenza, antiviral medication for prophylaxis and treatment should be considered and if recommended by the MOH, 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 (see Appendix G, Q & A: Antiviral Medication use during Influenza Outbreaks in Long-Term Care Facilities).



Helpful Tip: *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, unless more than one resident develops symptoms.*

- When the decision to use antiviral medication for outbreak control has been made, PHS will notify the provincial Pharmacare Program staff to ensure Pharmacare payment for antiviral medication claims. This will be done by faxing a copy of the letter in **Appendix F** to Pharmacare (902-468-9402). A Public Health Nurse (PHN) may sign this letter on behalf of the MOH. This may wait for the next business day.
- 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 decision regarding which anti-viral to use and the actual ordering of antiviral medications is the responsibility of the facility.
- There should be regular communication between the facility and PHS 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/emailed to PHS on a regular basis. This assists PHS in monitoring the outbreak.
- Veterans Affairs Canada will also provide financial coverage for veterans residing in a long term care facility when antiviral medications for prophylaxis or treatment are recommended by Public Health due to an outbreak of flu-like illness or confirmed influenza.

IMPORTANT: Antiviral medication may be considered for treatment in residents who have influenza symptoms for less than 48 hours. Antiviral medication is unlikely to benefit residents who have been ill for more than 48 hours, although recent information with Pandemic H1N1 does indicate it still may be effective. Antiviral treatment is continued for a maximum of 5 days.



Helpful Tips: *The rationale for prophylaxis is to prevent influenza amongst 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, usually 1 to 2 weeks. If residents develop influenza-like symptoms while on prophylaxis they should be switched to the antiviral treatment regime*

2.4.4 Declaring the Outbreak Over

The outbreak of influenza or ILI will usually be declared over seven days after the onset of the last case in a resident. 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 F: 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)
Planning, Education and Communication	<ul style="list-style-type: none"> ▪ involve staff and senior leaders in debriefing ▪ evaluate educational materials used 	<ul style="list-style-type: none"> ▪ engage all stakeholders ▪ develop comprehensive communication and education strategy 	<ul style="list-style-type: none"> ▪ initiate communication and education strategy ▪ Flu Launch ▪ regular updates within facility
Immunization	<ul style="list-style-type: none"> ▪ evaluate coverage rates by target groups [i.e., residents and staff/volunteers (physicians, nurses and other staff)] 	<ul style="list-style-type: none"> ▪ set new targets ▪ modify immunization recording process as required 	<ul style="list-style-type: none"> ▪ plan immunization clinics ▪ obtain new vaccine ▪ track inventory ▪ document coverage rates
Surveillance	<ul style="list-style-type: none"> ▪ evaluate surveillance system 	<ul style="list-style-type: none"> ▪ revise surveillance system as required 	<ul style="list-style-type: none"> ▪ conduct surveillance (for residents and staff) as part of infection control program
Outbreak Management	<ul style="list-style-type: none"> ▪ debrief with key staff ▪ report on outbreaks, including cost ▪ evaluate infection control measures 	<ul style="list-style-type: none"> ▪ review outbreak guidelines 	<ul style="list-style-type: none"> ▪ suspect outbreaks and manage as per the guidelines ▪ monitor for and report suspect outbreaks



Health and Wellness

Seasonal Influenza Vaccine Data Collection Form
Long Term Care/Residential Care Facilities - 2011-2012 Season
(FOR LONG TERM CARE/RESIDENTIAL CARE FACILITY USE)

DHA: _____

Facility/Clinic Name: _____

Contact Person: _____

Date (yyyy/mm/dd): _____

Facility/
Clinic Type: Long Term Care
 Residential Care/
 Small Options Home

Phone #: _____

PLEASE SEE PAGE 2 FOR INSTRUCTIONS ON COMPLETING THIS FORM

Check box if the facility met the target ($\geq 95\%$ coverage rate) for staff, volunteers, and residents/patients.



DATA CATEGORIES		Number in Facility (A)	#Immunized			% Immunized (E)
			In House (B)	Other Provider (C)	Total (D)	
Facility Coverage Rates	Staff					
	Volunteers Total					
	Residents/Patients Total					
	Staff/Volunteers/Residents/Patients Total	-		-	-	-
	All Other Total	-		-	-	-
	TOTAL # VACCINATED	-		-	-	-
Age Groups (Sum should equal 'Total # Vaccinated')	6 - 23 mos Total	-		-	-	-
	2 - 4 yrs Total	-		-	-	-
	5 - 17 yrs Total	-		-	-	-
	18 - 23 yrs Total	-		-	-	-
	24 - 64 yrs Total	-		-	-	-
	≥ 65 yrs Total	-		-	-	-
Target Groups	Pregnant Total	-		-	-	-
	Aboriginal Living on Reserve Total	-		-	-	-

