

## **Chapter 4: Surveillance**

## **Table of Contents for Chapter 4**

- 1.0 Introduction**
- 2.0 Monitoring the national and international influenza situation**
- 3.0 Surveillance during regular influenza season**
- 4.0 Enhanced Surveillance to detect the arrival of pandemic influenza**
- 5.0 Enhanced Surveillance during a pandemic influenza**
- 6.0 Surveillance for use and adverse effects of antiviral drugs and vaccines**

## Chapter 4: Surveillance

### 1.0 Introduction

Surveillance activities will vary depending on the stage of the pandemic. At all stages however, surveillance activities will provide the information required to make informed decisions regarding the management of the pandemic. In the interpandemic phase, surveillance activities will focus on monitoring activity in other parts of the world. The World Health Organization is hoping that very aggressive surveillance will identify the first instances of human-to-human transmission. Early identification of human-to-human transmission will facilitate the rapid implementation of control measures to prevent or delay subsequent transmission, such as the use of antiviral medications, and public health measures such as isolation and quarantine. Although the first instances of human-to-human transmission are likely to occur in other countries, surveillance mechanisms in Renfrew County & District must also be able to identify this type of transmission in the unlikely event that this should occur locally.

In a pandemic alert phase, surveillance activities will focus on monitoring international sources of information in order to determine how the virus is behaving in other parts of the world, i.e. what age groups is it affecting; how is it being transmitted; what measures are effective with respect to prevention and treatment; how sick people are becoming etc. As well, surveillance efforts will concentrate on watching for the first signs of the introduction of pandemic influenza into Renfrew County & District to determine if control measures can prevent further transmission.

Once pandemic influenza has become established in our jurisdiction, surveillance activities will focus on determining the impact of the pandemic on the population. Indicators that will be measured include emergency department visits, hospital admissions, admissions to intensive care units, ventilator usage and influenza-related deaths. When assessment centre sites are established in Renfrew County & District, the number of visits to these sites will also be monitored. As well, should antiviral drugs and/or vaccinations be available, surveillance activities will monitor the use of these medications and any adverse effects related to their use.

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### 2.0 Monitoring the National and International Influenza Situation

On an ongoing basis, the international influenza situation is closely monitored. Information from these sources is used to monitor the spread of avian influenza outbreaks, the extent of human disease and any evidence of human-to-human transmission. In the event of a pandemic, these sources will be used to better understand the outbreak and the extent of worldwide transmission. Some of the sources of this information are as follows:

- **World Health Organization (WHO):** The WHO provides updates on the worldwide situation in humans based on official reports. As well, the WHO publishes documents that guide in pandemic influenza planning.  
[http://www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/)

- **World Organization for Animal Health (OIE):** The OIE monitors, analyzes and disseminates information regarding animal health based on official reports and provides veterinary expertise on an international basis.  
[http://www.oie.int/eng/en\\_index.htm](http://www.oie.int/eng/en_index.htm)
- **Public Health Agency of Canada (PHAC):** The PHAC is the Canadian source of pandemic information and advice to travelers. PHAC publishes a weekly bulletin called FluWatch that provides information regarding the influenza situation in Canada, and elsewhere in the world. FluWatch contains information on: laboratory-based influenza virus identification; influenza-like illness reporting by sentinel physicians across the country; and reporting of influenza activity by provincial and territorial epidemiologists.
- **Canadian Network for Public Health Intelligence (CNPHI):** CNPHI is a secure web site designed to assist public health professionals in coordinating their response to communicable disease issues. It contains information posted by public health authorities across Canada on the outbreaks they are managing. CNPHI is run by the Public Health Agency of Canada.
- **Centers for Disease Control and Prevention (CDC):** The CDC is the American source of pandemic information and advice to travelers.  
<http://www.cdc.gov/flu/>
- **ProMED:** ProMED is an e-mail distribution lists that monitors media reports and official reports. ProMED also receives reports from local observers and readers. Reports are reviewed by experts and then posted via e-mail to over 300,000 subscribers in 150 countries.  
<http://www.promedmail.org/pls/promed/>
- **Ministry of Health and Long-Term Care (MOHLTC):** The Public Health Division of the Ministry of Health and Long-Term Care publishes a weekly influenza bulletin. This bulletin contains information on the level of influenza activity in each health unit area in Ontario, and the number of long-term care facilities experiencing outbreaks.  
[http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu\\_mn.html](http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_mn.html)

### 3.0 Surveillance During Regular Influenza Season

During regular influenza seasons, Renfrew County & District Health Unit uses several sources of information to monitor the influenza activity in the community. These systems are predominantly what are called “passive reporting systems” since RCDHU responds to reports received. The “passive reporting systems” that RCDHU uses during regular influenza seasons are described below:

