



# FluWatch

January 4, 2009 to January 10, 2009 (Week 01)

## Overall influenza activity in Canada remains low

During week 01, influenza activity in Canada remained low overall with the majority of the influenza surveillance regions still reporting no activity. Nineteen regions (in NT, BC, AB, ON, QC & NB) reported sporadic influenza activity and localized activity was reported in 3 regions (in SK and in ON) (see map). The proportion of tests that were positive for influenza continued to increase steadily with a percentage positive of 3.6% (118/3,306) this week (see table). The majority of influenza virus detections to date this season were influenza A viruses (54% or 223/414); however influenza B detections have slowly increased over the last several weeks. In week 01, the ILI consultation rate declined slightly from the previous week to 18 ILI consultations per 1,000 patient visits (see ILI graph), and it remains below the expected range for this week. The sentinel response rate was 64%. In week 01, 2 new influenza outbreaks were reported (1 LTCF outbreak in ON and 1 other outbreak in SK).

**Other Respiratory Viruses:** RSV detections for Canada as a whole in week 01 remain high; however the percent positive for this week is slightly less than observed in the previous week. Detections for adenoviruses and parainfluenza viruses remain at fairly low levels (see graph).

### Antigenic Characterization:

Since 1 September 2008, the NML has antigenically characterized 69 influenza viruses: 16 influenza A/Brisbane/59/2007(H1N1)-like (from BC, AB, ON & NS), 2 influenza A/Brisbane/10/2007(H3N2)-like (from BC & ON), 4 influenza B/Florida/4/2006-like (from AB & ON) and 47 B/Malaysia/2506/2004-like (from QC, ON & 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 23 influenza A isolates (16 H1N1 and 7 H3N2) for amantadine resistance. All of the H1N1 isolates were susceptible; however all of the H3N2 isolates were resistant to amantadine (resistance = 100% or 7/7). The resistant isolates were from ON, AB and BC.

The NML has also tested 51 influenza isolates (15 A/H1N1, 2 A/H3N2 & 34 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 15/15). The resistant isolates were from NS, ON, AB and BC.

All 47 influenza isolates (11 A/H1N1, 2 A/H3N2 & 34 B) tested for zanamivir resistance to date were sensitive to zanamivir.

#### Oseltamivir resistance findings from Provincial laboratories:

To date this season, 37 influenza isolates in BC have been sub-typed as A/H1 and were assessed genotypically for oseltamivir resistance using an SNP assay. Twenty-eight isolates tested positive for the H274Y mutation (resistance = 100% or 28/28), with the other 9 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:

**CDC:** During week 53, influenza activity in the United States remained at approximately the same level as in the previous week. More states reported regional and local influenza activity compared to previous weeks, however the majority still reported either no activity or sporadic activity. Of the 2,488 specimens tested this week for influenza viruses, 79 (3.2%) were positive. Since 1 October 2008, the CDC has antigenically characterized 110 influenza viruses: 68 influenza A(H1) (all A/Brisbane/59/2007-like), 13 A(H3) (all A/Brisbane/10/2007-like) and 29 influenza B (9 were B/Florida/04/2006-like belonging to the B/Yamagata lineage and the other 20 belonged to the B/Victoria lineage). Since 1 October, 2008, 142 influenza viruses (88 A(H1N1), 14 A(H3N2), and 40 B) have been tested for resistance to neuraminidase inhibitors. Of the A(H1N1) viruses tested, 98% (86/88) 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 102 influenza A viruses (88 H1, 14 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:** Influenza activity continued to spread across Europe with most countries now reporting 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 93 A(H3N2) isolates that were also tested for adamantanes susceptibility, 88 (95%) were resistant. Of the 52 A(H1N1) virus isolates tested for resistance against neuraminidase inhibitors, 51 were resistant to oseltamivir (resistance=98%), 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 10 January 2009, the WHO has reported 1 new case of human H5N1 avian influenza infection from Egypt. The case was a 21-month-old female from Kerdasa District who developed symptoms on 9 January 2009, was hospitalized on 10 January and is currently in a stable condition. Investigations into the source of her infection indicate a recent history of contact with sick and dead poultry. <[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**