Please complete and return, to your local DHA Public Health Services office
 (i.e. the office who sent you the vaccine), by **February 29, 2012.**

Long Term Care/Residential Care Facilities
2011-2012 Season
(FOR LONG TERM CARE/RESIDENTIAL CARE FACILITY USE)

PLEASE NOTE:

- In Nova Scotia all residents ≥ 6 months are eligible to receive publicly funded influenza vaccine
- The data categories are all broken down into 3 sections. 'Facility Coverage Rates' are the data that will be necessary for you to calculate the coverage rates in your facility, 'Age Groups' and 'Target Groups' will be necessary for the DHW Surveillance Team to collect coverage rates of the specified target groups provincially
- 'Number in Facility'(A) is a count of all people who fall under each category (the denominators)
- 'In House' (B) is meant to capture the number of individuals who received an influenza vaccine by the immunization provider within the facility, 'Other Provider' (C) is meant to capture the number of staff, volunteers, and residents/patients who have received an influenza vaccine from outside the facility (e.g. family physician). 'Total' (D) is the sum of individuals vaccinated 'In House' (B) and by 'Other Provider' (C) – ($D=B+C$)
- Staff are considered to include anyone employed by the facility
- The box indicated by wavy lines is the coverage rate for staff, volunteers, and residents, if it equals 95% or over, please check the box provided above
- 'All Other' is intended to capture individuals who are not residents/patients or staff/volunteers but who received an immunization from your facility
- In addition to the total number vaccinated, you must also record the data for each age and target group for those **immunized 'In House'**
- The sum of all those in 'Age Groups' should equal the 'Total # Vaccinated'
- **Individuals are counted toward one age group AND may be counted toward one or more target group(s)**
- Depending on your facility, some fields may not be relevant. Please complete all that apply.

APPENDIX C: Respiratory Disease Line Listings (Residents and Staff)

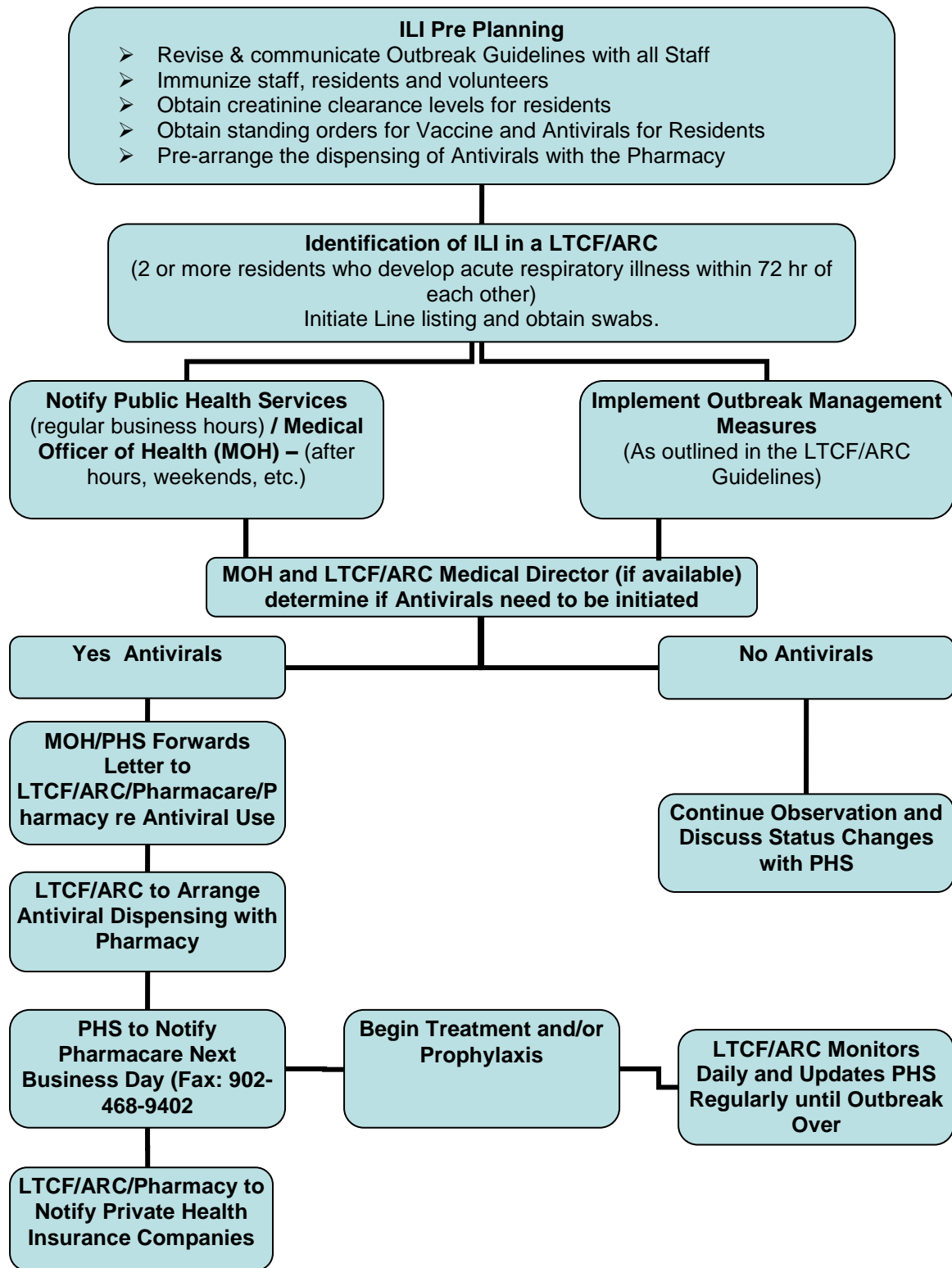
Resident line list available at following link:

