



# FluWatch

December 7, 2008 to December 13, 2008 (Week 50)

## Overall influenza activity in Canada remains low; localized activity reported in a region in British Columbia

During week 50, influenza activity in Canada remained low overall with the majority of the influenza surveillance regions still reporting no activity. Fifteen regions (in BC, AB, ON & QC) reported sporadic influenza activity and one region in BC (Fraser) reported localized activity this week (see map). Thirty specimens tested positive for influenza in Canada this week (percentage positive = 1.8%; 30/1,671) (see table). The majority of influenza virus detections to date this season were influenza A viruses (59% or 71/120). In week 50, the ILI consultation rate was 16 ILI consultations per 1,000 patient visits (see ILI graph), and is below the expected range for this week. The sentinel response rate was 61%. One outbreak of influenza was reported in a school in BC this week.

### Antigenic Characterization:

Since 1 September 2008, the NML has antigenically characterized 16 influenza viruses: 1 influenza A/Brisbane/59/2007(H1N1)-like (from NS), 2 influenza A/Brisbane/10/2007(H3N2)-like (from BC & ON), 3 influenza B/Florida/4/2006-like (from ON and AB) and 10 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 8 influenza A isolates (3 H1N1 and 5 H3N2) for amantadine resistance. All of the H1N1 isolates were susceptible; however all of the H3N2 isolates were resistant to amantadine (resistance = 100% or 5/5). The resistant isolates were from ON, AB and BC.

The NML has also tested 16 influenza isolates (3 A/H1N1, 2 A/H3N2 & 11 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 3/3). The resistant isolates were from NS and BC.

All 12 influenza isolates (1 A/H1N1, 2 A/H3N2 & 9 B) tested for zanamivir resistance to date were sensitive to zanamivir.

#### Oseltamivir resistance findings from Provincial laboratories:

To date this season, 19 influenza isolates in BC have been sub-typed as A/H1 and were assessed genotypically for oseltamivir resistance using an SNP assay. Fourteen isolates tested positive for the H274Y mutation, while the other 5 were indeterminate. These specimens were from community-based cases of ILI; none were associated with an outbreak.

### 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 47 to 48, the level of overall influenza activity in the world remained low with sporadic activity observed in some countries. <<http://www.who.int/csr/disease/influenza/update/en/>>

**CDC:** During week 49, a low level of influenza activity was reported in the United States. Three states reported local influenza activity however the majority reported either no activity or sporadic activity. Of the 2,585 specimens tested this week for influenza viruses, 72 (2.8%) were positive. Since 1 October 2008, the CDC has antigenically characterized 36 influenza viruses: 20 influenza A(H1) (all A/Brisbane/59/2007-like), 3 A(H3) (all A/Brisbane/10/2007-like) and 13 influenza B (4 were B/Florida/04/2006-like belonging to the B/Yamagata lineage and the other 9 belonged to the B/Victoria lineage). Since 1 October, 2008, 68 influenza viruses (46 A(H1N1), 7 A(H3N2), and 15 B) have been tested for resistance to neuraminidase inhibitors. Of the A(H1N1) viruses tested, 98% (45/46) were resistant to oseltamivir however all were sensitive to zanamivir. All of the A(H3N2) and B viruses tested were sensitive to both oseltamivir and zanamivir. The CDC tested 30 influenza A viruses (25 H1, 5 H3) for amantadine resistance: all of the H1N1 viruses were sensitive to amantadine however all the H3N2 viruses were resistant. <<http://www.cdc.gov/flu/weekly/>>

**EISS:** In week 50, influenza activity reached medium intensity in several European countries and has been reported as increasing in several others. There is currently widespread activity in England (UK) and Portugal and outbreaks were reported in France and Spain. Most of the influenza virus detections so far have been for influenza A viruses of which the majority were A(H3). Of the 26 A(H3N2) isolates that were also tested for adamantanes susceptibility, all were resistant. Of the 20 A(H1N1) virus isolates tested for resistance against neuraminidase inhibitors, 19 were resistant to oseltamivir (resistance=95%), but all were sensitive to zanamivir.

