



FluWatch

December 28, 2008 to January 3, 2009 (Week 53)

Overall influenza activity in Canada remains low; an influenza outbreak in a hospital was reported in Ontario

During week 53, influenza activity in Canada remained low overall with the majority of the influenza surveillance regions still reporting no activity. Sixteen regions (in BC, AB, ON & QC) reported sporadic influenza activity and localized activity was reported in 2 regions (central region in AB and in Toronto, ON) (see map). Note that no data for 2 regions in SK were received this week. Eighty-seven specimens tested positive for influenza in Canada this week (percentage positive = 3.3%; 87/2,633) (see table). The majority of influenza virus detections to date this season were influenza A viruses (54% or 165/304); however influenza B detections have slowly increased over the last several weeks. In week 53, the ILI consultation rate increased to 23 ILI consultations per 1,000 patient visits (see ILI graph), however it remains below the expected range for this week. The sentinel response rate was low at 37%. An outbreak of influenza in a hospital in ON was reported in week 53.

Other Respiratory Viruses: RSV detections for Canada as a whole continue to increase while detections for adenoviruses and parainfluenza viruses remain at fairly low levels (see graph).

Antigenic Characterization:

Since 1 September 2008, the NML has antigenically characterized 33 influenza viruses: 10 influenza A/Brisbane/59/2007(H1N1)-like (from BC, AB, ON & NS), 1 influenza A/Brisbane/10/2007(H3N2)-like (from BC), 3 influenza B/Florida/4/2006-like (from ON and AB) and 19 B/Malaysia/2506/2004-like (from ON and AB). A/Brisbane/59/2007(H1N1), A/Brisbane/10/2007(H3N2) and B/Florida/4/2006 are the influenza A and influenza B components recommended for the 2008-09 influenza vaccine. B/Malaysia/2506/2004 was the influenza B component for the 2007-2008 season vaccine. (see pie chart)

Antiviral Resistance:

Results from the NML:

Since the start of the season, the NML has tested 12 influenza A isolates (6 H1N1 and 6 H3N2) for amantadine resistance. All of the H1N1 isolates were susceptible; however all of the H3N2 isolates were resistant to amantadine (resistance = 100% or 6/6). The resistant isolates were from ON, AB and BC.

The NML has also tested 24 influenza isolates (5 A/H1N1, 2 A/H3N2 & 17 B) for oseltamivir (Tamiflu) resistance. All of the A/H3N2 and B isolates were sensitive; however all of the A/H1N1 isolates were resistant to oseltamivir due to the H274Y mutation (resistance = 100% or 5/5). The resistant isolates were from NS, ON and BC.

All 22 influenza isolates (3 A/H1N1, 2 A/H3N2 & 17 B) tested for zanamivir resistance to date were sensitive to zanamivir.

Oseltamivir resistance findings from Provincial laboratories:

To date this season, 24 influenza isolates in BC have been sub-typed as A/H1 and were assessed genotypically for oseltamivir resistance using an SNP assay. Eighteen isolates tested positive for the H274Y mutation (resistance = 100% or 18/18), with the other 6 specimens still pending confirmatory testing.

Influenza-associated Paediatric Hospitalizations:

No laboratory-confirmed influenza-associated paediatric hospitalizations have been reported through the Immunization Monitoring Program Active (IMPACT) network for the 2008-09 season.

International:

WHO: During the weeks 51 to 52, the overall level of influenza activity in the world began to increase in some countries in Europe. Activity in many other countries remained low. The majority of viruses identified this season have been influenza A (H3N2). <<http://www.who.int/csr/disease/influenza/update/en/>>

EISS: Influenza activity continued to increase with most countries in western and central Europe reporting influenza activity of medium intensity. Most of the influenza virus detections so far have been for influenza A viruses of which the majority were A(H3). Of the 56 A(H3N2) isolates that were also tested for adamantanes susceptibility, all were resistant. Of the 30 A(H1N1) virus isolates tested for resistance against neuraminidase inhibitors, 29 were resistant to oseltamivir (resistance=97%), but all were sensitive to zanamivir. <http://www.eiss.org/cgi-files/bulletin_v2.cgi>