http://www.gov.ns.ca/hpp/populationhealth/surveillanceguidelines/Line_Listing_for_LTCF_Residents.pdf

Staff line list available at following link:

http://www.gov.ns.ca/hpp/populationhealth/surveillanceguidelines/Line_Listing_for_LTCF_Staff.pdf

APPENDIX D: Influenza-like-Illness in LTCF/ARC Algorithm



APPENDIX E: CHECK LIST WHEN SUSPECT ILI IN YOUR FACILITY

Feel free to Post on Nursing Units

Case Definition for Influenza Like illness (ILI): Acute onset of respiratory illness with fever and cough and with one or more of the following: sore throat, arthralgia, myalgia, or prostration which is likely due to influenza.

LTCF/ARC
<input type="checkbox"/> 1. If two or more residents develop ILI symptoms (see case definition) within 72 hours of each other report to your local public health office: (Mon-Fri: 0830-1630) phone the local Public Health Nurse or CDC intake line OR If after hours or week-ends, report to on-call Medical Officer of Health (MOH) by phoning CDHA Locating: 902-473-2222
Institute Infection Prevention Control and Public Health Measures ASAP
<input type="checkbox"/> 2. Send line list to Public Health ASAP and then daily <input type="checkbox"/> Add only those who meet the case definition <input type="checkbox"/> Each day add new cases but do not remove any of the earlier cases
<input type="checkbox"/> 3. Obtain Outbreak Number from Public Health Nurse
4. Lab specimens: <input type="checkbox"/> Collect viral nasopharyngeal (NP) swabs on initial cases (check expiry dates)- up to 6 swabs/outbreak <input type="checkbox"/> Label swab AND requisition with OB number. Ensure requisition is filled out completely and label.
5. Antiviral therapy <input type="checkbox"/> Consult PHS (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 PHS
6. Outbreak declared over <input type="checkbox"/> Consult PHS to determine when to declare over

APPENDIX F: Letters

Date _____

Letter to LTCF/ARC 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. Necessary environmental controls and general hygiene measures have already been implemented within the facility. Vaccination of people at high risk remains the single most important measure for reducing the impact of influenza. Immunization of staff and residents who have not already been vaccinated is recommended.

In Canada, amantadine and two neuraminidase inhibitors (oseltamivir and zanamivir) are licensed for use as treatment and prophylaxis against influenza. **The choice of drug depends on the type (A or B) and subtype (H1 or H3) of influenza detected in your facility. The effectiveness of antivirals is determined each season and recommendations may change as new information becomes available.**

- Amantadine is effective against influenza A/H1 (but not most A/H3). It is not effective against influenza B or Pandemic H1N1 ;
- Oseltamivir is effective against influenza A/H3 (but not A/H1), influenza B, and Pandemic H1N1 ;
- Zanamivir is effective against influenza A (H3 and H1) and B and Pandemic H1N1.

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.

A. Chemoprophylaxis:

We recommend that residents who have not been affected by the current outbreak of influenza-like illness (ILI definition: acute onset of respiratory illness with fever and cough and with one or more of the following: sore throat, joint pain, muscle aches, or exhaustion which is likely due to influenza virus) be started on an antiviral medication as soon as possible. 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. 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:

We recommend 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 unlikely to benefit residents who have been ill for more than 48 hours, although recent information with Pandemic H1N1 does indicate it still may be effective. 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 G, Q & A: Antiviral Medication use during Influenza Outbreaks in Long-Term Care Facilities of the Guide to Influenza Control for Long Term Care Facilities, NS Department of Health and Wellness, or the 2011 NACI Influenza Statement: <http://www.phac-aspc.gc.ca/naci-ccni/>

Drug recommended (check all that apply) Oseltamivir Zanamivir Amantadine

Zanamivir/Amantadine recommended due to:

Lab confirmed influenza strain or Clinical information

Pharmacy supplier (name and phone, if available)

If you have any questions or concerns, please call me at _____.