<[http://www.eiss.org/cgi-files/bulletin\\_v2.cgi](http://www.eiss.org/cgi-files/bulletin_v2.cgi)>

**Human Avian Influenza:** Since 12 December 2008, the WHO has reported two new cases of human H5N1 avian influenza infection. The first case was a 19-year-old male from Kendal Province, Cambodia who developed symptoms on 28 November and is currently hospitalized. The second case was a 16-year-old female from Assuit Governorate, Egypt who developed symptoms on 8 December, was hospitalized on 11 December and died on 15 December. <[http://www.who.int/csr/disease/avian\\_influenza/en/index.html](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**

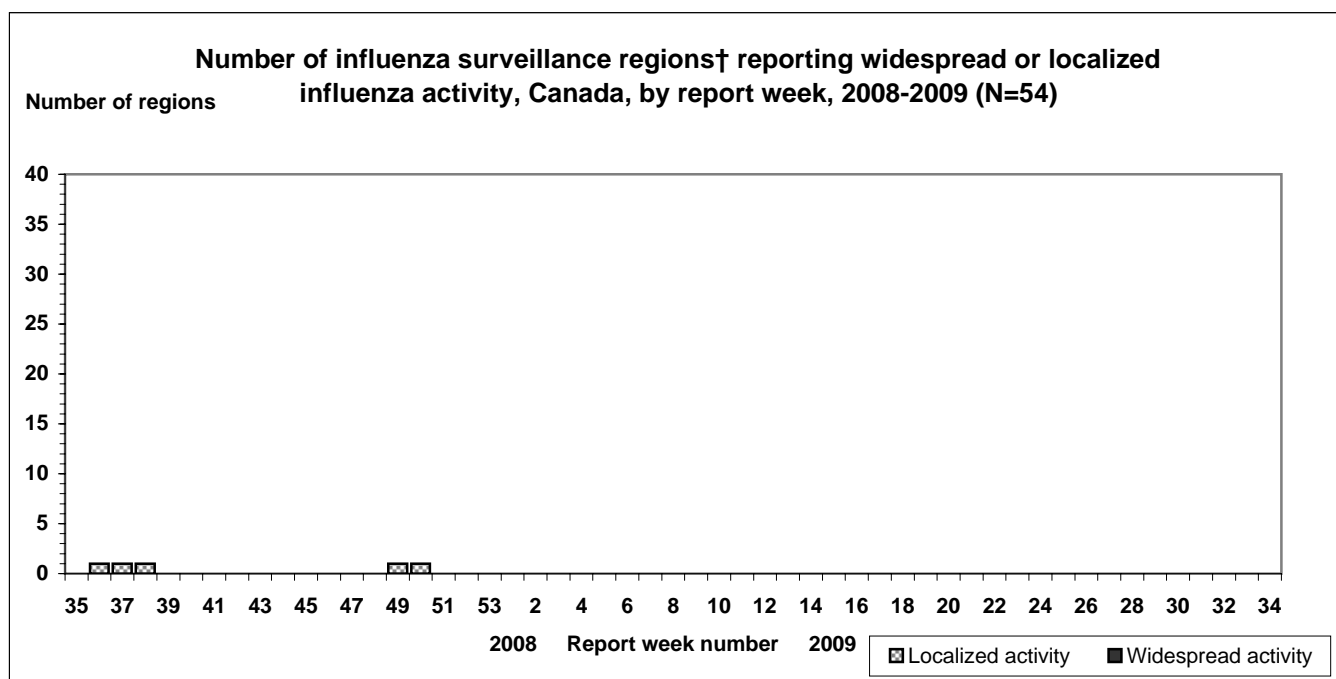
Province of reporting laboratories	Report Period: December 7, 2008 to December 13, 2008				Season to Date: August 24, 2008 to December 13, 2008			
	Total # of influenza	# of positive tests			Total # of influenza	# of positive tests		
		Influenza A	Influenza B	Total		Influenza A	Influenza B	Total
NL	21	0	0	0	124	0	0	0
PE	0	0	0	0	38	0	0	0
NS	21	0	0	0	210	1	0	1
NB	27	0	0	0	148	0	0	0
QC	590	3	0	3	5077	34	2	36
ON	254	0	2	2	6134	6	5	11
MB	52	0	0	0	711	0	0	0
SK	111	0	0	0	1118	0	0	0
AB	550	5	12	17	6315	9	41	50
BC	45	8	0	8	498	21	1	22
<b>Canada</b>	<b>1671</b>	<b>16</b>	<b>14</b>	<b>30</b>	<b>20373</b>	<b>71</b>	<b>49</b>	<b>120</b>

*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.

