

## Annex 4~A: Public Health Management of Novel Influenza Virus Cases and Contacts

**Note:** These recommendations regarding the public health management of novel influenza virus cases and contacts may change as the epidemiology of the virus becomes available.

### 1.0 General Information

#### 1.1 Case Definition

For up-to-date case definitions, please refer to the Public Health Agency of Canada FluWatch website, [www.phac-aspc.gc.ca/fluwatch/06-07/def06-07\\_e.html](http://www.phac-aspc.gc.ca/fluwatch/06-07/def06-07_e.html), Definitions for the 2006-2007 Season.

#### 1.2 Causative Agent

Refer to the Influenza chapter, *Nova Scotia Communicable Disease Control Manual*. The subtype will not be known until the novel virus emerges.

#### 1.3 Symptoms

Refer to the Influenza chapter, *Nova Scotia Communicable Disease Control Manual*.

#### 1.4 Incubation Period

Refer to the Influenza chapter, *Nova Scotia Communicable Disease Control Manual*.

#### 1.5 Source

Refer to the Influenza chapter, *Nova Scotia Communicable Disease Control Manual*.

#### 1.6 Transmission

Refer to the Influenza chapter, *Nova Scotia Communicable Disease Control Manual*.

#### 1.7 Communicability

Refer to the Influenza chapter, *Nova Scotia Communicable Disease Control Manual*.

## 1.8 Treatment

Treat with neuraminidase inhibitors (oseltamivir and zanamivir). M2 ion channel inhibitors (e.g., amantadine) are not recommended for treatment. Refer to Antiviral Drug Strategy chapter and Health Services chapter, *Nova Scotia Health System Pandemic Influenza Plan*.

**Table 1: Recommended pediatric and adult doses of antiviral drugs for the treatment of influenza**

Drug (trade name)	Treatment doses
Oseltamivir (Tamiflu®)	<i>Children</i> <sup>a</sup> See Table 2
	<i>Adults</i> 75 mg twice a day for 5 days
Zanamivir (Relenza®)	<i>Adults and children &gt;7 years</i> <sup>b</sup> 10 mg (2 puffs) twice a day for 5 days

<sup>a</sup> Oseltamivir should not be used for treatment of influenza in pediatric patients less than one year of age. See Important Safety Information Regarding TAMIFLU® (Oseltamivir Phosphate) and Prescription in Children Less Than 1 Year of Age ([www.hc-sc.gc.ca/dhp-mps/medeff/advisories-avis/prof/2004/tamiflu\\_hpc-cps\\_e.html](http://www.hc-sc.gc.ca/dhp-mps/medeff/advisories-avis/prof/2004/tamiflu_hpc-cps_e.html)).

<sup>b</sup> The safety and efficacy of zanamivir for treatment of influenza in pediatric patients less than 7 years of age have not been established.

**Table 2: Recommended dose of oseltamivir for children one year of age and older for the treatment of influenza**

Body weight (kg)	Dosage
≤15	30 mg twice daily for 5 days
>15–23	45 mg twice daily for 5 days
>23–40	60 mg twice daily for 5 days
>40	75 mg twice daily for 5 days
<ul style="list-style-type: none"> <li>Oseltamivir is not indicated for treatment of influenza in patients less than one year of age.</li> <li>Dose should be reduced by one-half in patients with creatinine clearance &lt;30 mL/min</li> </ul>	

## 1.9 Core Messages for Prevention

- Identify cases early and isolate; educate about
  - symptoms of ILI and when and how to seek medical attention
  - proper infection control procedures, including procedures to use if leaving the home to seek medical care (e.g., using a private vehicle rather than public transit, phoning ahead, wearing a mask)
  - contact tracing and quarantine
  - basic personal hygiene (e.g., covering nose and mouth when sneezing and coughing) and hand washing

## 1.10 Post-exposure Prophylaxis

### *Post-exposure prophylaxis with oseltamivir or amantadine*

Zanamivir was recently approved for prophylaxis in Canada, and recommendations as to its use are pending. Refer to Antiviral Drug Strategy chapter, *Nova Scotia Health System Pandemic Influenza Plan*.