Sincerely,
Public Health Nurse

Letter to Pharmacy/ Pharmicare

Pharmacare fax: 902-468-9402

Pharmacare phone: 429-6565 or 1-800-544-6191

Name of Pharmacy: _____

Pharmacy phone#: _____

Date _____

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

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

In Canada, amantadine and two neuraminidase inhibitors (oseltamivir and zanamivir) are licensed for use as treatment and prophylaxis against influenza. **The choice of drug depends on the type (A or B) and subtype (H1 or H3) of influenza detected in your facility. The effectiveness of antivirals is determined each season and recommendations may change as new information becomes available.**

- Amantadine is effective against influenza A/H1 (but not most A/H3). It is not effective against influenza B or Pandemic H1N1 ;
- Oseltamivir is effective against influenza A/H3 (but not A/H1), influenza B, and Pandemic H1N1 ;
- Zanamivir is effective against influenza A (H3 and H1) and B and Pandemic H1N1.

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:

We have 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. If residents develop influenza-like symptoms while on prophylaxis they will be switched to the antiviral treatment regime.

B. Treatment:

We have 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 unlikely to benefit residents who have been ill for more than 48 hours, although recent information with Pandemic H1N1 does indicate it still may be effective. Treatment should be continued for a maximum of 5 days.

Drug recommended (check all that apply) Oseltamivir Zanamivir Amantadine

Zanamivir/Amantadine recommended due to:

Lab confirmed influenza strain or Clinical information

If you have any questions or concerns, please call me at _____.

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 there was an 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 G: Q & As

Antiviral Medication use during Influenza Outbreaks in Long-Term Care Facilities

What Antiviral Medications are available for use against Influenza?

In Canada, amantadine and two neuraminidase inhibitors (oseltamivir and zanamivir) are licensed for use as treatment and prophylaxis against influenza. **The choice of drug depends on the type (A or B) and subtype (H1 or H3) of influenza detected in your facility. The effectiveness of antivirals is determined each season and recommendations may change as new information becomes available.**

- Amantadine is effective against influenza A/H1 (but not most A/H3). It is not effective against influenza B or Pandemic H1N1 ;
- Oseltamivir is effective against influenza A/H3 (but not A/H1), influenza B, and Pandemic H1N1 ;
- Zanamivir is effective against influenza A (H3 and H1) and B and Pandemic H1N1.

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

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

- For the treatment of residents with influenza-like illness;
- For the prevention of influenza amongst 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 Public Health Services and the Provincial Public Health Laboratory Network, 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.

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 is being or has been carried out;
- Influenza has been identified from viral nasopharyngeal swabs taken from residents, or influenza has been identified from viral specimens taken in the surrounding community, 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.



Helpful Tip: *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, unless more than one resident develops symptoms.*

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

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

- Prior to the influenza season, document an up-to-date serum creatinine, weight and age for each resident. 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 amantadine and oseltamivir dose for each resident. Consider using a computer spreadsheet to track dosages;
- 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 3.

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 unlikely to benefit residents who have been ill for more than 48 hours, although recent information with Pandemic H1N1 does indicate it still may be effective. Antiviral treatment is continued for a maximum of 5 days.

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, usually one to two weeks.

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 PHS for further recommendations.

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

Simultaneous use of amantadine for prophylaxis and therapy within an institution is not advised because of the increased risk of the emergence of viral resistance, but may be necessary. The same precaution has not been advised for oseltamivir or zanamivir.

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 LTC residents who meet the clinical criteria (listed below) and are Pharmacare beneficiaries.

Note: Copayments apply (30% per prescription) until the resident meets their copayment maximum which under the Seniors Pharmacare Program is \$ 382.00 annually.

Oseltamivir and zanamivir are Exception Status Benefits under the Nova Scotia Pharmacare Program. LTCF/ARC residents who are covered by one of the Pharmacare Programs (family, seniors 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 is covered by the Pharmacare programs in LTCF based on the direction of a Medical Officer of Health. Veterans Affairs Canada will provide financial coverage for veterans residing in a long term care facility when antiviral medications for prophylaxis or treatment are recommended by Public Health due to an outbreak of flu-like illness or confirmed influenza.

When the decision to initiate antivirals is made, in consultation with the MOH, a letter will be sent to the facility on behalf of PHS. This letter entitled to LTCF/ARC Director of Care/Medical Director Re: Antiviral Medication for the Control of an Influenza Outbreak can be found in Appendix F. PHS will also fax a letter (also found in Appendix F) to Pharmacy/Pharmacare at 902-468-9402. 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.

Cost:

- Five days of treatment with oseltamivir is approximately \$55 to \$60.
- Five days of treatment with zanamivir is \$35.

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**

*Duration of prophylaxis will be determined by the circumstances. For outbreak control, prophylaxis is continued until outbreak is declared over.