- **Reporting of laboratory confirmed cases of influenza:** Under the Health Protection and Promotion Act R.S.O. 1990, physicians, other health care providers, laboratories, hospitals, school principals, and directors of institutions are required to report when someone has or may have a reportable disease, which includes influenza. In practice, many people do not seek medical attention for influenza, and few health care providers take swabs for influenza. Therefore laboratory confirmed influenza cases represent only a small fraction of influenza cases in the community.
- **Influenza outbreaks in long-term care homes:** Long-term care homes notify RCDHU whenever they see an increased number of people with respiratory symptoms compared to the normal institutional profile. Swabs are taken from several ill residents in order to identify if an influenza outbreak is occurring in the facility. Influenza in long-term care homes is the most reliable indicator of influenza activity in the community.
- **School Absenteeism:** School children are the first to be affected by the arrival of influenza and they are responsible for much of the early transmission within the community. School absenteeism of greater than 10% is a good indicator of influenza activity. Schools in Renfrew County & District are asked to notify RCDHU whenever they have more than 10% of their school students absent, especially if they are aware that some students have respiratory symptoms.

- **Febrile respiratory illness surveillance:** As an early detection system for SARS and other respiratory illness, health care settings are required to screen all patients/clients/residents who present for care. Screening questions ask about fever and new onset of cough or shortness of breath. A patient with both fever and new onset respiratory symptoms or worsening of existing symptoms is required to be placed under certain precautions to prevent spread of his/her infection. The number and percentage of people who report fever and respiratory symptoms on the febrile respiratory screening tool are reported to RCDHU. Renfrew County & District Health Unit monitor these trends that provide an indirect indicator of increases or decreases in respiratory illness in the community. In addition, the health care setting is required to report directly to RCDHU if any of the following are identified:
  - ⇒ A patient with a new or worsening cough and fever who has traveled to a country with a health alert in the past 14 days; or
  - ⇒ A patient with a new or worsening cough and fever who has been in contact with someone who is also ill and has a travel history to a country with a health alert in the last 14 day;
  - ⇒ There is an outbreak of febrile respiratory illness in any health care facility.

Hospital infection control practitioners in Renfrew County & District are also aware that the following may represent unusual events that they should report to the Health Unit:

- ⇒ Patient(s) admitted to the intensive care unit for at least 72 hours with no obvious cause for their febrile respiratory illness;
- ⇒ Patient(s) admitted with febrile respiratory symptoms from a long-term care facility; or
- ⇒ A group of health care providers admitted to hospital with febrile respiratory symptoms.

Laboratory testing for influenza virus is done at Public Health Laboratories.

## 4.0 Enhanced surveillance to detect the arrival of pandemic influenza

In order to detect the arrival of a pandemic strain of influenza during Pandemic Alert Period phase 4, community surveillance will need to switch from a “passive reporting system” to an “active reporting system”. This means Renfrew County & District Health Unit will need to make regular contact with key sources for monitoring influenza activity. There are a range of potential options available for more “active” influenza surveillance. The likelihood that influenza will be arriving in Renfrew County & District, based on monitoring of national and international sources, will determine which options are selected. Among the range of options are the following.

1. Regular phone calls to Community Health Centres, and emergency departments to determine the amount of influenza-like illness being seen, and to remind staff to take swabs on patients with compatible symptoms.
2. Placing a RCDHU staff member in walk-in clinics and/or emergency departments to determine the number of patients with influenza-like illness being seen and to take swabs on patients with compatible symptoms.
3. Regular phone calls to some or all school and child care centres to determine illness/absenteeism rates.
4. Regular phone calls to some or all long-term care homes to determine if there are patients/residents with respiratory illness.
5. Asking workplaces to contact RCDHU when large numbers of staff members are ill (e.g. more than 10% of staff ill). Alternatively, regular phone calls could be made to some larger workplaces to determine employee absenteeism.
6. Regular phone calls to pharmacists regarding increases in patient inquiries about cold and fever medications.

7. Monitoring of the numbers of cold and fever medications being sold by pharmacies in order to identify an increase in sales that may indicate the arrival of pandemic influenza.
8. Monitoring the number of calls to Renfrew County & District Health Unit Health Information Line related to respiratory infections in order to identify an increase in calls that may indicate the arrival of pandemic influenza.
9. Monitoring death notices to determine increases in deaths in the community or clusters of deaths from long-term care homes.
10. Regular contact with hospital infection control practitioners to determine the number of patients admitted with respiratory illness and to ensure that swabs are taken. Regular contact with the infection control practitioners would also determine the number of people in the intensive care unit with respiratory illness and the number of people on ventilators with respiratory illness, as well as the number of deaths from respiratory illness.
11. Placing RCDHU staff members in the hospitals to conduct the surveillance activities outlined in #10

## **5.0 Enhanced surveillance during a Pandemic Influenza**

Once pandemic influenza has arrived in Renfrew County & District the purpose of surveillance will be to determine the extent of transmission and the burden on the health care system. The surveillance activities previously outlined to detect the arrival of pandemic influenza remain options for surveillance once pandemic influenza has arrived.