Post-exposure prophylaxis should begin within 48 hours of exposure to the case and continue for at least seven days.

**Table 3: Recommended pediatric and adult doses of antiviral drugs for the prophylaxis of influenza**

Drug (trade name)	Prophylaxis doses
Oseltamivir (Tamiflu®)	<i>Adults and children &gt;13 years</i> <sup>a</sup> 75 mg once a day <sup>b</sup>
Zanamivir (Relenza®)	<i>Adults and children &gt;7 years</i> <sup>c,d</sup> 10 mg (2 puffs) once a day <sup>e</sup>
Amantadine (Symmetrel®)	See Table 4

<sup>a</sup> Oseltamivir is not indicated for prophylaxis of influenza in pediatric patients less than 13 years of age.

<sup>b</sup> The safety and efficacy of oseltamivir for prophylaxis of influenza in patients less than 13 years of age have been demonstrated for up to 6 weeks.

<sup>c</sup> Zanamivir was recently approved for prophylaxis in Canada; recommendations for its use are pending.

<sup>d</sup> The safety and efficacy of zanamivir for the prophylaxis of influenza in pediatric patients less than 7 years of age have not been established.

<sup>e</sup> The safety and efficacy of zanamivir for prophylaxis of influenza in patients less than 7 years of age have been demonstrated for up to 4 weeks.

**Table 4: Recommended adult and pediatric doses of amantadine for the prophylaxis of influenza**

NO RENAL IMPAIRMENT		
Age	Dosage	
1–9 years	5 mg/kg once daily, or divided doses twice daily, total daily dose not to exceed 150 mg	
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	
	10–64 years	>=65 years
>=80	100 mg twice a day	100 mg once a day
60–79	Alternating daily doses of 200 mg and 100 mg	Alternating daily doses of 100 mg and 50 mg
40–59	100 mg once a day	100 mg every two days
30–39	200 mg twice weekly	100 mg twice weekly
20–29	100 mg three times a week	50 mg three times a week
10–19	Alternating weekly doses of 200 mg and 100 mg	Alternating weekly doses of 100 mg and 50 mg

## 2.0 Procedure

### 2.1 Roles and Responsibilities

#### 2.1.1 Medical Officer of Health (MOH)

In the event of a case of influenza-like illness (ILI) or a laboratory-confirmed novel influenza virus during the pandemic alert period (phases 3, 4, and 5), the MOH

- takes the lead immediately to initiate follow-up, contact tracing, and containment;
- informs health professionals about precautionary measures including quarantine and isolation
- informs the Office of the Chief Medical Officer of Health (OCMOH) about the case.

#### 2.1.2 Investigator

During the pandemic alert period

- follows up cases
- assesses homes for suitability for isolation of cases

- monitors home isolation
- carries out contact tracing
- carries out active daily surveillance of contacts

### 2.1.3 Physician

- ensures that appropriate infection control procedures are in place in practice.
- ensures that patients are triaged. See *Nova Scotia Health System Pandemic Influenza Plan*, Health Services chapter.

### 2.1.4 Laboratory

The QEII Laboratory is providing direction on laboratory investigations for novel influenza viruses. See *Nova Scotia Health System Pandemic Influenza Plan*, Surveillance chapter, for laboratory procedures.

## 2.2 Public Health Management of Novel Influenza Virus Cases and Contacts

### 2.2.1 Definitions

**Quarantine:** The restriction of the activities of well persons who have been exposed to a case during its period of communicability.

**Isolation:** The separation, for the period of communicability of ill (i.e., symptomatic) persons from others in such places and under such conditions as to prevent or limit the direct or indirect transmission of the infectious agent.

