



# Flu Watch

March 8, 2009 to March 14, 2009 (Week 10)

## Influenza detections appear to have peaked

During week 10, 5 regions (in BC, MB, QC) reported widespread activity, 15 regions localized (in AB, ON, QC, NB & NF), 30 regions sporadic and 4 regions reported no activity (see map). The proportion of tests that were positive for influenza decreased from the previous week (percentage positive = 16.4%; 865/5,261) (see table). To date this season, 58% (3,724/6,398) of detections are influenza A (see graph). This week, the ILI consultation rate fell to 22 ILI consultations per 1,000 patient visits (see ILI graph) which is within the expected range for this time of year. The sentinel response rate was 60%. In week 10, 34 new influenza outbreaks were reported: 19 in LTCFs (BC, AB, MB, ON, QC, & NB), 12 in schools (BC, MB & NB), one in a hospital (ON) and 2 other outbreaks.

### Antigenic Characterization:

Since 1 September 2008, the NML has antigenically characterized 596 influenza viruses: 136 influenza A/Brisbane/59/2007(H1N1)-like (from BC, AB, SK, ON, QC, NB, NS & PEI), 103 influenza A/Brisbane/10/2007(H3N2)-like (from BC, AB, SK, MB, ON, QC, PEI & NL), 6 influenza B/Florida/4/2006-like (from AB, ON & QC) and 351 B/Malaysia/2506/2004-like (in all provinces except the Territories). 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 322 influenza A isolates (160 H1N1 and 162 H3N2) for amantadine resistance. All of the H1N1 isolates were susceptible; however all of the H3N2 isolates were resistant to amantadine (resistance = 100%). The resistant isolates were from BC, AB, SK, MB, ON, QC, NB, PEI, NL & NT.

The NML has also tested 566 influenza isolates (125 A/H1N1, 89 A/H3N2 & 352 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%). The resistant isolates were from BC, AB, SK, ON, QC, NB, NS & PEI.

All 552 influenza isolates (113 A/H1N1, 88 A/H3N2 & 351 B) tested for zanamivir resistance to date were sensitive to zanamivir.

#### Osetamivir resistance findings from Provincial laboratories:

To date this season, 119 influenza isolates in BC have been sub-typed as A/H1 and were assessed genotypically for oseltamivir resistance using an SNP assay. One hundred and seven isolates tested positive for the H274Y mutation (resistance = 100% or 107/107), with the other 12 specimens still pending confirmatory testing.

### Influenza-associated Paediatric Hospitalizations:

In week 10, 16 laboratory-confirmed influenza-associated paediatric hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network. The cases were from QC and 75% were due to influenza A. To date, 312 hospitalizations have been reported of which 70% have been due to influenza A. The proportion of cases to date by age group are as follows: 23% were 0-5 month olds; 18% were 6-23 month olds; 12% were 2-4 year-olds; 13% were 5-9 year-olds; and 35% were 10-16 year-olds. The distribution of cases to date by province are as follows: 10% from BC, 7% from AB, 3% from SK, 2% from MB, 36% from ON, 39% from QC, 3% from NS & 1% from NL. This week, an influenza-associated pediatric death due to influenza A was reported in Quebec. The child was between 2 to 4 years of age, previously healthy and had not been vaccinated against influenza. This is the first influenza-associated pediatric death reported in Canada this season.

### International:

**WHO:** During the weeks 9-10, the level of influenza activity increased in some parts of the world while it declined in other countries. While influenza A/H3 continues to be the dominant influenza virus circulating in Europe, an increasing number of countries reported influenza B as the dominant or co-dominant virus type. <<http://www.who.int/csr/disease/influenza/update/en/>>

**CDC:** During week 09, influenza activity remained high in the United States; 1,252 (23.0%) specimens tested positive for influenza, of which 57% were influenza A and 43% were influenza B. Testing for antiviral resistance indicated that of the influenza virus A/H1N1 tested, 98.8% were resistant to oseltamivir and 0.7% resistant to amantadine. Of the influenza A/H3N2 viruses tested for resistance, 100% were resistant to amantadine. All tested viruses remain sensitive to zanamivir. To date this season, 26 influenza-associated pediatric deaths have been reported to the CDC (5 of which were reported in week 09). Bacterial co-infections were confirmed in 18 (75%) of 24 tested children; *Staphylococcus aureus* was identified in 12 (67%) of 18 tested children. An increase in the number of influenza-associated pediatric deaths with bacterial co-infections was first recognized during the 2006-07 influenza season.

