



## FluWatch

February 1, 2009 to February 7, 2009 (Week 05)

### Overall influenza activity in Canada continues to increase

During week 05, influenza activity in Canada continued to increase with one region reporting widespread influenza activity (in BC) and more regions reporting localized (n=11; in BC, AB, MB, ON, QC, NB & NL) and sporadic activity (n=29) (see map). The proportion of tests that were positive for influenza continued to increase (percentage positive = 11.7%; 568/4,865) (see table). Although the majority of influenza virus detections to date this season were influenza A viruses (57% or 1,003/1,746) detections for influenza B viruses are also increasing (see graph). This week, the ILI consultation rate declined to 21 ILI consultations per 1,000 patient visits (see ILI graph) which is below the expected range. The sentinel response rate was 64%. In week 05, 23 new influenza outbreaks were reported: 6 in LTCFs (AB, ON & QC), 1 in a hospital (NL) and 16 in schools (BC, AB, MB & NB).

#### Antigenic Characterization:

Since 1 September 2008, the NML has antigenically characterized 290 influenza viruses: 76 influenza A/Brisbane/59/2007(H1N1)-like (from BC, AB, SK, ON, QC, NS & PEI), 29 influenza A/Brisbane/10/2007(H3N2)-like (from BC, AB, SK, ON, QC, PEI & NL), 6 influenza B/Florida/4/2006-like (from AB, ON & QC) and 179 B/Malaysia/2506/2004-like (in all provinces except BC). 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)

\*\*\* The WHO recommends that the vaccines to be used in the 2009-2010 season (northern hemisphere) contain the following: an A/Brisbane/59/2007 (H1N1)-like virus; an A/Brisbane/10/2007 (H3N2)-like virus; and a B/Brisbane/60/2008-like virus. <[http://www.who.int/csr/disease/influenza/recommendations2009\\_10north/en/index.html](http://www.who.int/csr/disease/influenza/recommendations2009_10north/en/index.html)>

#### Antiviral Resistance:

Results from the NML:

Since the start of the season, the NML has tested 101 influenza A isolates (54 H1N1 and 47 H3N2) for amantadine resistance. All of the H1N1 isolates were susceptible; however all of the H3N2 isolates were resistant to amantadine (resistance = 100% or 47/47). The resistant isolates were from BC, AB, SK, ON, QC, PEI, NL & NT.

The NML has also tested 180 influenza isolates (52 A/H1N1, 17 A/H3N2 & 111 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 52/52). The resistant isolates were from BC, AB, SK, ON, NS & PEI.

All 175 influenza isolates (45 A/H1N1, 18 A/H3N2 & 112 B) tested for zanamivir resistance to date were sensitive to zanamivir.

*Oseltamivir resistance findings from Provincial laboratories:*

To date this season, 76 influenza isolates in BC have been sub-typed as A/H1 and were assessed genotypically for oseltamivir resistance using an SNP assay. Sixty-eight isolates tested positive for the H274Y mutation (resistance = 100% or 68/68), with the other 8 specimens still pending confirmatory testing.

#### Influenza-associated Paediatric Hospitalizations:

In week 05, 29 laboratory-confirmed influenza-associated paediatric hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network. The cases were from BC, AB, ON & QC and 72% were due to influenza A. To date, 91 hospitalizations have been reported of which 73% (66/91) have been due to influenza A. The proportion of cases to date by age group are as follows: 19% were 0-5 month olds; 16% were 6-23 month olds; 14% were 2-4 year-olds; 14% were 5-9 year-olds; and 36% were 10-16 year-olds. The distribution of cases to date by province are as follows: 8% from BC, 8% from AB, 68% from ON, 14% from QC & 2% from NS.