**Close contact:** A person with face-to-face exposure within 1 metre of a case.

### 2.2.2 Pandemic Alert Period: Steps in Public Health Management

1. Public health case and contact management differ according to the pandemic phase (see Table 5).

**Table 5: Public Health Management of Novel Influenza Viruses Cases and Contacts by Pandemic Phase**

**Interpandemic Period**

Case Management	Contact Management
1.0 No new virus subtype in humans. Subtype that has caused human infection may be present in animals <u>outside</u> Canada. Risk to humans is low.	
1.1 No new virus subtype in humans. Subtype that has caused human infection is present in animals <u>inside</u> Canada. Risk to human is low.	
2.0 No new virus subtype in humans. Animal influenza virus subtype that poses substantial risk to humans is circulating in animals <u>outside</u> Canada.	
2.1 No new virus subtype in humans. Animal influenza virus subtype that poses substantial risk to humans is circulating in animals <u>inside</u> Canada.	
<input type="checkbox"/> Refer to Influenza chapter, <i>Nova Scotia Communicable Disease Control Manual</i> .	<input type="checkbox"/> Refer to Influenza chapter, <i>Nova Scotia Communicable Disease Control Manual</i> .
<input type="checkbox"/> Refer to <i>Guide to Influenza Control for Long-Term Care Facilities</i> .	<input type="checkbox"/> Refer to <i>Guide to Influenza Control for Long-Term Care Facilities</i> .

**Pandemic Alert Period**

3.0 New virus subtype in humans outside Canada (single cases). No or rare instances of human-to-human spread.	
<input type="checkbox"/> As for Phase 1.0.	<input type="checkbox"/> As for Phase 1.0.
3.1 New virus subtype in humans inside Canada (single cases). No or rare instances of human-to-human spread.	
<input type="checkbox"/> Isolate ill individuals in hospital according to infection control guidelines or at home for 5 days after onset of symptoms (7 days for young children) or until symptoms have resolved, whichever is longer.	<input type="checkbox"/> Trace contacts. Active surveillance for symptoms of illness for 3 days after last exposure (or for the duration of the incubation period of the novel virus, if different).
<input type="checkbox"/> Laboratory testing of cases	<input type="checkbox"/> No activity restrictions.
<input type="checkbox"/> Treat with antiviral drugs.	<input type="checkbox"/> Antiviral drug prophylaxis for contacts not necessary unless a severe or unusual case or human-to-human transmission cannot be ruled out.
<input type="checkbox"/> Report cases according to the surveillance plan.	<input type="checkbox"/> Recommend annual influenza vaccine.

**Pandemic Alert Period**

Case Management	Contact Management
4.0 New virus subtype in humans <u>outside</u> Canada (small clusters). Limited human-to-human spread.	
4.1 New virus subtype in humans <u>inside</u> Canada (single cases; no clusters). Limited human-to-human spread.	
<ul style="list-style-type: none"> <li>□ As for Phase 3.1.</li> </ul>	<ul style="list-style-type: none"> <li>□ Trace contacts. Active surveillance for symptoms of illness for 3 days after last exposure (or for the duration of the incubation period of the novel virus, if different).</li> <li>□ Quarantine or, at a minimum, restrict activity and contact with others for 3 days after the last exposure to the case or for the duration of the incubation period, whichever is longer.</li> <li>□ Antiviral drug post-exposure prophylaxis (depending on the resistance status of the virus).</li> </ul>
4.2 New virus subtype in humans <u>inside</u> Canada (small localized clusters). Limited human-to-human spread.	
<ul style="list-style-type: none"> <li>□ As for Phase 3.1.</li> </ul>	<ul style="list-style-type: none"> <li>□ As for Phase 4.1.</li> </ul>
5.0 New virus subtype in humans <u>outside</u> Canada (large clusters). Localized human-to-human spread.	
5.1 New virus subtype in humans <u>inside</u> Canada (single cases; no clusters).	
<ul style="list-style-type: none"> <li>□ As for Phase 3.1.</li> </ul>	<ul style="list-style-type: none"> <li>□ As for Phase 4.1.</li> </ul>

**Pandemic Alert Period****Case Management**

5.2 New virus subtype in humans inside Canada (large clusters). Localized human-to-human spread.

- As for Phase 3.1.

**Contact Management****Close contacts**

- Trace close contacts if feasible (e.g., household contacts). Active surveillance for symptoms of illness for 3 days after last exposure (or for the duration of the incubation period of the novel virus, if different).
- Quarantine or, at a minimum, restrict activity and contact with others for 3 days after the last exposure to the case or for the duration of the incubation period, whichever is longer.
- Antiviral drug post-exposure prophylaxis (depending on the resistance status of the virus).