<<http://www.cdc.gov/flu/weekly/>>

**EISS:** Influenza activity high in the Russian Federation while being low or continuing to decline in most western, central and northern European countries. The Russian Federation reported high influenza activity for the first time this season. Other countries in eastern Europe as well as some in central, northern and south eastern Europe maintained medium intensity levels whereas all countries in western Europe continued to report low levels. While influenza A/H3 remains the predominant circulating virus overall, influenza B virus detections are currently dominant in some countries. Of the 272 A(H3N2) isolates that were tested for adamantanes susceptibility, 272 (100%) were resistant. Of the 204 A(H1N1) virus isolates tested for resistance against neuraminidase inhibitors, 200 (98%) 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 14 March 2009, no new cases of human H5N1 avian influenza have been reported.

<[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**

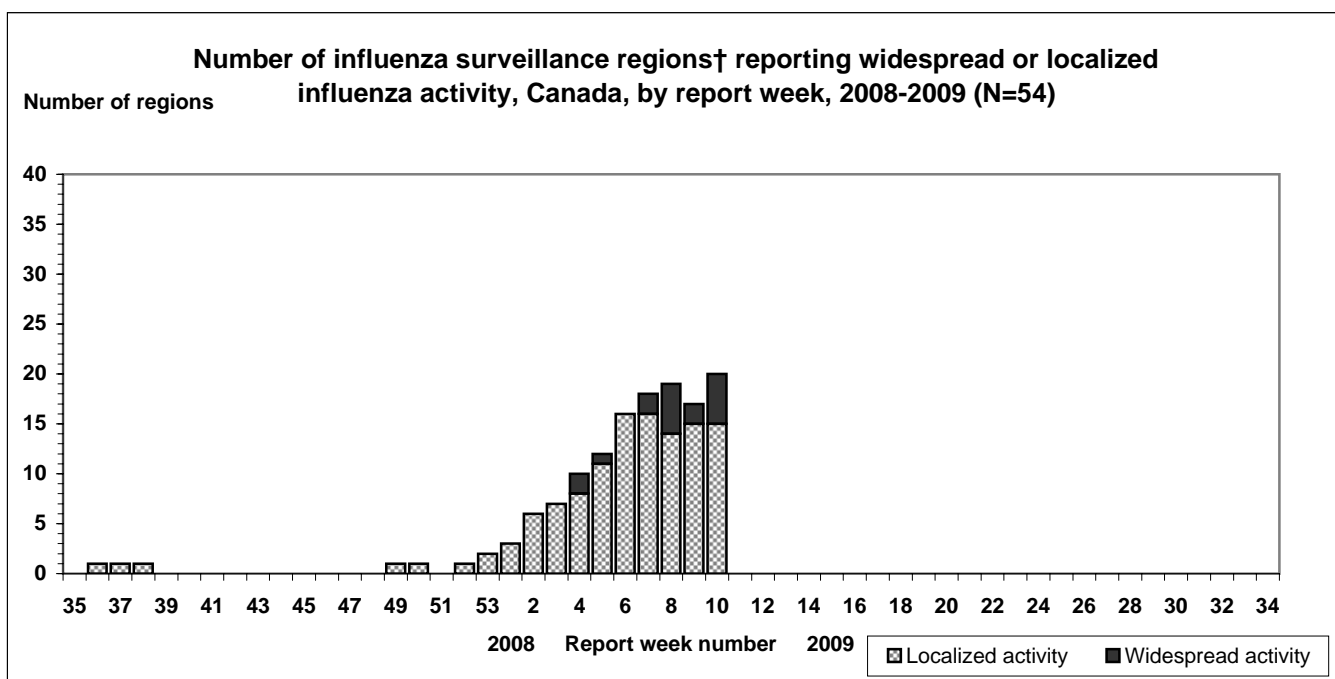
Province of reporting laboratories	Report Period: March 8, 2009 to March 14, 2009				Season to Date: August 24, 2008 to March 14, 2009			
	Total # of influenza	# of positive tests			Total # of influenza	# of positive tests		
		Influenza A	Influenza B	Total		Influenza A	Influenza B	Total
NL	95	8	1	9	616	67	8	75
PE	10	1	0	1	170	13	8	21
NS	53	1	5	6	764	30	36	66
NB	136	37	4	41	1048	155	64	219
QC	2180	259	135	394	24279	1721	1023	2744
ON	1232	69	106	175	22584	612	1133	1745
MB	78	5	4	9	1637	20	14	34
SK	241	26	24	50	3794	87	75	162
AB	1063	80	26	106	16720	573	175	748
BC	173	59	15	74	2190	446	138	584
<b>Canada</b>	<b>5261</b>	<b>545</b>	<b>320</b>	<b>865</b>	<b>73802</b>	<b>3724</b>	<b>2674</b>	<b>6398</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.

