



TABLE OF CONTENTS

| | | |
|------------|--|-----|
| 4. | Surveillance | 4-2 |
| 4.1 | Objectives of Pandemic Surveillance | 4-2 |
| 4.2 | Surveillance | 4-2 |
| | 4.2.a Influenza Surveillance Activities in Ontario..... | 4-2 |
| | 4.2.b Influenza Surveillance Activities in Peterborough | 4-3 |
| | 4.2.c Enhanced Surveillance Activities During a Pandemic..... | 4-6 |
| | 4.2.d Evaluation of Enhanced Surveillance Activities After the Pandemic | 4-7 |
| 4.3 | Surveillance Communications | 4-7 |
| 4.4 | Surveillance Tools | 4-8 |

4. Surveillance

Investigators and public health officials are not simply sitting back waiting for the next pandemic. In 1948, the World Health Organization established a formal monitoring system for influenza viruses. Currently 110 laboratories in 82 countries participate... The surveillance has two purposes: first to track mutations of existing viruses to adjust each year's vaccine, and second, to search for any sign of the emergence of a new strain- a strain that might cause another pandemic.

The Great Influenza, John M. Barry

4.1 Objectives of Pandemic Surveillance

1. To detect and identify the pandemic strain early in Peterborough City and County.
2. To track the occurrence, severity, and progression of the pandemic, based on the WHO pandemic phases in order to implement appropriate public health measures.
3. To monitor influenza-like illness (ILI) using various surveillance activities to:
 - detect unusual events
 - compare new strains with vaccine composition and recommendations
 - estimate the impact of ILI (attack rate, outpatient visits, hospitalizations and case fatality rate)
 - describe the affected populations in order to identify high risk groups, modes of transmission, risk factors and protective factors
4. To share surveillance information, in a timely fashion, with all key stakeholders (i.e., hospital, emergency control groups, emergency medical services, physicians, nurse practitioners, pharmacies, long term care facilities) to help identify disease, guide prevention, institute control measures and evaluate treatment, prophylaxis and education.

4.2 Surveillance

Surveillance is the continuous and systematic process of collecting, analyzing, interpreting and disseminating descriptive information to monitor public health and ensure timely interventions to reduce morbidity and mortality.

4.2.a Influenza Surveillance Activities in Ontario

Comprehensive surveillance for influenza in Ontario includes:

- Laboratory/Virology Surveillance: isolating or analyzing influenza viruses and diagnosing influenza

Section 4: Surveillance

- Disease/Epidemiologic Surveillance: monitoring disease activity levels, subpopulations at risk, hospitalization rates, case fatality rates
- Animal Health Surveillance: detecting respiratory outbreaks in domestic and wild animals
- Vaccine and Antiviral Uptake Surveillance: monitoring, evaluating and reallocating vaccine/antivirals stocks and modifying guidelines for their use
- Adverse Event Surveillance: detecting unusual adverse events related to vaccine and antiviral use
- Data Collection Systems: providing an efficient way to collect information (Integrated Public Health Information System)
- Analysis of Surveillance Data: to provide information that will be used to guide and trigger pandemic plans
- Effective Lines of Communication: defining robust lines of communication, in advance, between the local, provincial, federal and global levels of government

iPHIS will support timely reporting of data from public health units to the MOHLTC, and from the MOHLTC to PHAC, and from the MOHLTC back to public health units and back to health care providers. Data will be collected by public health staff and entered into iPHIS as directed by the MOHLTC and/or as stated in the MOHLTC Infectious Diseases protocol.

The MOHLTC will provide daily information about the severity and disruption of the pandemic based on surveillance information (e.g., labs, Telehealth and sentinel physician reports). This information will be discussed at the public health teleconferences each day, and used to inform the public and to develop the Important Health Notices that will be issued at midnight.

For more details on surveillance activities in Ontario, go to Section 5 of the OHIPIP at www.health.gov.on.ca/pandemic.