Human Avian Influenza: Since 6 January 2009, the WHO has reported two new cases of human H5N1 avian influenza infection. The first case was an 8-year-old female from Thanh Hoa province, Vietnam who developed symptoms on 27 December 2008, was hospitalized on 2 January 2009 and is currently in a stable condition. The second case was a 19-year-old female from Chaoyang District, Beijing, China who developed symptoms on 24 December 2008, was hospitalized and died on 5 January 2009. Both cases had contact with poultry prior to their illness.

<http://www.who.int/csr/disease/avian_influenza/en/index.html>

**Total number of influenza tests performed and number of positive tests
by province/territory of testing laboratory, Canada, 2008-2009**

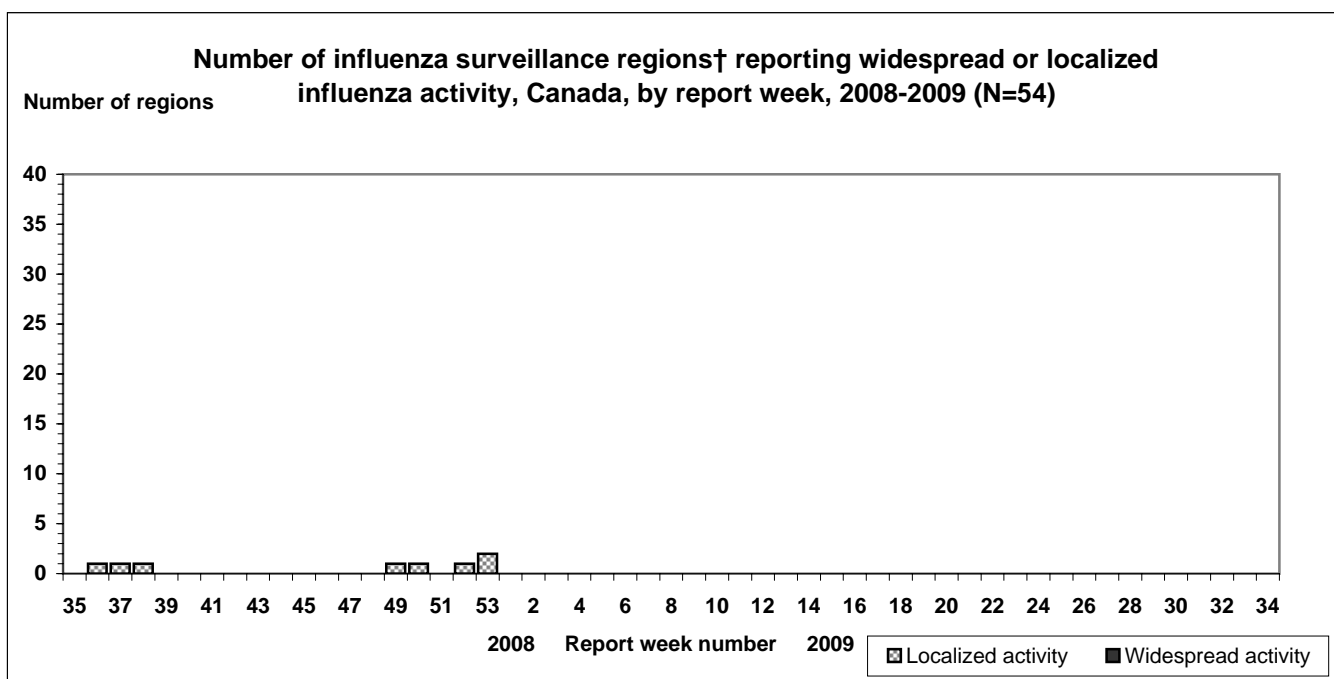
| Province of reporting laboratories | Report Period: December 28, 2008 to January 3, 2009 | | | | Season to Date: August 24, 2008 to January 3, 2009 | | | |
|------------------------------------|---|---------------------|-------------|-----------|--|---------------------|-------------|------------|
| | Total # of influenza | # of positive tests | | | Total # of influenza | # of positive tests | | |
| | | Influenza A | Influenza B | Total | | Influenza A | Influenza B | Total |
| NL | 21 | 0 | 0 | 0 | 183 | 0 | 0 | 0 |
| PE | 7 | 0 | 0 | 0 | 67 | 0 | 0 | 0 |
| NS | 18 | 0 | 0 | 0 | 288 | 1 | 0 | 1 |
| NB | 20 | 0 | 0 | 0 | 196 | 0 | 0 | 0 |
| QC | 763 | 9 | 1 | 10 | 7081 | 52 | 4 | 56 |
| ON | 919 | 5 | 37 | 42 | 9002 | 23 | 73 | 96 |
| MB | 49 | 0 | 0 | 0 | 840 | 0 | 0 | 0 |
| SK | 128 | 0 | 0 | 0 | 1402 | 0 | 0 | 0 |
| AB | 654 | 20 | 6 | 26 | 8074 | 42 | 61 | 103 |
| BC | 54 | 9 | 0 | 9 | 699 | 47 | 1 | 48 |
| Canada | 2633 | 43 | 44 | 87 | 27832 | 165 | 139 | 304 |