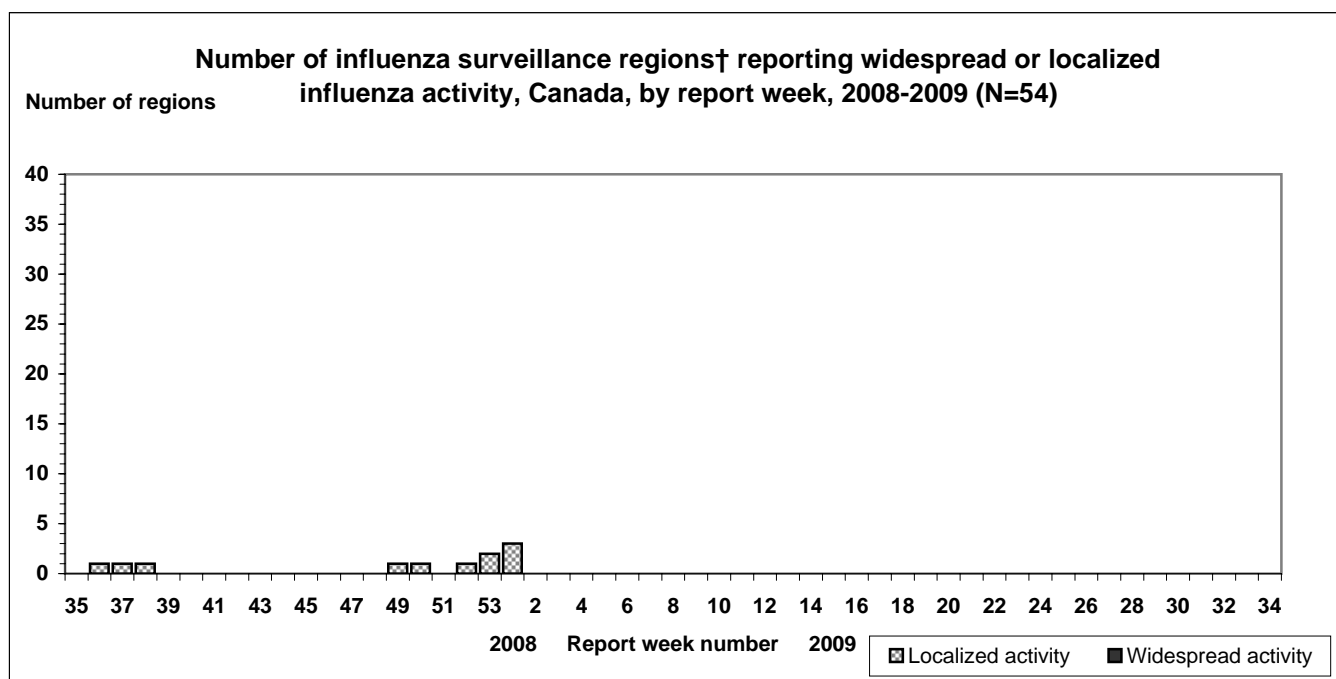
Province of reporting laboratories	Report Period: January 4, 2009 to January 10, 2009				Season to Date: August 24, 2008 to January 10, 2009			
	Total # of influenza	# of positive tests			Total # of influenza	# of positive tests		
		Influenza A	Influenza B	Total		Influenza A	Influenza B	Total
NL	22	0	0	0	205	0	0	0
PE	7	0	0	0	63	0	0	0
NS	27	0	0	0	285	1	0	1
NB	30	1	0	1	226	1	0	1
QC	874	13	1	14	7955	65	5	70
ON	1138	21	45	66	10109	44	118	162
MB	99	0	1	1	939	0	1	1
SK	186	3	0	3	1588	3	0	3
AB	833	16	3	19	8907	58	64	122
BC	90	12	2	14	744	51	3	54
<b>Canada</b>	<b>3306</b>	<b>66</b>	<b>52</b>	<b>118</b>	<b>31021</b>	<b>223</b>	<b>191</b>	<b>414</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.