NO RENAL IMPAIRMENT				
Dosage				
Oseltamivir**		Zanamivir		
Prophylaxis	Treatment	Prophylaxis	Treatment	
75mg once a day	<i>Adults</i> 75 mg twice a day for 5 days	10mg (2 puffs) once a day	10mg (2 puffs) twice a day for 5 days	
RENAL IMPAIRMENT				
Creatinine clearance (mL/min)	Dosage			
	Oseltamivir		Zanamivir	
	Prophylaxis	Treatment	Prophylaxis	Treatment
10-30 ml/min	75 mg every other day or 30 mg once daily	Treatment: 75 mg once daily for 5 days	No dosage adjustment necessary	No dosage adjustment necessary
Renal Dialysis	Low flux hemodialysis: 30 mg orally every second hemodialysis session. Continuous ambulatory peritoneal dialysis: 30 mg orally once a week	Same as Prophylaxis	No dosage adjustment necessary	No dosage adjustment necessary

***Note: A recent serum creatinine **is not** required before starting oseltamivir prophylaxis, unless there is a reason to suspect significant renal impairment.

The following tables (2A and 2B) offer two alternatives to amantadine prophylaxis dosing in LTCF/ARC. Please note that Table 2B is for use with liquid preparation of amantadine.

Table 2A: Recommended doses of amantadine for the prophylaxis of influenza

NO RENAL IMPAIRMENT			
Age	Dosage Prophylaxis		
10-64 years	200mg once daily, or divided doses twice daily		
>=65 years	100mg once daily		
RENAL IMPAIRMENT			
Creatinine clearance (mL/min)	Dosage		
	Prophylaxis		Treatment
	10-64 years	>=65 years	
>=80	100 mg twice a day	100 mg once a day	Not recommended for treatment
60-79	Alternating daily doses of 200 mg and 100 mg	Alternating daily doses of 100 mg and 50 mg	Not recommended for treatment
40-59	100 mg once a day	100 mg every two days	Not recommended for treatment
30-39	200 mg twice weekly	100 mg twice weekly	Not recommended for treatment
20-29	100 mg three times a week	50 mg three times a week	Not recommended for treatment
10-19	Alternating weekly doses of 200 mg and 100 mg	Alternating weekly doses of 100 mg and 50 mg	Not recommended for treatment

Table 2B: Proposed once daily dosing schedule for amantadine solution (10 mg/mL) in persons over the age of 65 years*

NO RENAL IMPAIRMENT			
Age	Dosage Prophylaxis		
10-64 years	200 mg once daily, or divided doses twice daily		
>= 65 years	100 mg once daily		
RENAL IMPAIRMENT			
Creatinine clearance (mL/min)	Dosage		
	Prophylaxis		Treatment
	Initial Dose (Day 1)	Subsequent Doses Starting Day 2	
>=80	100 mg	100 mg/day (10 mL)	Not recommended for treatment
60-79	100 mg	75 mg/day (7.5 mL)	Not recommended for treatment
40-59	100 mg	50 mg/day (5 mL)	Not recommended for treatment
20-39	100 mg	25 mg/day (2.5 mL)	Not recommended for treatment
10-19	100 mg	**	Not recommended for treatment
*Dosing schedule developed based on National Advisory Committee on Immunization guidelines, with daily dosing increments set as 2.5 mL to permit the use of medicine cups marked at each 2.5 mL.			
**No daily dose: if outbreak continues, repeat 100 mg dose every seven days during the outbreak.			

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Adverse Reactions

Table 3: Adverse reactions of antiviral drugs

Adverse reaction	Drug		
	Oseltamivir	Zanamivir ^a	Amantadine ^b
Gastrointestinal	Nausea Vomiting (less severe if taken with food)		Anorexia Nausea Vomiting
Neurological			Nervousness Anxiety Insomnia Seizures Delirium Hallucinations
Cardiovascular			Arrhythmias (in overdose)
Respiratory		Bronchospasm Exacerbation of underlying chronic respiratory disease	
^a zanamivir is not recommended in individuals with asthma or chronic obstructive pulmonary disease; however, if the benefit outweighs the risks, the drug can be used with caution and under proper monitoring. Note that while bronchospasm has been reported, no difference from placebo was found in clinical trials. Proper administration of zanamivir may be difficult in some elderly residents, and that must be considered when recommending.			
^b Side effects of amantadine can be minimized by using individualized dosing calculations based on serum creatinine, ideal weight and age. Work closely with your pharmacist to ensure appropriate dosing is determined.			

- 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
 - By completing a Canada Vigilance Reporting Form which you can send by fax toll-free to 1-866-678-6789.

If you have questions or require assistance completing forms, contact Dr. Kathryn Slayter, clinical pharmacy specialist, Infectious Diseases, at Capital District Health Authority, T: (902) 473-6829 or email: Kathryn.Slayter@cdha.nshealth.ca.