Specimens from NT, YT, and NU are sent to reference laboratories in other provinces.

Note: Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add up to cumulative totals.

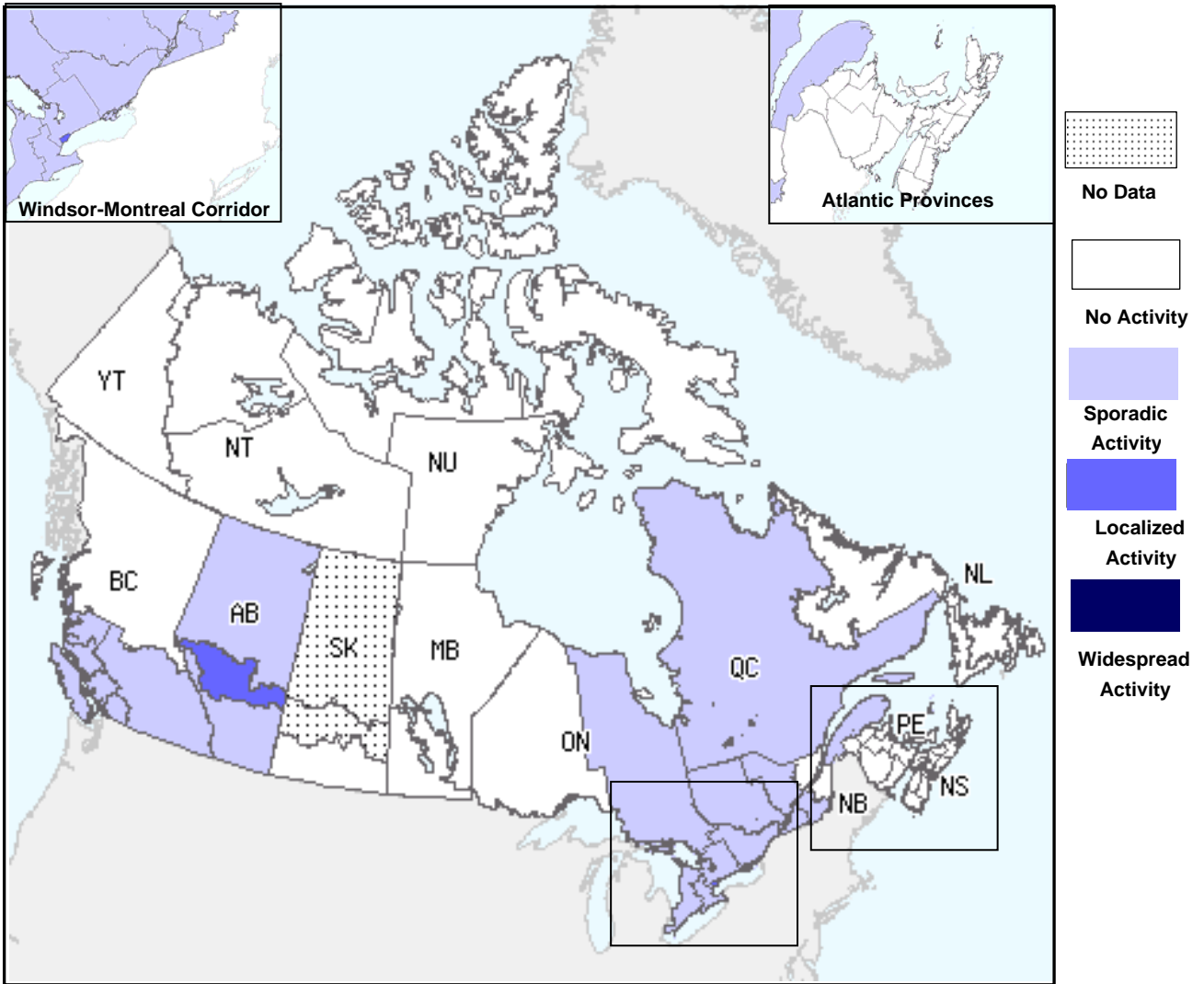
Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU)