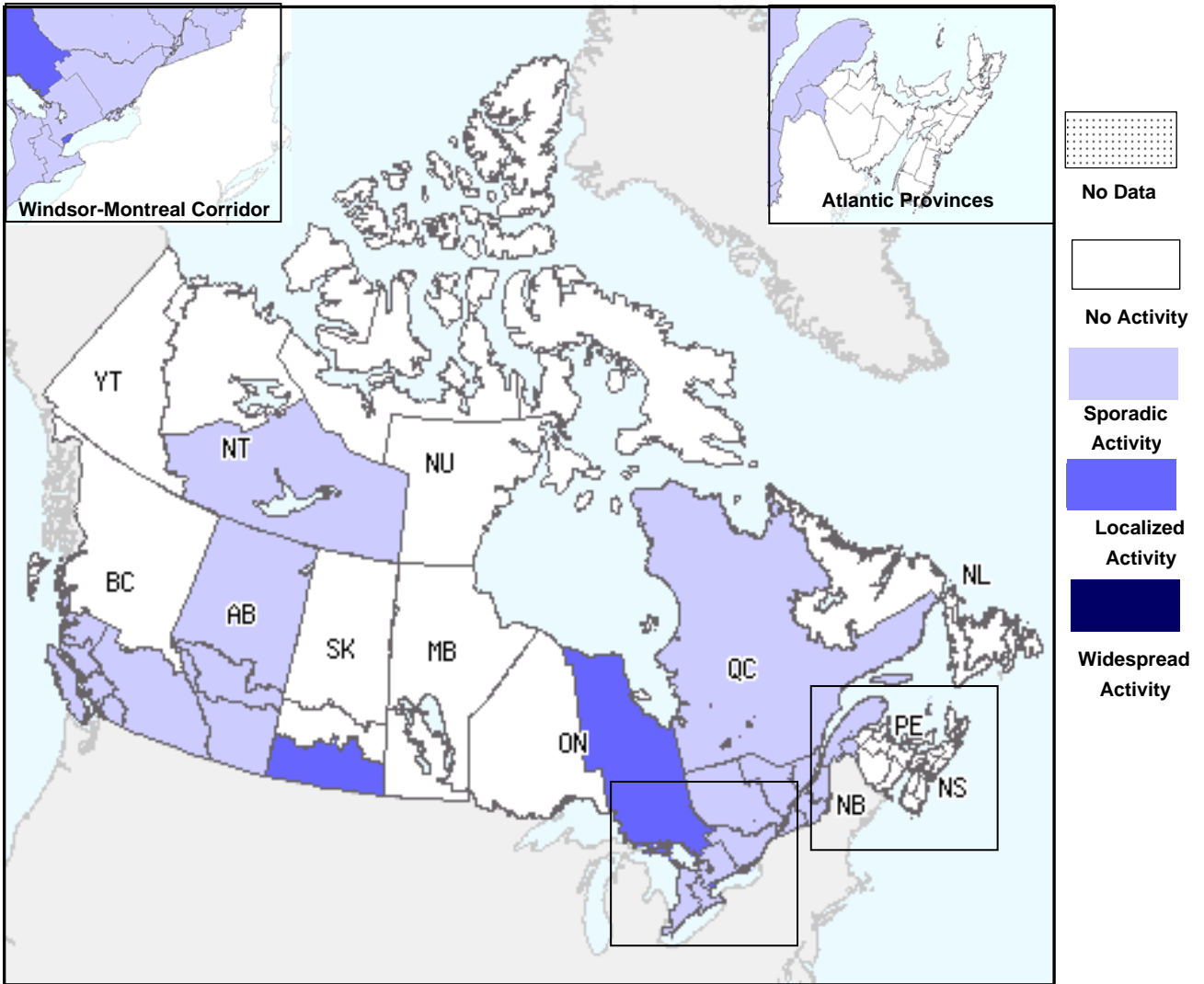
**Abbreviations:** Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU)