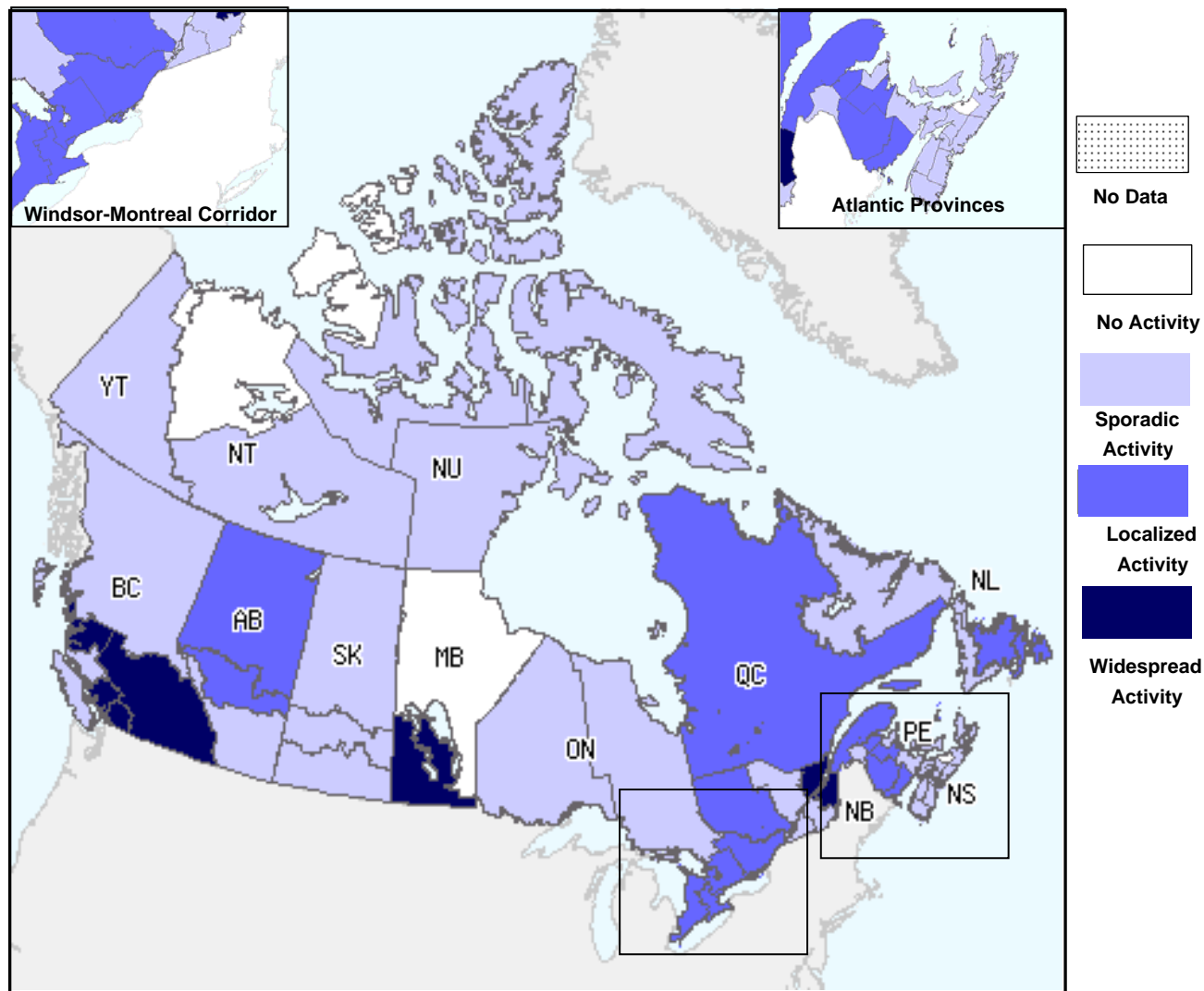
**Abbreviations:** Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU)