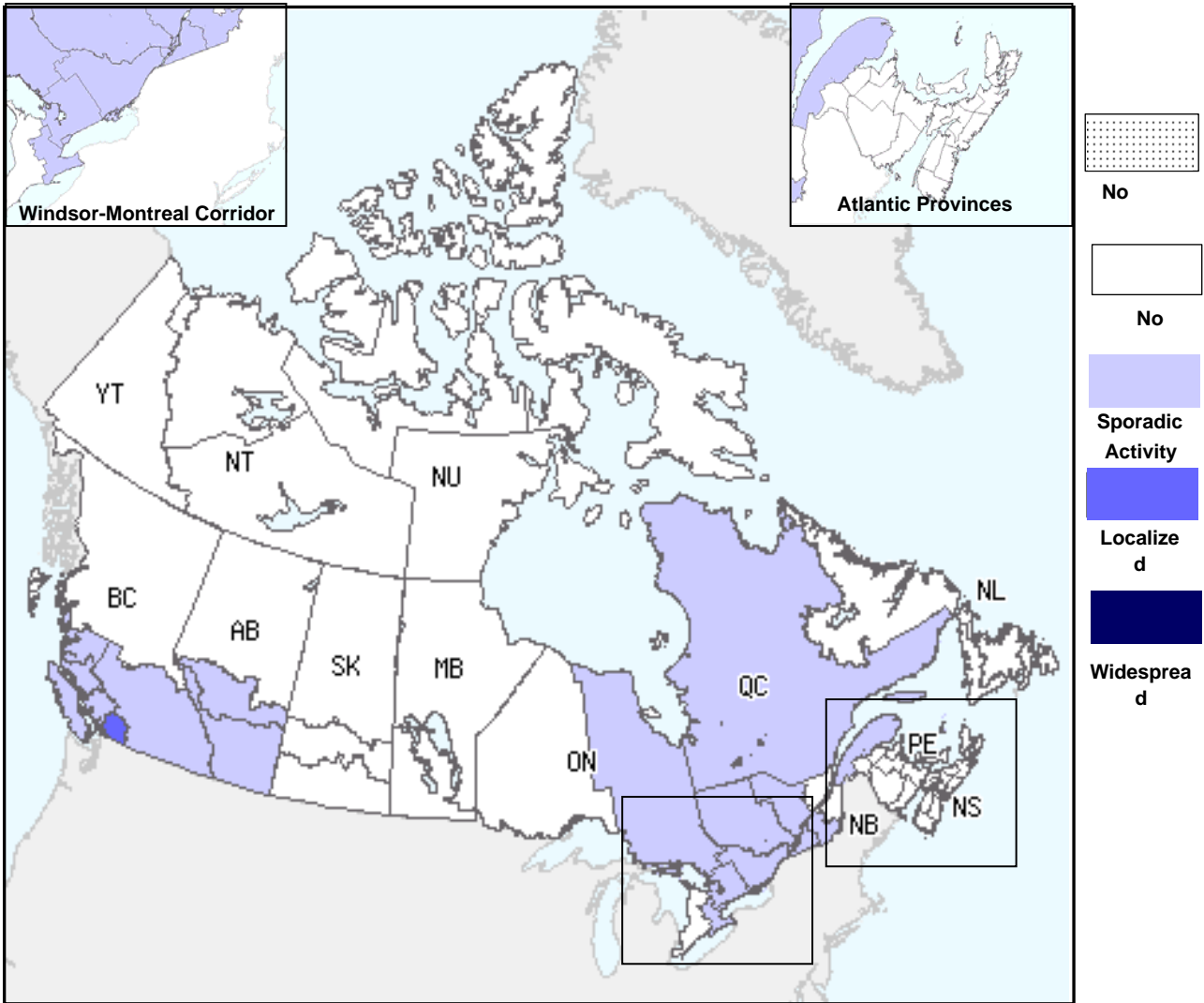
**Abbreviations:** Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU)