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>>

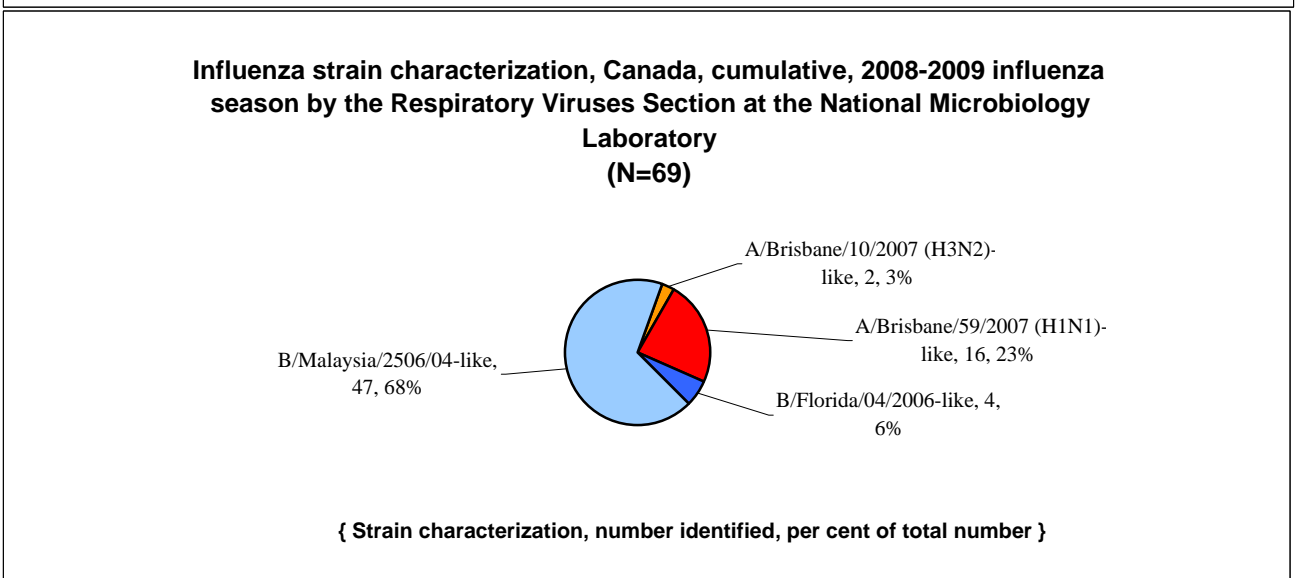