Respiratory virus laboratory detections in Canada, by geographic regions, are available weekly on the following website:
<<http://www.phac-aspc.gc.ca/bid-bmi/dsd-dsm/rvdi-divr/index-eng.php>>

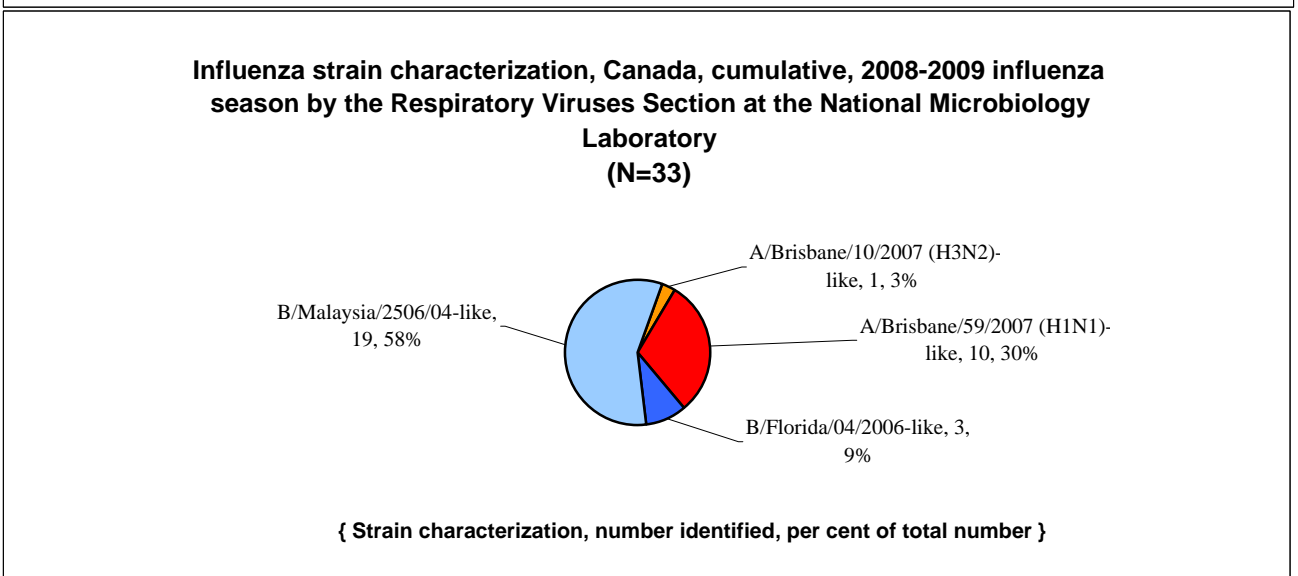
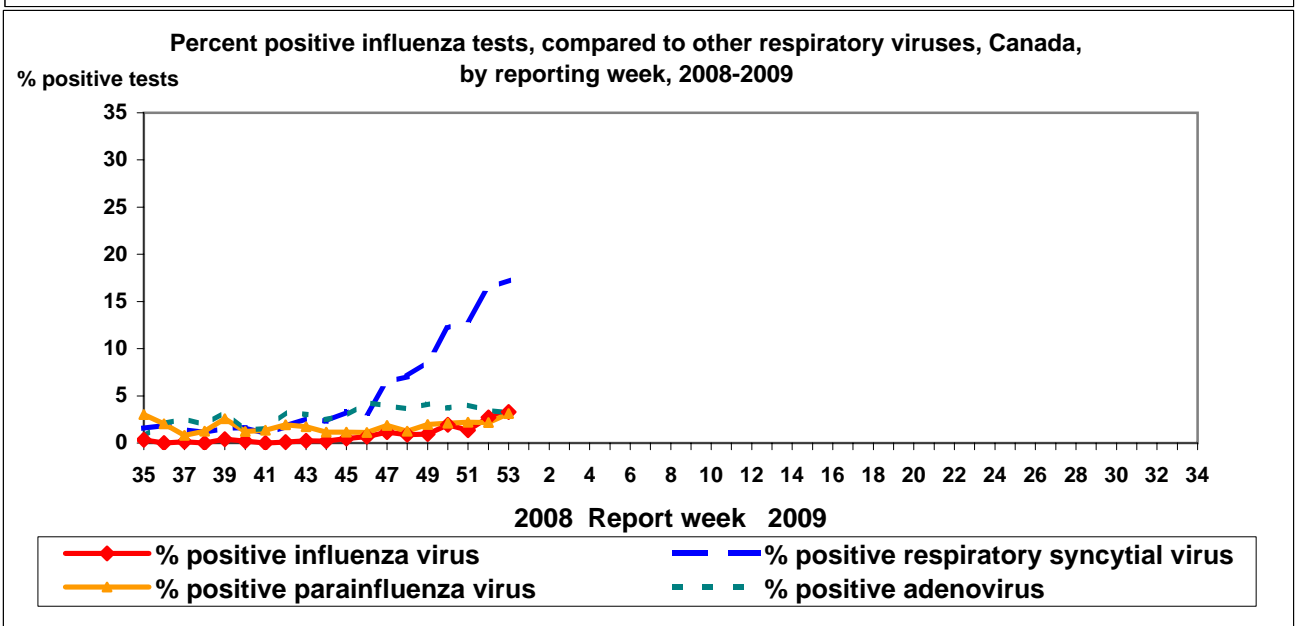
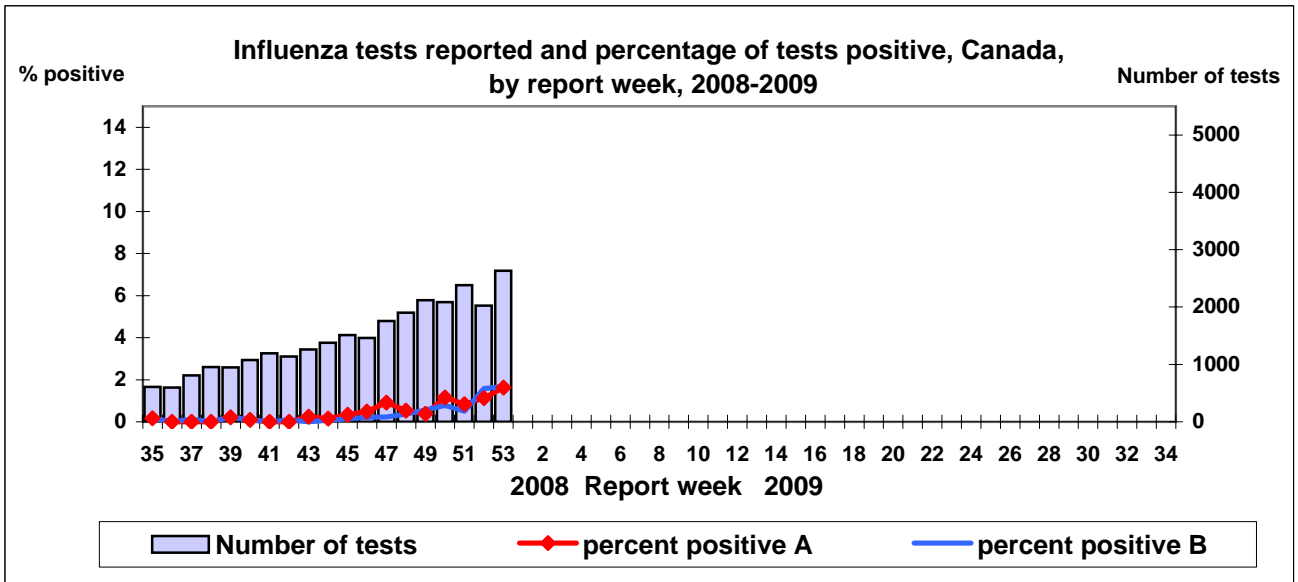


† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

**Influenza Activity Level by Provincial and Territorial Influenza Surveillance Regions,
Canada; December 28, 2008 to January 3, 2009 (Week 53)**

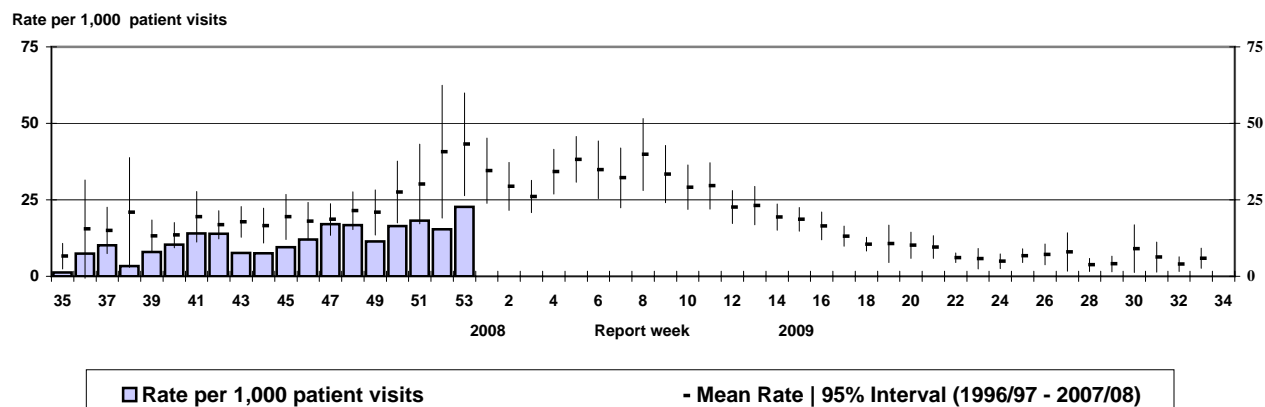


Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, **based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and outbreaks.** Please refer to detailed definitions on the last page. For areas where no data is reported, late reports from these provinces and territories will appear on the FluWatch website. Select single maps by report week to get this updated information. <<http://dsol-smed.hc-sc.gc.ca/dsol-smed/fluwatch/fluwatch.phtml?lang=e>>