#### International:

**CDC:** During week 04, influenza activity continued to increase in the United States; 792 (16.2%) specimens tested positive for influenza, of which 85% were influenza A and 15% were influenza B. Testing for antiviral resistance indicated that of the influenza A/H1N1, 97.4% were resistant to oseltamivir and 1.1% resistant to amantadine. Of the influenza A/H3N2 viruses tested for resistance, 100% were resistant to amantadine. All tested viruses remain sensitive to zanamivir. One influenza-associated pediatric death was reported during week 04. <<http://www.cdc.gov/flu/weekly/>>

**EISS:** Influenza activity continues to increase in eastern Europe, however in western Europe it is generally decreasing. Influenza A(H3N2) continues to be the dominant influenza virus circulating in Europe. Of the 115 A(H3N2) isolates that were tested for adamantanes susceptibility, 115 (100%) were resistant. Of the 110 A(H1N1) virus isolates tested for resistance against neuraminidase inhibitors, 107 (97%) were resistant to oseltamivir, 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 7 February 2009, the WHO has reported 2 new cases of human H5N1 avian influenza infection from Egypt and Viet Nam. <[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**

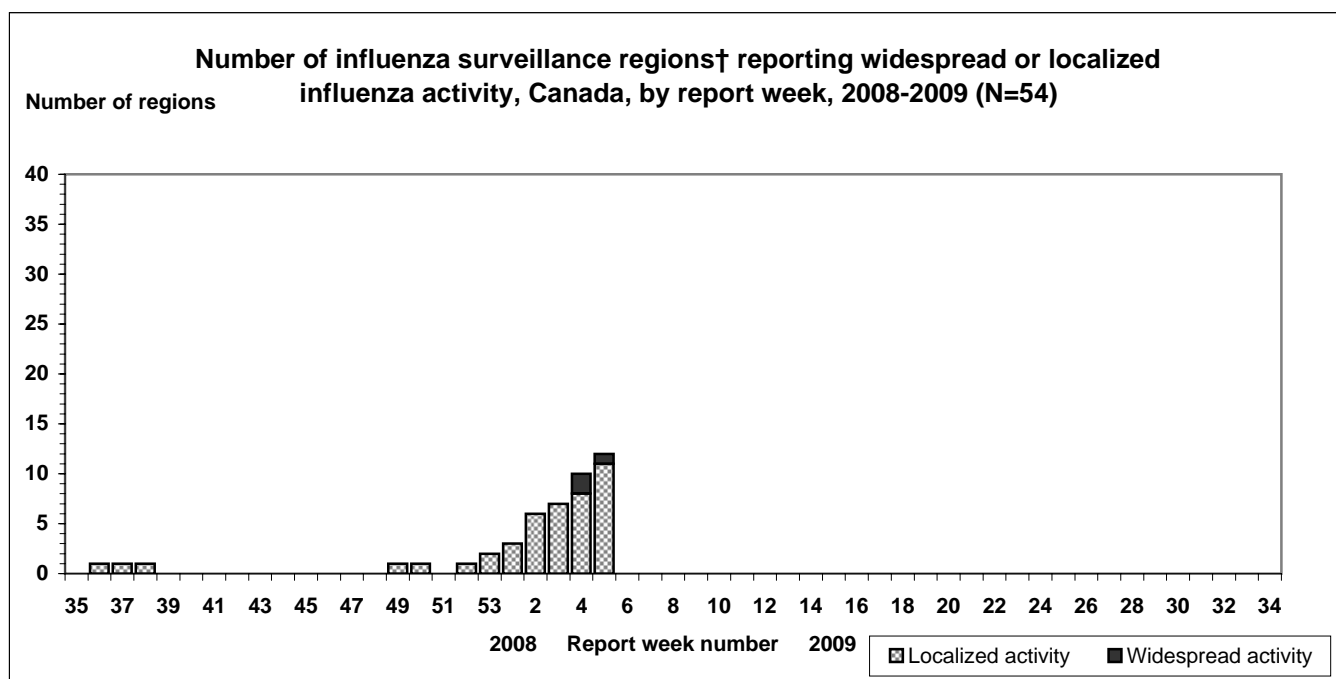
Province of reporting laboratories	Report Period: February 1, 2009 to February 7, 2009				Season to Date: August 24, 2008 to February 7, 2009			
	Total # of influenza	# of positive tests			Total # of influenza	# of positive tests		
		Influenza A	Influenza B	Total		Influenza A	Influenza B	Total
NL	25	4	1	5	299	8	3	11
PE	16	3	0	3	109	8	4	12
NS	72	9	6	15	463	14	11	25
NB	103	20	3	23	486	27	18	45
QC	1505	136	68	204	12774	369	98	467
ON	1546	68	120	188	15285	214	451	665
MB	90	1	2	3	1207	1	4	5
SK	252	2	8	10	2478	19	13	32
AB	1080	45	13	58	11532	177	98	275
BC	176	36	23	59	1300	166	43	209
<b>Canada</b>	<b>4865</b>	<b>324</b>	<b>244</b>	<b>568</b>	<b>45933</b>	<b>1003</b>	<b>743</b>	<b>1746</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.

