

For Information

DATE: October 13, 2011

REPORT TITLE: **ENHANCED SURVEILLANCE SYSTEMS FOR INFECTIOUS DISEASES IN PEEL REGION**FROM: Janette Smith, Commissioner of Health Services  
David L. Mowat, MBChB, MPH, FRCPC, Medical Officer of Health**OBJECTIVE**

To inform of Peel Public Health's enhanced surveillance activities to detect infectious diseases and emerging threats to the Region of Peel.

**REPORT HIGHLIGHTS**

- Peel Public Health has implemented two cost-neutral enhanced surveillance systems to facilitate early detection of infectious disease outbreaks and emerging threats: monitoring of school absenteeism and surveillance of emergency department visits.
- Peel Public Health has been receiving real-time emergency department data from William Osler Health Centre (Brampton Civic) since March 2011. Credit Valley Hospital and Trillium Health Centre (Mississauga) are expected to participate starting fall 2011.
- Currently, emergency room data are monitored for outbreak detection; the value of these data for monitoring air quality, injuries and other health events will be evaluated.
- Existing partnerships with Peel Regional school boards and hospitals have been strengthened in the development and implementation of these surveillance systems.

**DISCUSSION****1. Background**

Several significant public health emergencies over the past decade including SARS, Walkerton, West Nile Virus, measles outbreaks and most recently, the influenza pandemic (H1N1) in 2009 have alerted public health to the critical need for early warning systems.

The foundation of the current surveillance program for communicable diseases is the province-wide integrated Public Health Information System (i-PHIS). For this system, the initial source of the data is predominantly from positive laboratory notifications of reportable diseases.

Initial indications of disease outbreaks often occur earlier than a definitive diagnosis by a physician or laboratory. In influenza for example, an individual will first develop symptoms, then stay home from work or school, attempt to self-treat with over-the-counter medications,

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and then eventually see a physician or go to the emergency room with non-specific symptoms before they are formally diagnosed and reported to Peel Public Health.

To identify these types of behaviours and prompt early detection of outbreaks, in 2009, Peel Public Health implemented two enhanced surveillance systems: monitoring of school absenteeism and hospital surveillance. Data from these systems were used to detect wave two of the H1N1 pandemic and triggered the opening of Peel's influenza assessment centres.

### 2. Peel Public Health Surveillance Systems

Under the Ontario Public Health Standards (2008), all public health units are mandated by the Ministry of Health and Long-Term Care to conduct surveillance. The outcomes of public health surveillance include rapid detection of unusual events in order to trigger a timely public health response. Monitoring of surveillance data also facilitates the identification of high-risk groups for targeted interventions (e.g. immunization campaigns) and can provide evidence for assessing and evaluating public health programs and policies.

#### a) School Absenteeism Surveillance

Initiated in the 2009/10 school year in preparation for H1N1, this surveillance system is a collaboration between Peel Public Health and the Peel District School Board to monitor and collect data on student absenteeism.

Nine schools in the Region of Peel (4 in Mississauga, 4 in Brampton, 1 in Caledon) are currently participating in this project and were selected to ensure that absenteeism information represented various communities. The School Board reports to Peel Public Health on a daily basis the number of student absences and the number of absences due to respiratory, gastrointestinal, or other illness. Peel Public Health communicates with the Board and schools if there is any public health action to be taken.

Reporting of student absenteeism was successful in the early identification of a gastroenteritis outbreak in 2010. Timely public health response, including provision of infection control messaging to the school, was likely a key factor in controlling the outbreak.

#### b) Emergency Department Syndromic Surveillance

Initiated in 2004, the Ministry of Health and Long-Term Care funded the development of a surveillance system to monitor emergency department (ED) visits. The goals of this Emergency Department Syndromic Surveillance system are to monitor changes and trends in disease with a focus on respiratory and gastrointestinal illness.

The surveillance system presently monitors ED visits in real-time at 55 hospitals across Ontario including William Osler Health Centre (Brampton Civic), where the system was implemented in March 2011. Together, these hospitals span six Local Health Area Networks (LHINs) which encompass 18 health units.

Information from each ED visit is captured in 'real time' by the Emergency Department Syndromic Surveillance system, within minutes of a patient being seen in triage. The system generates an alert to notify Peel Public Health of any significant increases, which are then investigated by Peel Public Health's Surveillance Team to determine whether public health follow-up is required.

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Peel Public Health is monitoring the ED surveillance system to detect the start of the 2011/12 influenza season. While Brampton Civic is currently the only participating hospital in Peel Region, Credit Valley Hospital and Trillium Health Centre are expected to join in fall 2011.

**CONCLUSION**

With the recent implementation of these cost-neutral enhanced surveillance systems, Peel Public Health has enhanced its ability to detect and monitor infectious disease threats. Public Health will continue to ensure that the residents of the Region of Peel have access to information and measures to prevent illness in a more timely way. In addition, existing partnerships with Peel Regional school boards and hospitals have been strengthened in the development and implementation of these surveillance systems.



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**Approved for Submission:**



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