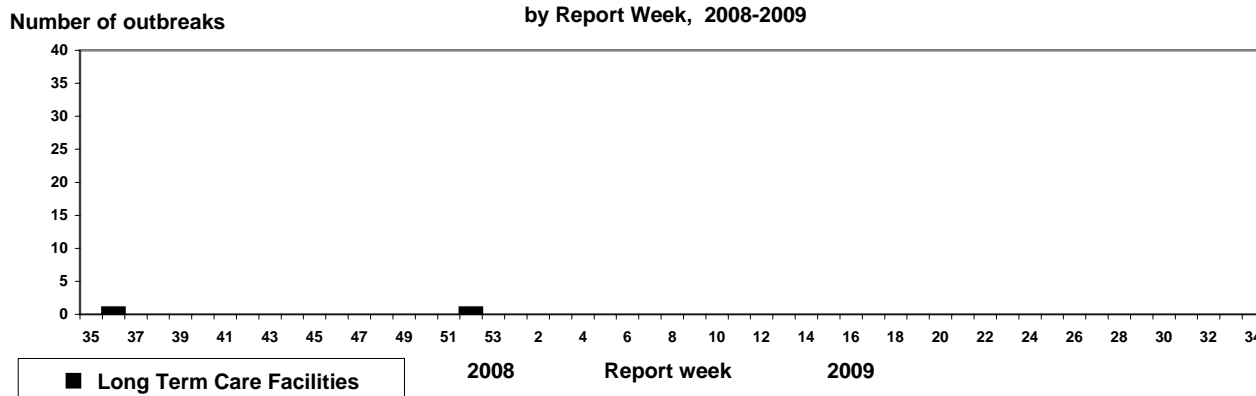
NACI recommends that the trivalent vaccine for the 2008-2009 season in Canada contain A/Brisbane/59/2007 (H1N1)-like virus; an A/Brisbane/10/2007 (H3N2)-like virus; and a B/Florida/4/2006-like virus.

**Influenza-like illness (ILI) consultation rates, Canada, by report week,
2008-2009 compared to 1996/97 through to 2007/08 seasons**



Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons).

**Number of New Outbreaks in Long Term Care Facilities, Canada,
by Report Week, 2008-2009**



FluWatch reports include data and information from five main sources: laboratory reports of positive influenza tests in Canada; sentinel physician reporting of influenza-like illness (ILI); provincial/territorial assessment of influenza activity based on various indicators, including laboratory surveillance, ILI reporting, school and work site absenteeism, and outbreaks; influenza-associated pediatric hospitalizations; WHO and other international reports of influenza activity. The map shows influenza activity in the "influenza surveillance regions" † within each jurisdiction, as determined by the provincial/territorial epidemiologists.

ILI definitions for the 2008-2009 season

ILI in the general population: Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which could be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

Definitions of ILI/Influenza outbreaks for the 2008-2009 season

Schools and work sites: greater than 10% absenteeism on any day most likely due to ILI

Residential institutions: two or more cases of ILI within a seven-day period, **including at least one laboratory confirmed case.**

Institutional outbreaks should be reported within 24 hours of identification.

Influenza Activity levels are defined as:

1 = No activity: i.e. no laboratory-confirmed influenza detections during the past four weeks, however, sporadically occurring ILI may be reported

2 = Sporadic: sporadically occurring **ILI and lab confirmed influenza* with NO outbreaks** detected within the influenza surveillance region†

3 = Localized: sporadically occurring **ILI and lab confirmed influenza* together with outbreaks of ILI** in schools and worksites or laboratory confirmed influenza in residential institutions occurring in less than 50% of the influenza surveillance region(s)†

4 = Widespread: sporadically occurring **ILI and lab confirmed influenza* together with outbreaks of ILI** in schools and worksites or laboratory confirmed influenza in residential institutions occurring **in greater than or equal to 50% of the influenza surveillance region(s)†**

* confirmation of influenza within the surveillance region at any time within the prior four weeks

† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist

We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.

This report is available on the Public Health Agency website at the following address: <http://www.phac-aspc.gc.ca/fluwatch/index.html>

Ce rapport est disponible dans les deux langues officielles. Pour en recevoir un exemplaire dans l'autre langue chaque semaine, veuillez communiquer avec Estelle Arseneault, Division de l'immunisation et des infections respiratoires au (613) 952-8484