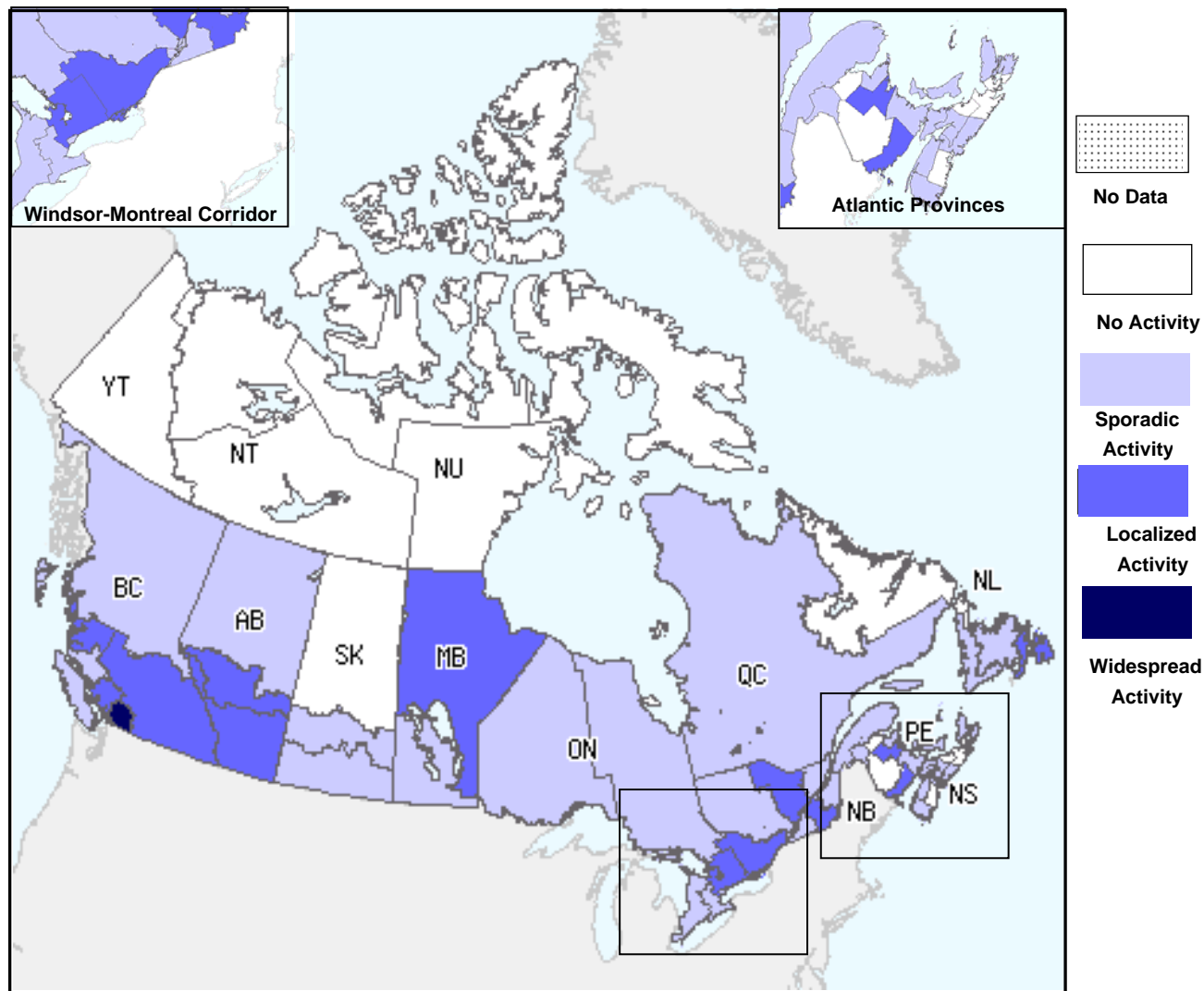
**Abbreviations:** Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU)