The following information will need to be obtained:

- the number of patients seen in emergency departments/assessment centres with influenza-like illness,
- The number of hospital admissions with influenza-like illness
- The number of ventilators being used
- The number of influenza-related deaths

The Ontario Health Pandemic Influenza Plan September 2006 describes a specific Pandemic Data Collection Form For Institutions (figure 4.1) to be utilized by public health, hospitals under the Public Health Act, private hospitals, long-term care homes, retirement homes with more than 10 beds, children's residence and facilities operating under the Developmental Services Act.

## **6.0 Surveillance for use and adverse effects of antiviral drugs and vaccines**

Renfrew County & District Health Unit will be the source of distribution of most of the antiviral drugs and vaccines. Databases will need to be established to indicate where antiviral drugs and vaccines have been distributed and in what quantity. Locations with supplies of antiviral drugs and vaccines will need to be contacted on a regular basis to reinforce eligibility criteria and determine remaining quantities.

Everyone who receives an antiviral drug and/or vaccination will be reminded of the need to report adverse reactions to his/her physician or the clinic where the drug or vaccine was received. Health care workers will be reminded to report adverse events to RCDHU.



Ontario Health Plan for an Influenza Pandemic September 2006

### Pandemic Data Collection Form for Institutions: Final Report

Please FAX final report to the Ministry of Health and Long-Term Care at: [to be determined]		For MOHLTC use only _____	
<b>Health Unit Information</b>		<b>Institution Information</b>	
Outbreak #:		Institution Master #:	
Health Unit Name:		Institution Name:	
Investigator Name:		Institution Address:	
Contact Phone #:		City/Town of Institution:	
Date Outbreak Reported to Health Unit (yyyy/mm/dd):		Postal Code of Institution:	
Date Outbreak Declared Over (yyyy/mm/dd):		Date of onset of illness in first case (yyyy/mm/dd):	
Date form submitted (yyyy/mm/dd):			
<b>Institution Type</b>			
<input type="checkbox"/> Long-term Care Home		Hospital operates under Public Hospitals Act? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Retirement Home (with more than 10 residents)		Type: <input type="checkbox"/> Acute <input type="checkbox"/> Chronic <input type="checkbox"/> Psych <input type="checkbox"/> Rehab	
<input type="checkbox"/> Children's Residence		<input type="checkbox"/> Other (specify):	
<input type="checkbox"/> Facilities operating under the Developmental Services Act			
<b>Outbreak Description</b>		<b>Symptoms observed related to outbreak</b>	
	<b>Residents or Patients</b>	<b>Staff*</b>	<b>Please specify by check boxes OR free text below:</b> <input type="checkbox"/> Abnormal Temp. ( $\geq 37.5^{\circ}\text{C}$ or $\leq 35.5^{\circ}\text{C}$ or temp. known to be abnormal for that person) <input type="checkbox"/> Cough <input type="checkbox"/> Nasal Congestion/Sneezing <input type="checkbox"/> Runny nose (coryza) <input type="checkbox"/> Sore throat/Hoarseness/Difficulty swallowing <input type="checkbox"/> Tiredness (malaise) <input type="checkbox"/> Muscle aches (myalgia) <input type="checkbox"/> Loss of appetite <input type="checkbox"/> Headache <input type="checkbox"/> Chills <input type="checkbox"/> Swollen/Tender glands in neck (cervical lymphadenopathy) <b>Other Symptoms (specify):</b>
Total # in institution			
Total # cases			
# cases in facility admitted to hospital attributed to outbreak			
# cases in facility with clinically or X-Ray confirmed pneumonia			
# deaths among cases attributed to outbreak			
<b>Laboratory Data</b>			
Lab Confirmation:	<input type="checkbox"/> Yes (check causative organism/s)		<input type="checkbox"/> No (no organism/s identified) <input type="checkbox"/> Specimens NOT submitted
<input type="checkbox"/> Influenza A	<input type="checkbox"/> Influenza B	<input type="checkbox"/> RSV	
<input type="checkbox"/> Rhinovirus	<input type="checkbox"/> Parainfluenza	<input type="checkbox"/> Adenovirus	
<input type="checkbox"/> Enterovirus	<input type="checkbox"/> Other (specify):		

\*Staff: All persons who carry on activities in the facility including employees, nurses, students, medical house staff, physicians, contract workers and volunteers.