4.2.b Influenza Surveillance Activities in Peterborough

Effective influenza surveillance relies on close collaboration and clear communication between the PCCHU and key community stakeholders. The Medical Officer of Health has the overall responsibility for surveillance activities in Peterborough County and City.

Current communicable disease surveillance activities used by the PCCHU to monitor respiratory diseases in the area are as follows:

- **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. Specimens are tested for influenza at the Provincial Laboratory in Peterborough. Private medical laboratories in Peterborough City and

Section 4: Surveillance

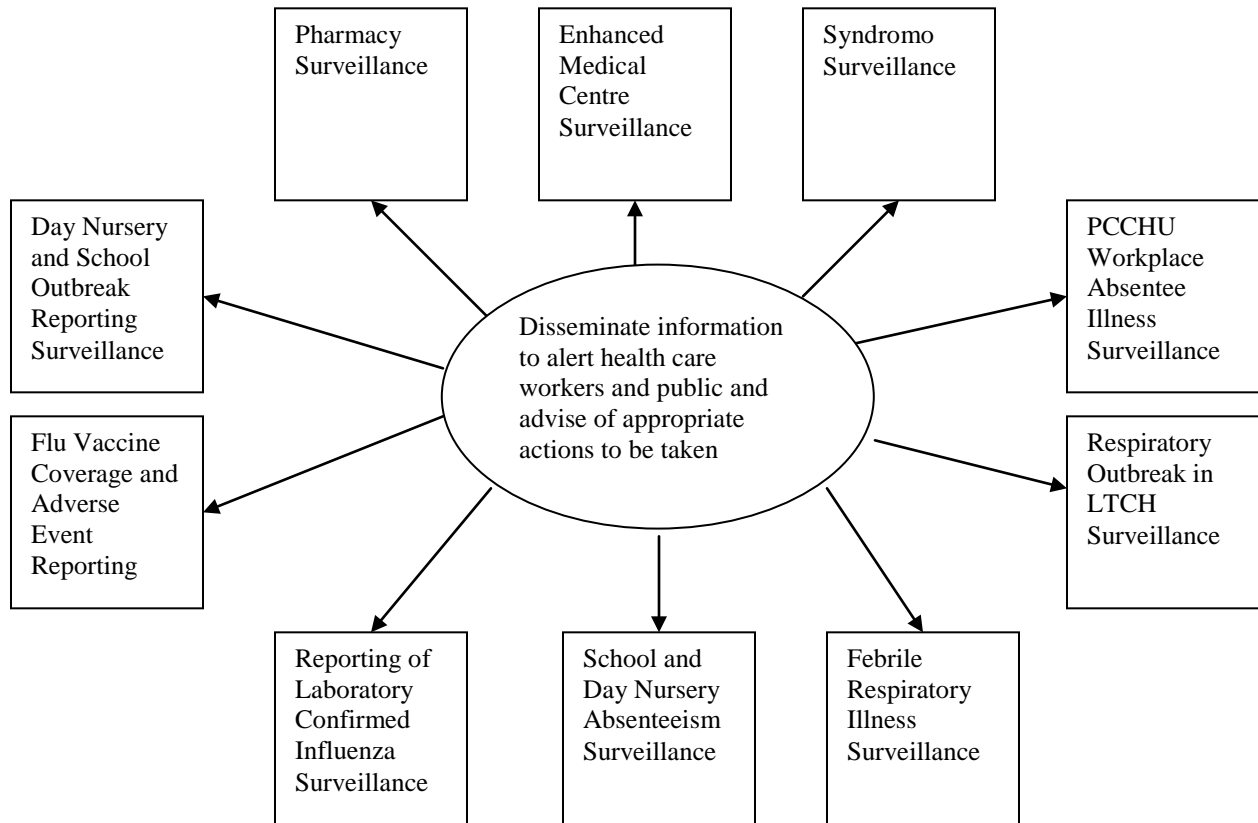
County are also required to report influenza. Reports of positive test results are forwarded to the Health Unit. The PCCHU investigates the cases and the information is entered into the MOHLTC Integrated Public Health Information System (iPHIS). iPHIS will support timely reporting of communicable disease data from the PCCHU to the MOHLTC and from the MOHLTC to the Public Health Agency of Canada (PHAC). Influenza is under-reported since many people do not seek medical attention and few health care providers take swabs for influenza. Therefore, laboratory confirmed cases represent only a small fraction of influenza cases in the community.