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>>

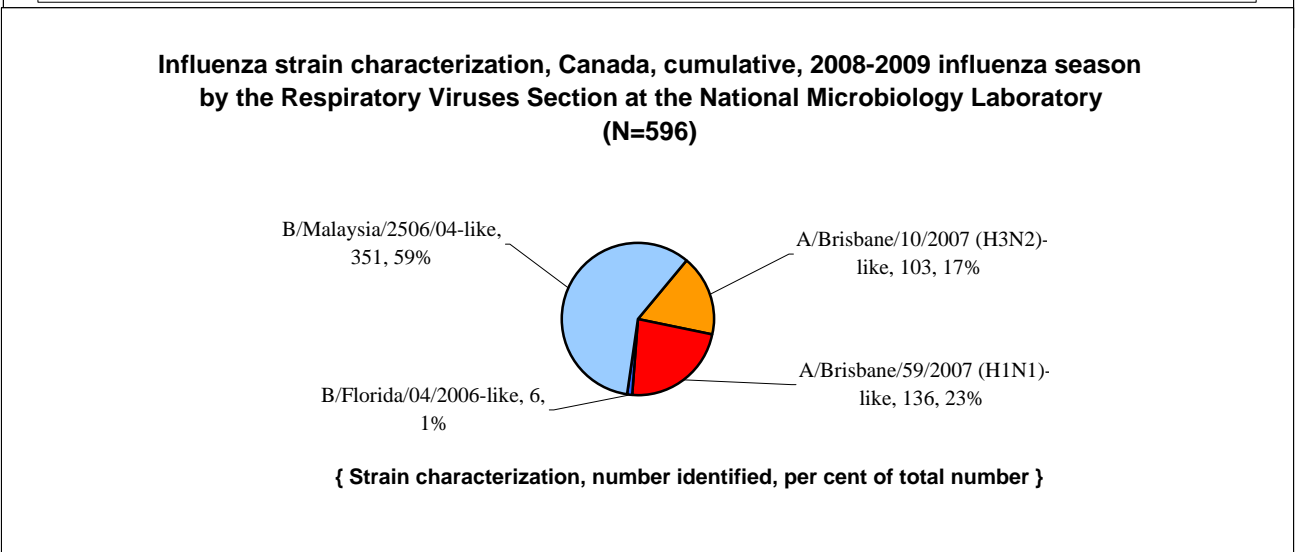