**Other potential contacts**

- For other potential contacts, identify exposure sites (e.g., school, workplace) rather than individuals.
- Recommend those linked to the exposure site (even if exposure status is unknown) to self-monitor for ILI for 3 days after last exposure (or for the duration of the incubation period of the novel virus, if different).
- Recommend those linked to the exposure site to restrict activity and contact with others for 3 days after the last exposure to the case or for the duration of the incubation period, whichever is longer.
- Recommend those self-monitoring for ILI immediately report if symptoms develop in order to receive instructions on isolation and medical management.
- Antiviral drug post-exposure prophylaxis is not recommended.

**Pandemic Alert Period****Case Management****Contact Management**

6.0 New virus subtype in humans outside Canada (in the general population). Sustained human-to-human spread.

6.1 Pandemic virus subtype in humans inside Canada (single cases; no clusters).

□ As for Phase 3.1.

- Identify possible exposure settings. Instruct close contacts of the case as well as those linked with the setting to self-monitor for ILI for 3 days after last exposure (or for the duration of the incubation period of the novel virus, if different).
- Recommend those self-monitoring for ILI to immediately report if symptoms develop in order to receive instructions on isolation and medical management.
- Recommend that individuals isolate themselves immediately if ILI symptoms develop.
- Antiviral drug post-exposure prophylaxis is not recommended.

6.2 Pandemic virus subtype in humans inside Canada (localized or widespread activity). Sustained human-to-human spread.

- Isolate ill individuals in hospital according to infection control guidelines or at home. Currently recommended duration of isolation for individuals at home is 24 hours after symptom resolution; however, this may change based on available epidemiological data.
- Laboratory testing according to protocol.
- Treat with antiviral drugs according to clinical care guidelines.
- Report cases according to surveillance plan.

- Contact tracing is not recommended.
- Quarantining of contacts is not recommended.
- Antiviral drug post-exposure prophylaxis is not recommended.
- Provide information to the general public on how to self-monitor for ILI and steps to take if symptoms develop.

### 2.2.2 *Pandemic Alert Period: Steps in Public Health Management (Cont'd)*

2. During the pandemic alert period, individuals with symptoms and possible exposure will come to the attention of the health system when they contact their physician or an emergency department or, in the case of travellers, through PHAC. These individuals will be triaged and referred for assessment. This procedure will be different during the pandemic period (see Health Services chapter).
3. Once assessed, physicians will report to the MOH any patient who meets the following criteria:
  - a history of possible exposure to a novel influenza virus with either:
    - close contact in the previous three days with a case of a novel influenza virus *or*
    - recent travel within the previous three days to a WHO reported affected area or to a defined setting that is associated with a cluster of novel influenza virus cases
  - OR
  - compatible symptoms, according to the case definition, with no other known cause of the illness
  - OR
  - laboratory-confirmed novel influenza virus
4. **Pandemic Alert Period Case Management**
  - a) The case's physician will treat the case with antiviral drugs (see Health Services chapter).
  - b) The MOH in discussion with the clinician jointly determine, according to the clinical severity, the location where the case should be managed. The options are
    - isolation in hospital
    - isolation at home

Several conditions must be met before a client can be placed on home isolation:

    - The case must be able to separate himself/herself from the rest of the family in his/her own room and wear a mask for any interaction with others.
    - Someone should be available to be a caregiver for the person on home isolation. Discuss on a case-by-case basis.
  - c) The public health nurse (PHN) will