- **Influenza outbreaks in institutions:** Long term care facilities and the hospital are required to report confirmed or suspected outbreaks of respiratory illness to the Health Unit. They are to report when they see an increase in respiratory symptoms compared to the normal institutional profile. Swabs are taken from ill residents in order to identify if an influenza outbreak is occurring in the facility. The Health Unit investigates outbreaks and advises the facilities to institute control measures to limit the spread of the outbreak. These recommended control measures include the cohorting of staff, increasing cleaning and sanitizing of common surfaces, ensuring all staff and residents have been immunized, encouraging hand hygiene, restriction of visitors, etc. Influenza in institutions is the most reliable indicator of influenza activity in the community.
- **School and day nursery absenteeism:** Children are usually the first to be affected by the arrival of influenza and they are responsible for much of the early transmission in the community. School absenteeism is a good indicator of influenza activity. Schools in Peterborough City and County are asked to monitor and report increases in absences that may be related to influenza-like illness. The local boards of education forward absentee data to the PCCHU electronically. This information is reviewed by the PCCHU epidemiologist and trends are reported to the Medical Officer of Health and Infectious Diseases program Manager. Local elementary and secondary schools contact the Health Unit when absenteeism due to influenza-like illness is greater than 10% or 15% respectively. Day nurseries report absenteeism greater than 10% to the Health Unit.
- **Syndromic surveillance:** In Peterborough, data is collected from individuals visiting the local emergency department of the Peterborough Regional Health Centre (PRHC) who are experiencing specific symptoms. The information is entered into a database. By establishing baseline statistics, increases and/or decreases can be identified and/or investigated. Reports and graphs are prepared.
- **Enhanced surveillance by medical clinics:** The Health Unit is partnering with a large medical clinic in the community in order to monitor increases in clients with selected symptoms to detect clusters or outbreaks. This is an active reporting system. The PCCHU contacts physicians in this clinic by telephone weekly in order to monitor influenza-like illness.

Section 4: Surveillance

- **Pharmacy surveillance:** In Peterborough, Pharmacy Surveillance is used to collect data on over-the-counter medication sales data. Since over-the-counter medication is taken before individuals seek medical care, this information may serve as an early indicator of community-wide outbreaks and would supplement current surveillance systems in Peterborough. Pharmacies fax a form to the Health Unit advising that they have, subjectively, noticed an increase in over-the-counter medication.
- **Febrile respiratory illness surveillance:** As an early detection system for the Sudden Acute Respiratory Syndrome (SARS) and other respiratory illnesses, health care settings are required to screen all clients who present for care. The guidelines are included in the MOHLTC document, 'Best Practices for Preventing Febrile Respiratory Illnesses (FRI): Protecting Patients and Staff' (see http://www.health.gov.on.ca/english/providers/program/infectious/diseases/ic_fri.html). Screening questions ask about fever and a new onset of cough or shortness of breath. A client with both fever and a new onset of respiratory symptoms or worsening of existing symptoms is required to be placed under certain precautions to prevent the spread of infection. Health care settings report clusters of respiratory illness to the PCCHU. Positive cases of FRI that have traveled to a country with a health alert are reported to the MOHLTC and investigated by the Health Unit.
- **Day nursery and school outbreaks:** Day nurseries and schools report suspected respiratory outbreaks to the Health Unit. The Health Unit investigates these outbreaks and recommends control measures to limit the spread of the outbreak.
- **Influenza vaccine coverage and adverse event reporting:** The influenza vaccination coverage rate for the City and County of Peterborough is estimated using the Health Unit clinic statistics, the Peterborough Regional Health Centre clinic statistics, and the amount of vaccine distributed to area health care facilities/offices. Data on adverse events in Peterborough will be forwarded to the MOHLTC.
- **PCCHU workplace absentee illness surveillance:** The PCCHU management collects symptom information on employees who report absences (or a full day of their regularly scheduled hours) covered by the Health Unit short term disability plan. The symptoms are limited to fever, cough, headache, vomiting, diarrhea, and rash. The onset date of the first symptom is also collected. Data is summarized by the Epidemiologist for distribution to the Medical Officer of Health or designate.