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>>

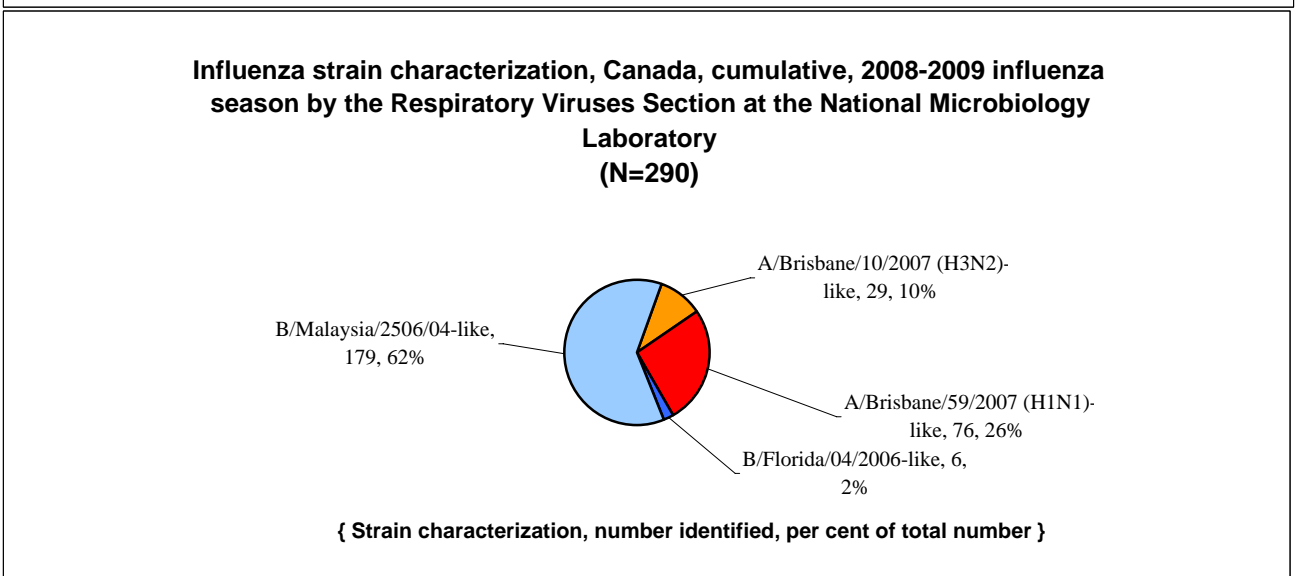
