

H3N2 influenza strain predominates and predicted to peak in 3-4 weeks

Attention: Physicians, Long-Term Care Facilities, Rest & Retirement Homes, Emergency Departments, Nurse Practitioners, Walk-In Clinics/Urgent Care Clinics, Family Health Teams, Infection Control Practitioners, Occupational Health Professionals, Midwives, NSM LHIN, Central LHIN, County of Simcoe Paramedic Services, Medavie EMS Ontario – Muskoka, Rama Mnjikaning EMS

Date: December 16, 2014

Influenza activity has started to increase in Simcoe Muskoka and throughout Ontario. It is still early in the annual flu season but influenza A (H3N2) viruses have been reported more frequently than other strains.

From September 1 to December 10, 2014, there have been ten lab-confirmed flu cases in Simcoe Muskoka, of which eight were influenza A. Four of these cases were reported during the week of November 30 to December 6, which represents a lab testing percentage positivity of 5% for influenza A compared to the provincial 13.6%.

Past seasons in which influenza A (H3N2) viruses have predominated have resulted in higher overall and age-specific hospitalization rates and higher mortality rates. This is most commonly seen amongst older people, very young children, and persons with certain chronic medical conditions compared with seasons during which influenza A (H1N1) or influenza B viruses have predominated. The most recent example is in 2012-13 when there was a significant surge in emergency department visits and hospital admissions in Ontario, which also coincided with the holiday season. It appears from the acute care enhanced surveillance system (ACES) available at <http://aces.kflaphi.ca/iliMapper/> which monitors over 100 hospitals in Ontario in real time that the situation may be similar this year.

Additionally, there is some evidence of antigenic drift of the circulating H3N2 strain. The United States Center for Disease Control reported in a recent Health Advisory that 48% of the influenza A (H3N2) viruses collected and analyzed in the U.S. were antigenically "like" the 2014-2015 influenza A (H3N2) vaccine component, but that 52% were antigenically different (drifted) from the H3N2 vaccine virus (<http://emergency.cdc.gov/han/han00374.asp>). The Public Health Agency of Canada has done similar analysis and has noticed a drift in a small sample of strains (http://www.phac-aspc.gc.ca/fluwatch/14-15/w48_14/pdf/fw2014-48-eng.pdf). In Canada, up until the end of November, eight out of ten A/H3N2 strains tested did not match the vaccine strain. Antigenic drift may lead to decreased vaccine effectiveness; however, the U.S. CDC advises that vaccination has been found to provide some protection against drifted viruses. "Though reduced, this cross-protection might reduce the likelihood of severe outcomes such as hospitalization and death. In addition, vaccination will offer protection against circulating influenza strains that have not undergone significant antigenic drift from the vaccine viruses (including the influenza A (H1N1) and B viruses)".

For current surveillance information in regards to the circulation of influenza and other respiratory viruses, please note the following weekly reports issued by Public Health Ontario:

Ontario Respiratory Virus Bulletin contains information about influenza activity and can be found at:

<http://www.publichealthontario.ca/en/ServicesAndTools/SurveillanceServices/Pages/Ontario-Respiratory-Virus-Bulletin.aspx>

Laboratory Based Respiratory Pathogen Surveillance Reports contain information including circulating respiratory pathogens and influenza percent positivity by health unit and can be found at:

<http://www.publichealthontario.ca/en/ServicesAndTools/LaboratoryServices/Pages/PHO-Laboratories-surveillance-updates.aspx>

Recommendations for Health Care Providers:

- Clinicians should encourage all patients six months and older who have not yet received an influenza vaccine this season to be vaccinated against influenza as soon as possible.
- It is anticipated that the peak in influenza activity will be in three to four weeks and then decline slowly to baseline in February.
- The Health system is likely to start to have a significant surge in visits to the Emergency departments and admissions to hospital, including the need for intensive care beds, starting now and peaking in three to four weeks. This peak will last for around a two week period. There may be significant pressure for admission and critical care beds.
- Primary care facilities and urgent care clinics are encouraged to keep offices open during the holiday season to accommodate the anticipated increase in influenza activity and to help alleviate some of the burden on emergency departments.
- Long-Term Care Homes and Retirement Homes: Because of the A/H3N2 antigenic drift, it is recommended that vaccinated staff members be offered antiviral medication during an influenza A outbreak. This is in addition to the usual recommendation for unvaccinated staff members to receive antiviral medication during an influenza outbreak. These settings should contact their local public health unit for more information regarding antiviral prophylaxis recommendations for all staff and available reimbursement processes.
- Consider timely administration of antivirals (e.g. Oseltamivir or Zanamivir) to persons at high risk for influenza complications presenting with influenza symptoms, regardless of immunization status, particularly in the coming weeks when it is expected that influenza activity will increase and peak. Additional information about at-risk groups and antiviral use can be found in the Association of Medical Microbiology and Infectious Disease Canada (AMMI Canada) document entitled *The use of antiviral drugs for influenza: A foundation document for practitioners* (<http://www.ammi.ca/guidelines>). A clinical algorithm may be found at:

http://www.ammi.ca/media/60810/Flu_Algorithm.pdf

Antivirals are recommended for:

- those with influenza-like illness severe enough to require hospitalization; and
- individuals with influenza-like illness at higher risk of complications from influenza infection as follows:
 - children aged younger than 5 years;
 - adults 65 years of age and older;
 - persons with chronic pulmonary (including asthma), cardiovascular (except hypertension alone), renal, hepatic, hematological (including sickle cell disease) or metabolic disorders (including diabetes mellitus), or neurologic and neurodevelopment conditions;
 - persons with immunosuppression, including that caused by medications or by HIV infection;
 - women who are pregnant or postpartum (within four weeks after delivery);
 - Aboriginal people;
 - persons aged younger than 18 years who are receiving long-term aspirin therapy;
 - persons who are morbidly obese (i.e. body-mass index is equal to or greater than 40).