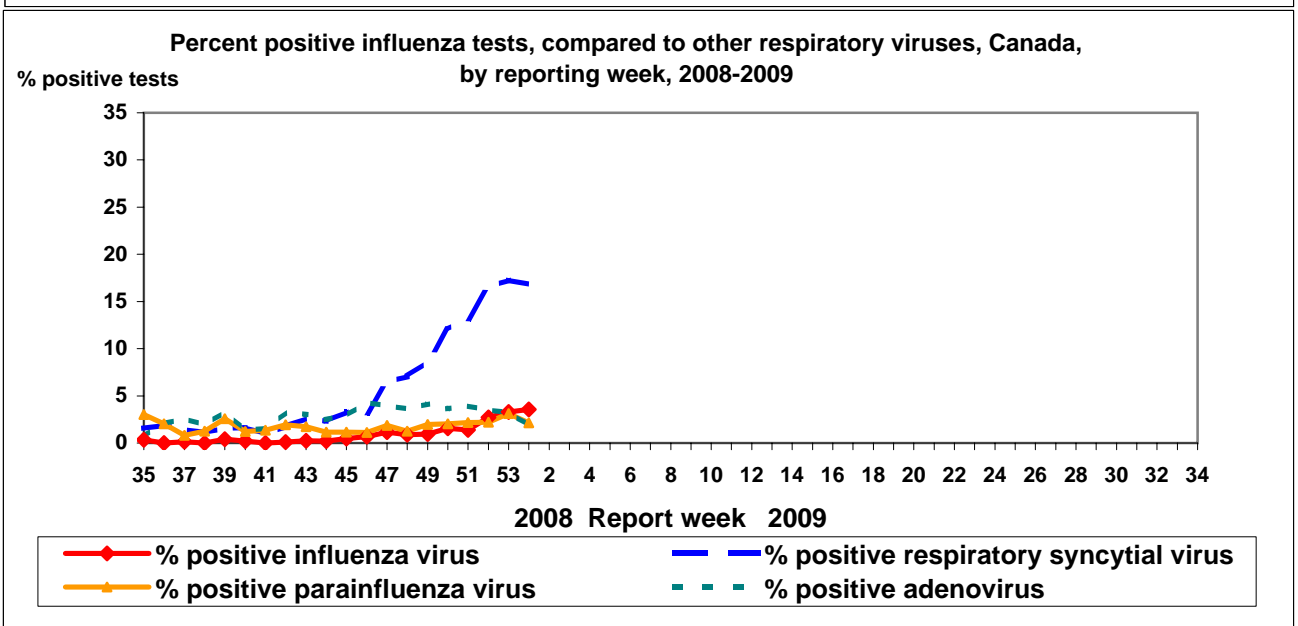
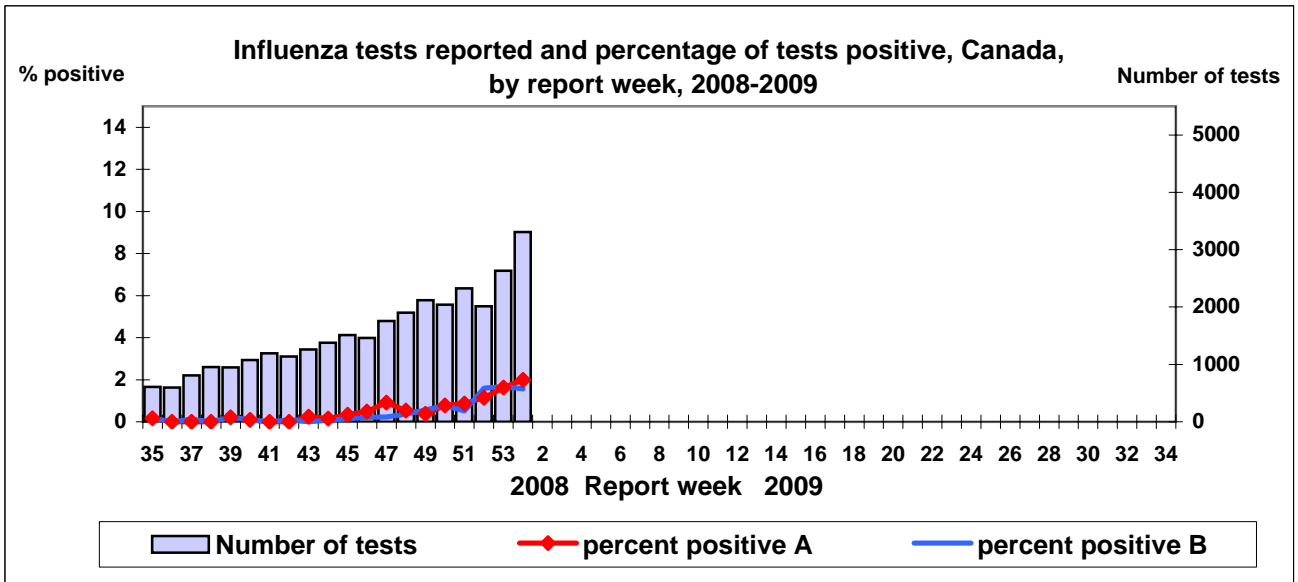


† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

**Influenza Activity Level by Provincial and Territorial Influenza Surveillance Regions,  
Canada; January 4, 2009 to January 10, 2009 (Week 01)**

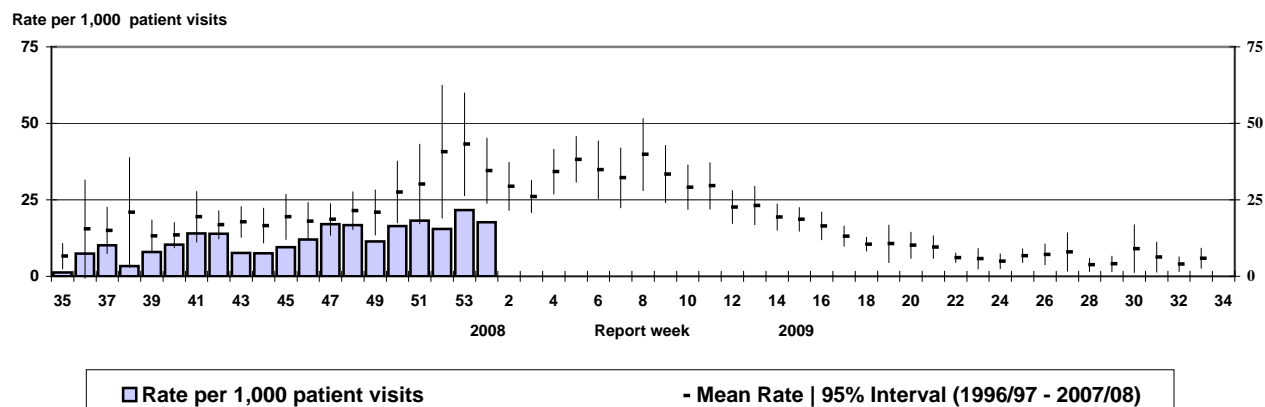


**Note:** Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, **based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and outbreaks.** Please refer to detailed definitions on the last page. For areas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



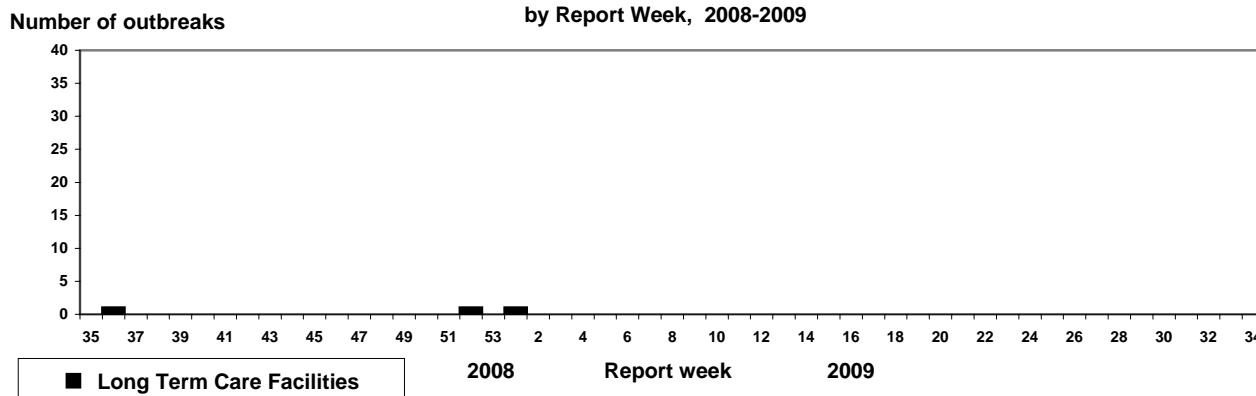
NACI recommends that the trivalent vaccine for the 2008-2009 season in Canada contain A/Brisbane/59/2007 (H1N1)-like virus; an A/Brisbane/10/2007 (H3N2)-like virus; and a B/Florida/4/2006-like virus.

**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*