- interview the patient using the Case Report Form (Annex 4-B) as a guide
  - educate the individual on influenza and how to prevent transmission to others
  - assess the suitability, by phone, of the home/residence if the case is being placed on home isolation (Annex 4-E). If a home visit is required, the PHN may contact a public health inspector for assistance
  - advise the case that a PHN will contact him/her on a daily basis in order to
    - monitor symptoms
    - assess compliance with isolation
  - obtain a list of contacts
  - ask the case if his/her contacts are aware of the diagnosis of influenza and whether he/she knows that they are contacts
  - provide the case with a telephone number to call for concerns or questions
- d) For those placed on home isolation:
1. MOH recommends home isolation for the client and provides a letter with this recommendation (Annex 4-F).
  2. PHN conducts assessment of the home situation by phone.
  3. If a home visit is required and the PHN requires assistance, the MOH may contact a public health inspector.
  4. If the case's residence is not suitable, recommend to the clinician that the case be admitted to hospital.
  5. If suitable, provide client and family with the following:
    - Recommendations for Care Providers at Home (Annex 4-F)
    - Fact sheets (Annex 4-F)
    - General Guidance for the Use of Surgical Face Masks
  6. Inquire if the client has regular service providers entering the home (e.g., homecare workers). If so, ensure that appropriate agencies are aware of infection control precautions.
  7. Conduct active daily surveillance
  8. If there are any concerns regarding compliance, discuss the situation with the MOH.

9. MOH will write a letter to the client to be hand-delivered (Annex 4-F).
10. If concerns regarding compliance with isolation continue, inform the MOH. The MOH will discuss this with the Chief Medical Officer of Health and legal counsel on a case-by-case basis.

5. **Pandemic Alert Period Contact Tracing and Follow-Up**

Contact tracing will be initiated according to the following guidelines:

- a) All close contacts will be identified and interviewed.
- b) If the case traveled on a plane while symptomatic, inform the Office of the Chief Medical Officer of Health (OCMOH) as soon as possible so that appropriate passenger follow-up can be initiated.
- c) Any contacts with symptoms should be referred for assessment of influenza as soon as possible (see Health Services chapter).
- d) According the pandemic phase and degree of contact, contacts should be educated about influenza and directed to either
  - active daily surveillance (ADS) and quarantine at home *or*
  - self-monitoring.

*Quarantine at Home Plus Active Daily Surveillance*

For those placed on home quarantine:

- MOH recommends home quarantine for a contact and provides letter with this recommendation (Annex 4-F).
- PHN educates contact and provides Fact Sheets (Annex 4-F)
- PHN carries out active daily surveillance using contact tracing and tracking forms (Annexes 4-C and 4-D).

*Self-Monitoring*

Contacts should be advised to monitor themselves for fever, cough, shortness of breath, difficulty breathing, malaise, chills, rigors, or headache. Instruct the individual to seek medical attention at the nearest emergency department or Alternative Assessment site (see Health Services chapter) if any of these symptoms develop.

- e) Contact tracing forms
  1. The contact should be called and the following information should be noted on the Active Daily Surveillance of Contacts of a Novel Influenza Virus form (Annex 4-D):
    - address, date of birth, and family physician of the contact
    - date of initial contact with the case

- status of the contact:
    - self-monitoring
    - home quarantine + active daily surveillance (HQ+ADS)
    - case
2. The individual should be educated on the wearing of masks.
  3. The individual should be educated on his/her responsibility to actively monitor his/her own health:
    - i. Temperature should be taken twice daily at least 4 hours after the last dose of any fever-reducing medicine.
    - ii. Presence and nature of cough or any change in cough should be noted.
    - iii. Shortness of breath or difficulty breathing should be noted.
  4. Date ADS is initiated should be recorded.
  5. Contacts should be called daily and any change in status noted.
  6. ADS should be continued for up to 3 days after the date of last contact with the case.
  7. Upon completion of surveillance, date of discharge should be recorded.
  8. If there are any concerns regarding compliance, discuss the situation with the MOH.
  9. MOH will write a letter to the client to be hand-delivered (Annex 4-F).
  10. If concerns regarding compliance with quarantine continue, inform the MOH. The MOH will discuss this with the Chief Medical Officer of Health and legal counsel on a case-by-case basis.

### **2.3 Guidelines for Long-Term Care and Home Care**

Long-term care facilities should follow the guidelines in the Health Services chapter of the *Nova Scotia Health System Pandemic Influenza Plan*.

### **2.4 Guidelines for Child-Care Centres**

## 2.5 Guidelines for Institutions

Health facilities should follow the Infection Control Guidelines in the Health Services chapter of the *Nova Scotia Health System Pandemic Influenza Plan*.