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>>

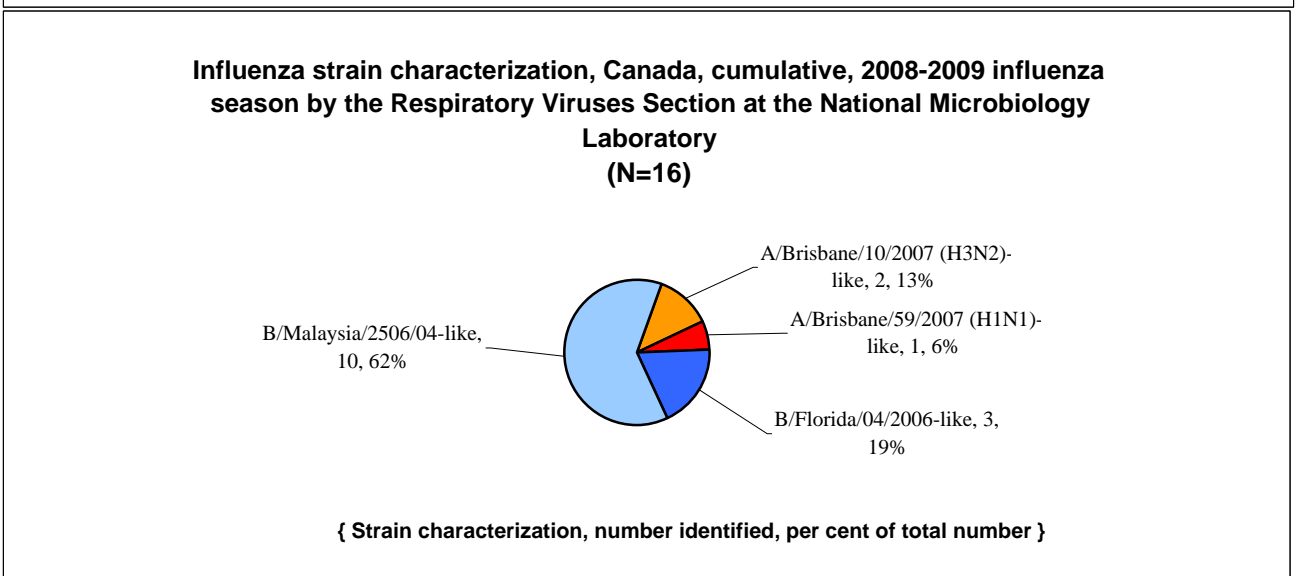