Current Disease Surveillance Activities at the Peterborough County-City Health Unit



4.2.c Enhanced Surveillance Activities During a Pandemic

During a pandemic, the above surveillance activities may be enhanced. For example:

- Syndromo surveillance data from the hospital emergency department may be reported daily
- Enhanced surveillance of medical clinics may be conducted daily
- Pharmacy surveillance may be augmented to detect increases sales of cold and fever medications per day instead of weekly
- Febrile respiratory illness surveillance screening may be active instead of passive and the tool will be revised

Section 4: Surveillance

Additional PCCHU surveillance activities during a pandemic will include:

- The PCCHU may request staff and residents of local poultry and swine farms to report respiratory illness to the Health Unit.
- The PCCHU may be asked to participate in animal health surveillance to detect respiratory outbreaks in domestic and wild animals, particularly in swine, poultry and other fowl.
- Antiviral uptake in Peterborough will be forwarded to the MOHLTC so that they will be able to monitor, evaluate, and (if necessary), reallocate antiviral stocks, and modify guidelines for their use. Antiviral susceptibility monitoring may also be conducted to evaluate sensitivity and resistance in circulating influenza strains.
- Large workplaces may be asked to collect and report when they notice increases in staff absenteeism (>10%) related to influenza-like activity.
- The PCCHU will assess influenza activity weekly. This information will be faxed to the MOHLTC. During a pandemic, this activity may be performed daily.
- Sentinel physicians will be recruited by the College of Family Physicians of Canada (CFPC) by census divisions throughout the country, including Peterborough. The goal is to have one sentinel physician per 250,000 population. Sentinel physicians will collect nasopharyngeal specimens from symptomatic patients on designated days of the week. The specimens will be submitted for testing and sub-typing.

During a pandemic, Peterborough may reduce or curtail some surveillance activities, so resources can be devoted to enhancing or adding activities that will help understand the nature of the virus and its spread, and the impact of antivirals and vaccine.

4.2.d Evaluation of Enhanced Surveillance Activities After the Pandemic

The PCCHU will evaluate the data collected from the surveillance activities during and after the pandemic.

4.3 Surveillance Communications

Effective influenza surveillance is based on close collaboration and communication among local, provincial, federal and international health authorities. Information must flow into the surveillance system, and from the surveillance system to health care workers and decision makers. The PCCHU will ensure that information and analysis of surveillance activities will be reported to key local health stakeholders. Surveillance information will inform key health stakeholders of the need to continue

Section 4: Surveillance

or curtail surveillance activities and/or to implement control measures. Refer to the Communications Section of the PCCHU Pandemic Influenza plan for more details on mechanisms to disseminate pertinent surveillance data.

4.4 Surveillance Tools

The MOHLTC and the Public Health Agency of Canada have prepared the following surveillance tools:

- Preliminary/Weekly Institutional Respiratory Infection Outbreak Form
- Final Institutional Respiratory Infection Outbreak Form
- Surveillance Activities by Level and by Pandemic Period and Phase

See Section 5a, Surveillance Tools OHPIP at www.health.gov.on.ca/pandemic.