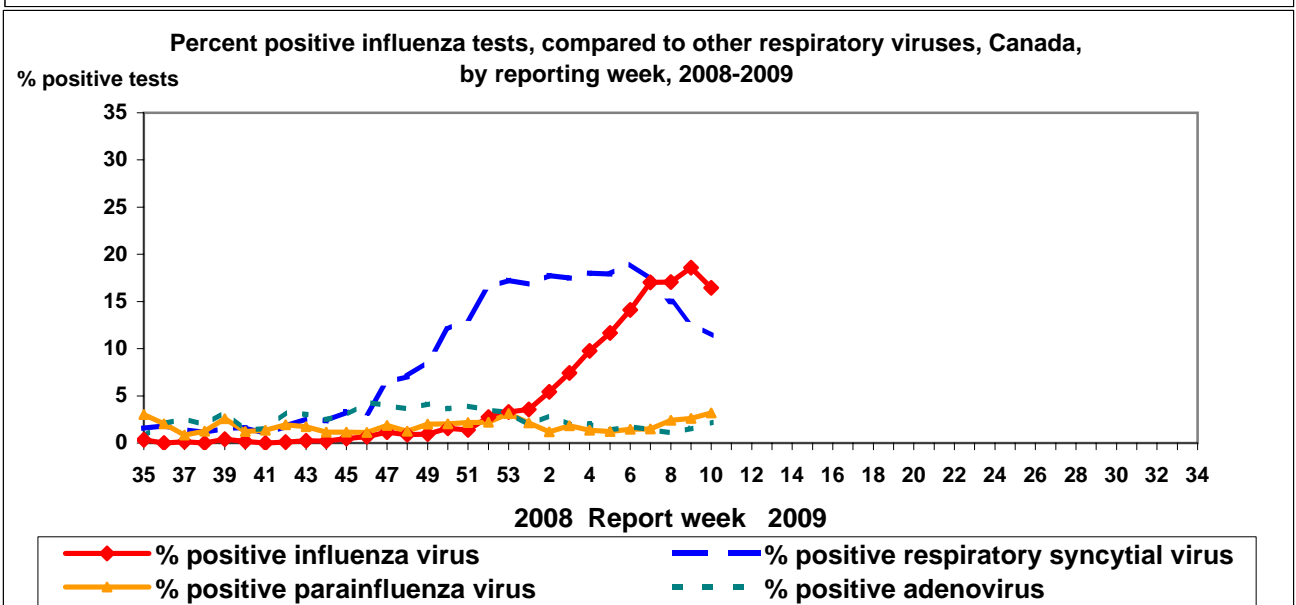
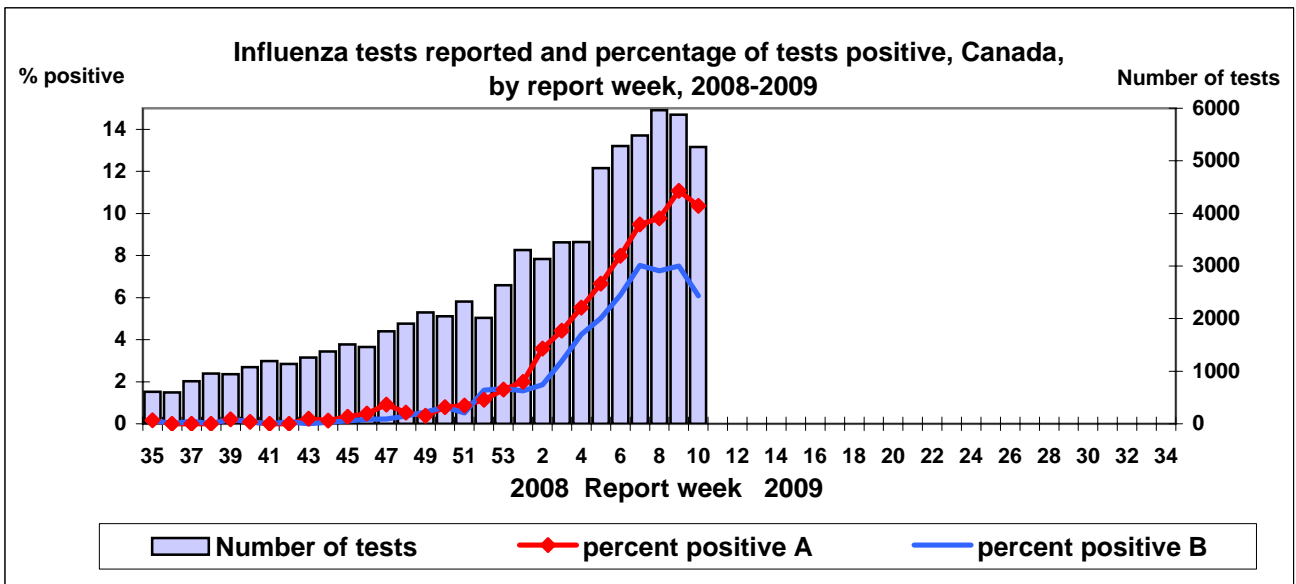


† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

**Influenza Activity Level by Provincial and Territorial Influenza Surveillance Regions,  
Canada; March 8, 2009 to March 14, 2009 (Week 10)**

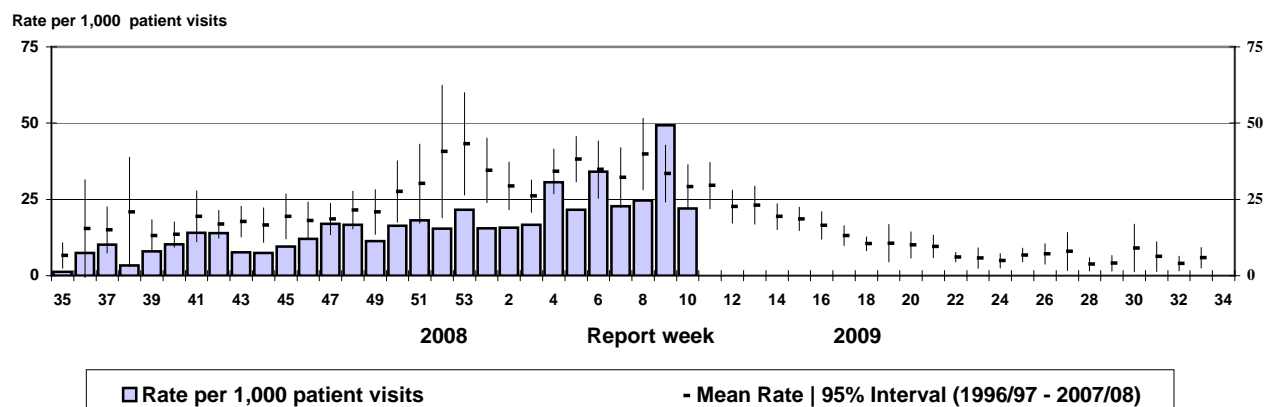


**Note:** Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, **based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and outbreaks.** Please refer to detailed definitions on the last page. For areas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



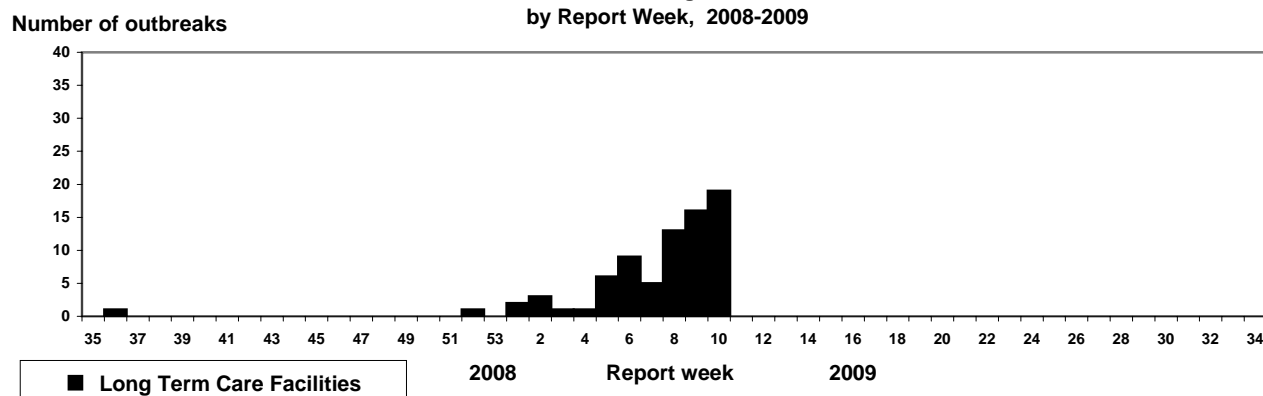
NACI recommends that the trivalent vaccine for the 2008-2009 season in Canada contain A/Brisbane/59/2007 (H1N1)-like virus; an A/Brisbane/10/2007 (H3N2)-like virus; and a B/Florida/4/2006-like virus.

**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*