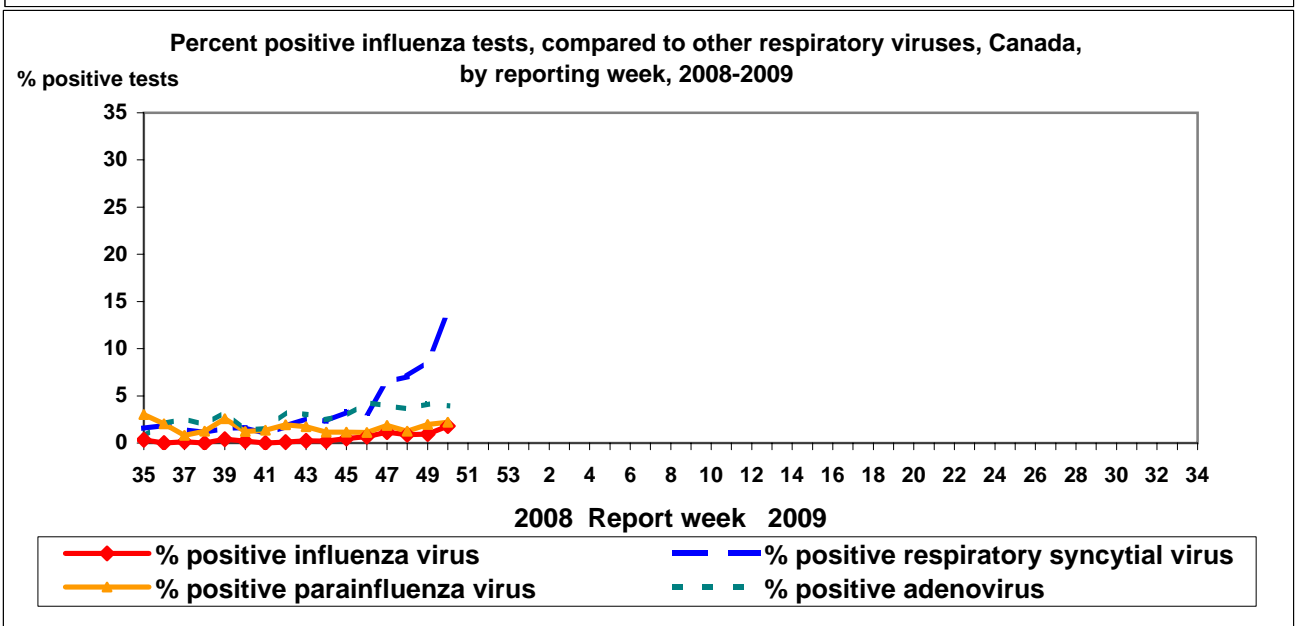
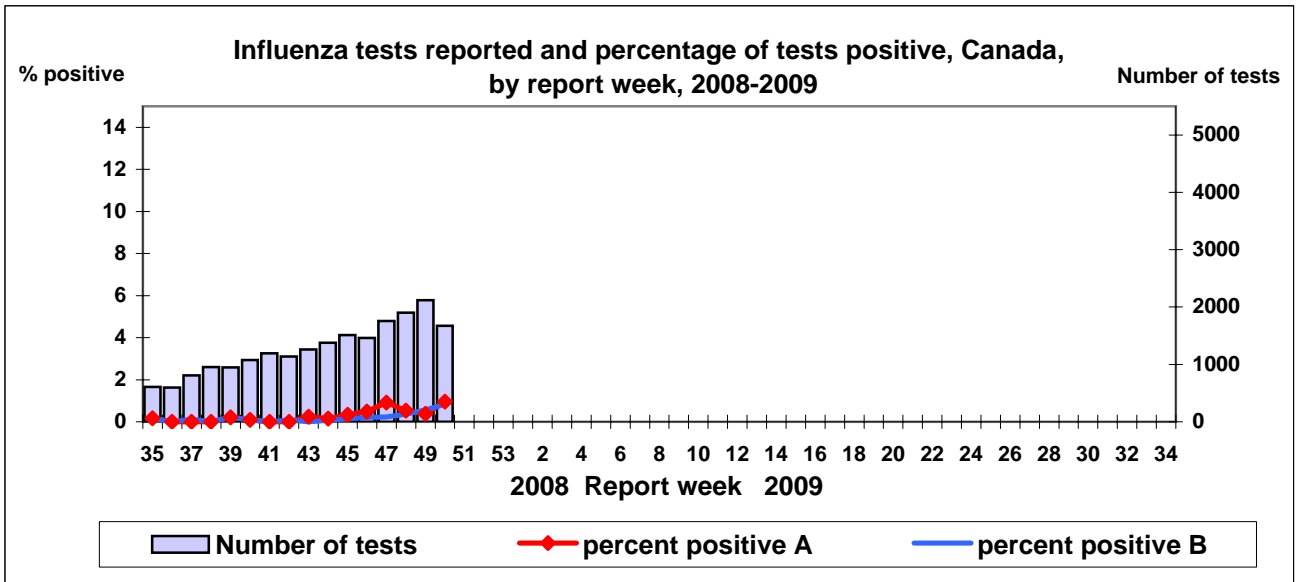


† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

**Influenza Activity Level by Provincial and Territorial Influenza Surveillance Regions,  
Canada; December 7, 2008 to December 13, 2008 (Week 50)**

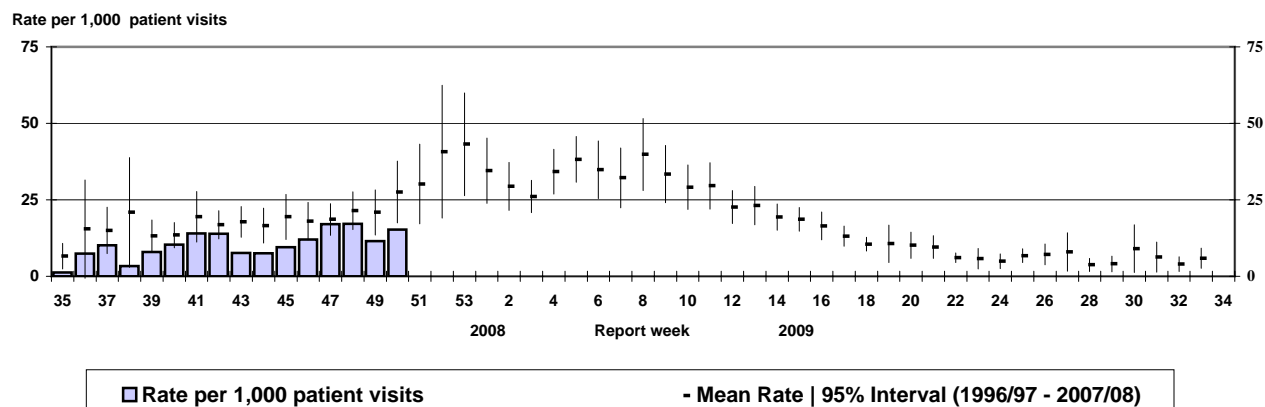


**Note:** Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, **based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and outbreaks.** Please refer to detailed definitions on the last page. For areas 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>>



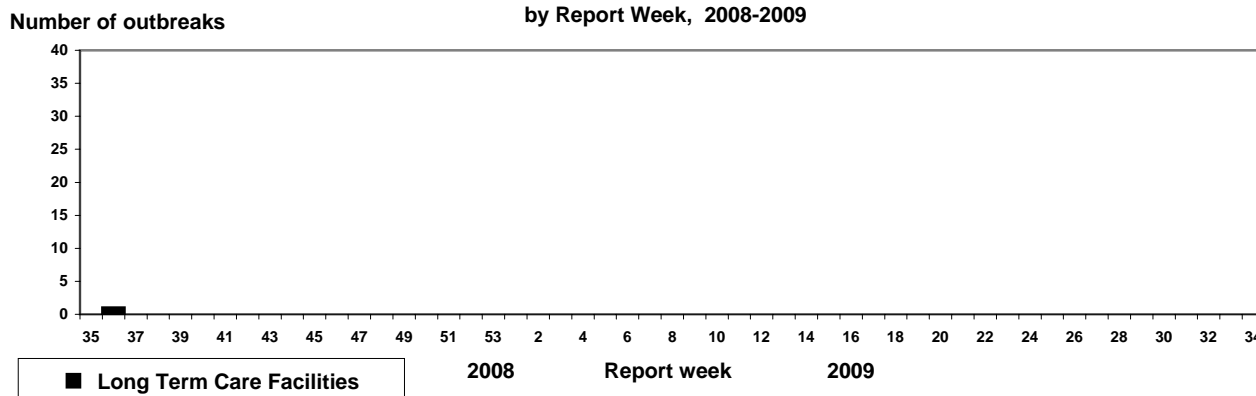
NACI recommends that the trivalent vaccine for the 2008-2009 season in Canada contain A/Brisbane/59/2007 (H1N1)-like virus; an A/Brisbane/10/2007 (H3N2)-like virus; and a B/Florida/4/2006-like virus.

**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*