2011-2012 Seasonal Influenza Vaccine Information for Immunization Providers

1. What are my accountabilities as an immunization provider?

A. Reporting to Public Health

- Adverse Events Following Immunization (AEFI) are to be reported to local Public Health Services as per *It's the Law – Reporting Adverse Events Following Immunization* (see Q 17)
- Physicians are to use MSI billing codes that are specific to the 2011-2012 seasonal influenza vaccine (see Q 24)
- Other immunization providers are to complete aggregate data collection forms provided by Public Health (see Q 16)

Management of Vaccine/Cold Chain

- Vaccine must be stored between +2° and +8°C at all times
- Report all cold chain breaks to local Public Health Services and follow their directions on use of affected vaccines
- Attention must be paid to the duration of stability of vaccine once it has been opened or reconstituted

Competency

- Immunizers need to be deemed competent by their employing agency to provide immunization

Safety

- Adrenalin must be present during vaccine administration
- Clients must be monitored for at least 15 minutes post-immunization
- Documentation must include the lot number of the vaccine in case of recall or adverse event

Ordering Vaccine

- As is the case every year, there are potential delays in vaccine development and distribution from the manufacturers
- Seasonal Influenza vaccine is sent from the manufacturer to the N.S. Provincial Biodepot over a period of 6-8 weeks in varying quantities. It's therefore critical for Public Health to manage the supply to ensure equitable distribution to all immunization providers.
- Immunization providers should not order the whole season's supply at once as the supply needs to be shared among all immunization providers. We encourage you to first immunize people at greatest risk of influenza-related complications and those people who live with or care for them

Role Model/ Duty of Care

- Annual influenza immunization of health care workers is very important for reducing influenza-related morbidity and mortality among high risk groups.

All immunization providers are encouraged to receive an annual influenza immunization.

2. Who is eligible to receive publicly funded seasonal influenza vaccine?

- A.** Immunization against influenza is publicly funded and advised for all Nova Scotians ≥ 6 months of age, but is strongly recommended for people at high risk of influenza-related complications and for those people who live with or care for them. The vaccine will be free of charge. As in previous years, NS Dept of Health and Wellness (DHW) does not fund the costs of administration or supplies.

3. Which groups are considered high risk for influenza-related complications?

- A.** The following groups are considered high risk :
- Persons with morbid obesity (BMI ≥ 40)
 - Aboriginal peoples
 - Adults and children with the following chronic health conditions:
 - cardiac or pulmonary disorders (including bronchopulmonary dysplasia, cystic fibrosis and asthma);
 - diabetes mellitus and other metabolic diseases;
 - cancer, immunodeficiency, immunosuppression (due to underlying disease and/or therapy);
 - renal disease;
 - anemia or hemoglobinopathy;
 - conditions that compromise the management of respiratory secretions and are associated with an increased risk of aspiration; and
 - children and adolescents with conditions treated for long periods with acetylsalicylic acid.
 - People of any age who are residents of long term care and other chronic care facilities.
 - People ≥ 65 years of age.
 - Healthy children 6 to 23 months of age.
 - Healthy pregnant women (the risk of influenza-related hospitalization increases with length of gestation, i.e. it is higher in the third than in the second trimester).

4. What are the components of the seasonal influenza vaccines?

- A.** The antigenic strains included in the 2011-2012 influenza seasonal vaccine (northern hemisphere) are:
- A/California/7/2009 (H1N1)-like virus;
 - A/Perth/16/2009 (H3N2)-like virus;
 - B/Brisbane/60/2008-like virus.

The only two products being used in Nova Scotia for the publicly funded influenza immunization program are Fluviral and Vaxigrip

5. Who should NOT routinely be given seasonal influenza vaccine?

- A. The following people should not receive seasonal influenza vaccine:
- Infants less than 6 months of age;
 - People who have had a serious allergic reaction to a previous dose of any influenza vaccine;
 - People who have had a serious allergic reaction to any of the components of influenza vaccine;
 - People with an egg allergy who are at higher risk for a severe allergic reaction, defined by the Canadian Society of Allergy and Clinical Immunology as: previous respiratory or cardiovascular reaction, generalized hives or those with poorly controlled asthma;
 - People who have a severe febrile illness;
 - People known to have had Guillain-Barré Syndrome within 8 weeks of a previous influenza vaccine.

6. Should people who have experienced Ocular Respiratory Syndrome (ORS) following receipt of a previous seasonal influenza vaccine be immunized with the seasonal influenza vaccine?

- A. There is no evidence to suggest that ORS will be a concern following immunization. Individuals who have experienced the oculorespiratory syndrome (ORS), including those with a severe presentation (bilateral red eyes, cough, sore throat, hoarseness, facial swelling) but without lower respiratory tract symptoms, may be safely reimmunized with influenza vaccine. Persons who experienced ORS with lower respiratory tract symptoms should have a consultation with an allergist.