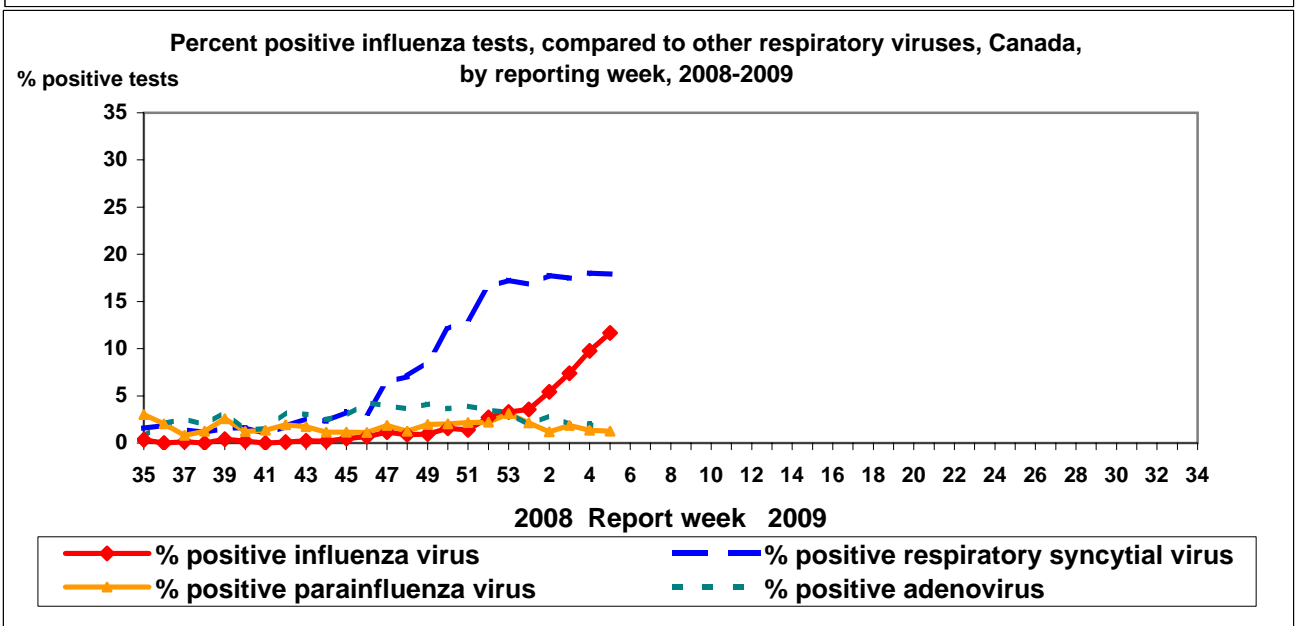
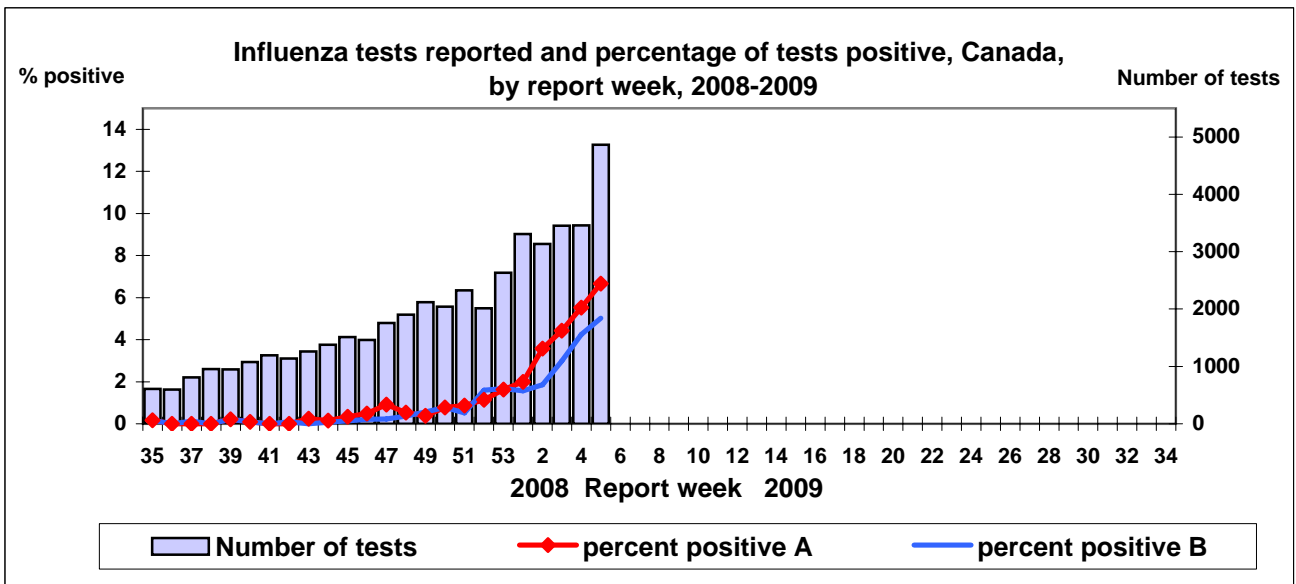


† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

**Influenza Activity Level by Provincial and Territorial Influenza Surveillance Regions,  
Canada; February 1, 2009 to February 7, 2009 (Week 05)**

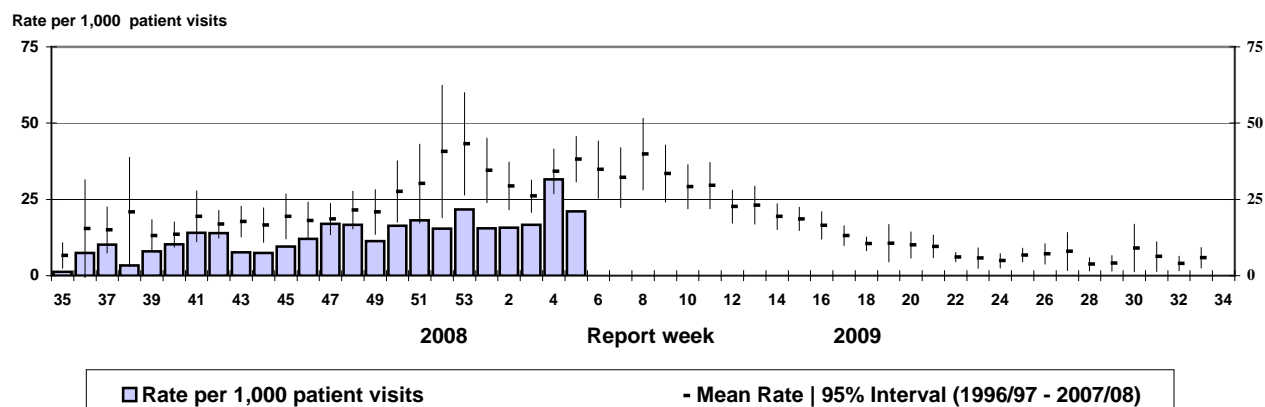


**Note:** Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, **based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and outbreaks.** Please refer to detailed definitions on the last page. For areas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



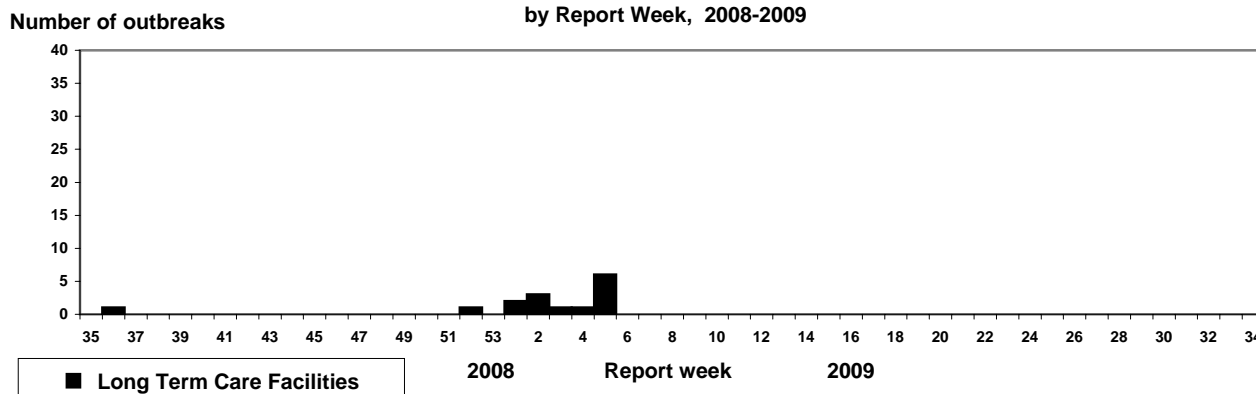
NACI recommends that the trivalent vaccine for the 2008-2009 season in Canada contain A/Brisbane/59/2007 (H1N1)-like virus; an A/Brisbane/10/2007 (H3N2)-like virus; and a B/Florida/4/2006-like virus.

**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*