7. Should people who are allergic to eggs, components of the vaccine, or a previous dose receive the seasonal influenza vaccine?

- A. Influenza vaccination for those with egg allergy is no longer considered a contraindication provided appropriate monitoring and support is available; prior vaccine skin testing is not recommended.
- Egg-allergic individuals at **lower risk** for a severe allergic reaction, defined by the Canadian Society of Allergy and Clinical Immunology (CSACI) as: mild gastrointestinal or mild local skin reactions and able to tolerate ingestion of small amounts of egg can be vaccinated with a full age-appropriate dose followed by a waiting period of 30 minutes.
- Persons with an egg allergy who are at **higher risk** for a severe allergic reaction, defined by CSACI as: previous respiratory or cardiovascular reaction, generalized hives or those with poorly controlled asthma should only be vaccinated if recommended by an allergist. (NACI Statement on Seasonal Influenza Vaccine for 2011-2012)

Expert review of the risks and benefits of vaccination should be sought for those who have previously experienced severe lower respiratory symptoms (wheeze, chest tightness, difficulty breathing) within 24 hours of influenza vaccination, an

apparent allergic reaction to the vaccine or any other symptoms (e.g., throat constriction, difficulty swallowing) that raise concern regarding the safety of re-immunization.

8. Should pregnant women receive the seasonal influenza vaccine?

- A. Yes. Pregnant women should receive seasonal influenza vaccine as evidence demonstrates they are at higher risk of complications from influenza.

9. Is seasonal influenza vaccine safe for breastfeeding mothers?

- A. Yes. Seasonal influenza vaccine is safe for breastfeeding mothers.

10. How should the seasonal influenza vaccines be stored?

- A. Vaccine Cold Chain should be maintained at all times (2°C to 8°C). The vaccine should not be frozen and must be protected from light.

11. How long can a vial of influenza vaccine be used once it is opened?

- A. An opened vial of **Fluviral® (GSK)** should be used within 28 days from the date it was opened.

An opened vial of **Vaxigrip® (Sanofi Pasteur)** should be used within 7 days from the date it was opened.

12. How is the seasonal influenza vaccine administered?

- A. The publicly funded seasonal influenza vaccine is administered intramuscularly. The deltoid muscle is the recommended site in adults/ older children and the anterolateral thigh in infants (1 year old and under).

13. Can I draw up the seasonal influenza vaccine into syringes to be used at a later time?

- A. No. The manufacturer has no data to confirm that immunogenicity of the product will be preserved after prolonged exposure to the plastic of the syringe. The company also has concerns regarding bacterial contamination. Therefore, influenza vaccine should be injected as soon as possible after being drawn up.

14. How soon following immunization does protection develop and how long does it last?

- A. Protection from the seasonal influenza vaccine generally begins 10 to 14 days after immunization and may last 6 months or longer.

15. What are the side effects of the seasonal influenza vaccine?

- A. One third of those vaccinated report soreness at the injection site for up to two days. Flu-like symptoms (fever, sore muscles, and tiredness) may occur within 6 to 12 hours after vaccination and last 1 to 2 days, especially in those receiving the vaccine for the first time. Anaphylactic hypersensitivity reactions occur rarely.

16. What immunization information needs to be reported Public Health Services?

- A. Physicians will use MSI billing codes that are specific to the influenza vaccine. (See billing code information at end of this document)
All other providers will submit aggregate influenza information at the end of the influenza season to their local Public Health office on forms provided by Public Health.

17. What adverse events need to be reported to Public Health Services?

- A. All adverse events not normally expected as detailed in the product monograph, that are temporally related to the administration of the vaccine need to be reported in accordance with the “It’s the Law: Reporting Adverse Events Following Immunization (AEFI)” Poster:
http://www.gov.ns.ca/hpp/publications/13087_AdverseEventsPoster_Mar09_En.pdf

18. Can the seasonal influenza vaccine cause influenza illness?

- A. No. The seasonal influenza vaccine does not contain live virus and therefore cannot cause influenza.

19. Can you receive seasonal influenza vaccine before or after having donated/received blood or Immune Globulin?

- A. Yes.

20. Can seasonal vaccine, adult pertussis vaccine and pneumococcal vaccine be given at the same time?

- A. Yes they can be administered at the same time but they should be administered via separate syringes in different sites. Pneumococcal vaccination is recommended once in a lifetime, except in certain high risk individuals as specified in the *Canadian Immunization Guide*. Pertussis vaccine is recommended in childhood and adolescence and once as an adult.

21. Can you receive seasonal influenza vaccine if you have received other vaccines recently? Does there need to be an interval of time between receiving other vaccines and seasonal influenza vaccine?

- A. Yes, you can receive seasonal influenza vaccine if you have received other vaccines recently. No, there is no interval of time needed between receiving seasonal influenza vaccine and any other vaccines.

22. Where can I get more information on seasonal influenza vaccine?

- A. For more information on influenza vaccine, contact your local Public Health office: <http://www.gov.ns.ca/hpp/contacts/phs-offices.asp>. You may also check the following websites:
- Nova Scotia Department of Health and Wellness web site at: www.gov.ns.ca/hpp/flu
 - Public Health Agency of Canada: Statement on Seasonal Trivalent Inactivated Influenza vaccine for 2011-2012: <http://www.phac-aspc.gc.ca/naci-ccni/index-eng.php>
 - Canadian Public Health Association: <http://www.immunize.ca>

23. What is the dosage and frequency of the seasonal influenza vaccines?

- A. The National Advisory Committee on Immunization (NACI) Statement on Seasonal Influenza Vaccine for 2011-12 recommends a **change in the dose of influenza vaccine for children ages 6-35 months**. The recommended dosage is **now 0.5ml of vaccine** (not 0.25 ml as in previous years), based on evidence of moderate increase in immunogenicity and no evidence of increased adverse events. N.S. has made the decision to adopt the NACI recommendation.

Recommended Influenza Vaccine Dosage by Age, 2011-2012

Age Group	Dose	No. of Doses
9 years and older	0.5 ml	1
6 months-8 years**	0.5 ml	1 or 2*

*Previously unvaccinated children less than 9 years of age require two doses of Seasonal Influenza Vaccine, with a minimum interval of 4 weeks between doses. Children less than 9 years of age who have received one or more doses of Seasonal Influenza Vaccine in the past only need to receive one dose per season thereafter. The seasonal influenza vaccine is not licensed or recommended for infants less than 6 months of age.

**The recommended dosage for influenza vaccine for children age 6-35 months has increased from 0.25 ml (half dose) to 0.50 ml (full dose)

24. How do physicians bill for influenza immunization?

- A. **MSI Billing Information for Administration of Seasonal Influenza (Flu) and Polysaccharide Pneumococcal (PC) Vaccines 2011-2012**

Billing requires a health service code, a modifier, and a diagnostic code				
Immunization	Health Service Code	Modifier	MSUs	Diagnostic Code
Influenza	13.59L	RO=INFL	6.0	Select diagnostic code from the table below
Pneumococcal	13.59L	RO=PNEU	6.0	

Patient Status	Diagnostic Codes	
	<i>FLU</i>	<i>PC and FLU</i>
Pregnant	V221	N/A
Males & non-pregnant females	V048	V066

Refer to the following table when billing for a provincial immunization tray fee.

Health Services Code	Description	MSUs
13.59M	Provincial immunization tray fee	1.5 per multiple (max 4/visit)

Notes:

1. If one vaccine is administered but no associated office visit is billed (**i.e. the sole purpose for the visit is the immunization**), **claim the immunization at a full fee of 6.0 MSUs.**
2. If two vaccines are administered at the same visit but no associated office visit is billed (**i.e. the sole purpose for the visit is the immunization**), **claim for each immunization at a full fee of 6.0 MSUs each.**
3. If one vaccine is administered in conjunction with a billed office visit, **claim both the office visit and the immunization at full fee.**
4. If two vaccines are administered in conjunction with a billed office visit, **claim the office visit and the first injection can be claimed at full fee. All subsequent injections will be paid at 50%.**
5. For children less than 12 months of age, if a vaccine is administered in conjunction with a well baby care visit, **claim the well baby care visit and the immunization.**

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Appendix H: Resource Links

Your local Public Health Office:

<http://www.gov.ns.ca/ohp/contacts/phs-offices.asp>

Infection Prevention and Control (IPCNS) Consultants: **Suzanne Rhodenizer-Rose and Patsy Rawding (902) 424-0416**

CCDR 2011 Influenza Vaccine NACI Statement: <http://www.phac-aspc.gc.ca/naci-ccni/>

Hand washing poster:

http://www.gov.ns.ca/hpp/publications/03007_HandWashingPoster_En.pdf

Information Sheet for Influenza and Influenza Vaccine:

<http://www.gov.ns.ca/ohp/cdpc/influenza-resources.asp>

Recommended Steps for Putting on and Taking off Personal Protective Equipment (PPE) on page 87 and 88 of the following document:

http://www.health.gov.on.ca/english/providers/program/infectious/diseases/best_prac/bp_routine.pdf

Infection Prevention and Control Nova Scotia (IPCNS):

<http://ipc.gov.ns.ca/about>

Infection Prevention and Control Best Practices for Long Term care, Home and Community Care including Health Care Offices and Ambulatory Clinics:

<http://www.phac-aspc.gc.ca/amr-ram/ipcbp-pepci/pdf/amr-ram-eng.pdf>

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