



FluWatch

April 5, 2009 to April 11, 2009 (Week 14)

Overall influenza activity in Canada is relatively similar to previous week

During week 14, overall influenza activity in Canada appears similar from previous week with some indicators having increased slightly (ILI consultation rate and outbreaks), but laboratory detections decreased and influenza activity level by province remained similar. This week, one region reported widespread activity, 15 regions localized (in BC, AB, MB, ON, QC, NB, & NL), 31 regions sporadic and 4 regions reported no activity (see map). (NT did not report) The proportion of tests that were positive for influenza decreased from the previous week (percentage positive = 10.7%; 352/3,296) (see table). To date this season, 60% (5,283/8,767) of detections are influenza A (see graph). This week, the ILI consultation rate was 24 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 54%. In week 14, 15 new influenza outbreaks were reported: 10 in LTCFs (BC, AB, MB & QC), 1 in a school (NS), 3 other outbreaks (AB) and 1 in a hospital (NL).

Antigenic Characterization:

Since 1 September 2008, the NML has antigenically characterized 828 influenza viruses: 202 influenza A/Brisbane/59/2007(H1N1)-like (from BC, AB, SK, MB, ON, QC, NB, NS & PEI), 142 influenza A/Brisbane/10/2007(H3N2)-like (from BC, AB, SK, MB, ON, QC, NB, PEI & NL), 9 influenza B/Florida/4/2006-like (from AB, ON, QC & NB), 107 B/Brisbane/60/2008-like (from BC, SK, MB, ON, QC, NB & NL) and 368 B/Malaysia/2506/2004-like (in all provinces except the Territories). A/Brisbane/59/2007(H1N1), A/Brisbane/10/2007(H3N2) and B/Florida/04/2006 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). B/Brisbane/60/2008-like is the recommended influenza B component for the 2009-2010 season vaccine.

Antiviral Resistance:

Results from the NML:

Since the start of the season, the NML has tested 527 influenza A isolates (242 H1N1 and 285 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 839 influenza isolates (225 A/H1N1, 154 A/H3N2 & 460 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, MB, ON, QC, NB, NS, PEI & NL.

All 794 influenza isolates (176 A/H1N1, 152 A/H3N2 & 466 B) tested for zanamivir resistance to date were sensitive to zanamivir.

Oseltamivir resistance findings from Provincial laboratories:

To date this season, 156 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 forty-four isolates tested positive for the H274Y mutation (resistance = 100% or 144/144), with the other 12 specimens still pending confirmatory testing.

Influenza-associated Paediatric Hospitalizations:

In week 14, 2 laboratory-confirmed influenza-associated paediatric hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network. The two cases were from AB and 50% were due to influenza A. To date, 383 hospitalizations have been reported of which 55% have been due to influenza A. The proportion of cases to date by age group are as follows: 14% were 0-5 month olds; 30% were 6-23 month olds; 25% were 2-4 year-olds; 16% were 5-9 year-olds; and 15% were 10-16 year-olds. The distribution of cases to date by province are as follows: 9.5% from BC, 9% from AB, 4% from SK, 4% from MB, 30% from ON, 40% from QC, 3% from NS & 0.5% from NL.

*Note that the section on "Influenza-associated Paediatric Hospitalizations" of all the FluWatch reports from week 44, 2008 to week 11, 2009 have been revised due to technical errors identified on week 12, 2009.

International:

WHO: No changes from previous report.

CDC: No changes from previous report.

EISS: Influenza activity in Europe is coming to an end for the 2008-2009 season. In week 15, all countries and regions in Europe, including all of the European Union / European Economic Area, reported decreasing influenza activity or baseline activity. One of the seven regions of the Russian Federation reported high influenza activity in week 15, but has passed its peak two weeks ago. Influenza A(H3N2) has been the dominant virus in Europe, accounting for an estimated 76% of total virus detections this season. Of influenza B viruses that have been antigenically and/or genetically characterized, 96% (871/908) were B/Victoria lineage. With the exception of these B/Victoria lineage viruses, most of the viruses characterized are similar to the three components - A(H1N1), A(H3N2) and B/Yamagata lineage - included in the 2008/2009 Northern Hemisphere influenza vaccine. Of the 415 A(H3N2) isolates that were tested for adamantanes susceptibility, 414 (99.8%) were resistant. Of the 227 A(H1N1) virus isolates tested for resistance against neuraminidase inhibitors, 223 (98%) were resistant to oseltamivir, but all were sensitive to zanamivir. <http://www.eiss.org/cgi-files/bulletin_v2.cgi>

Human Avian Influenza: During week 14, the WHO reported three new cases of human H5N1 avian influenza infection in Egypt and one new case in Vietnam. <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**

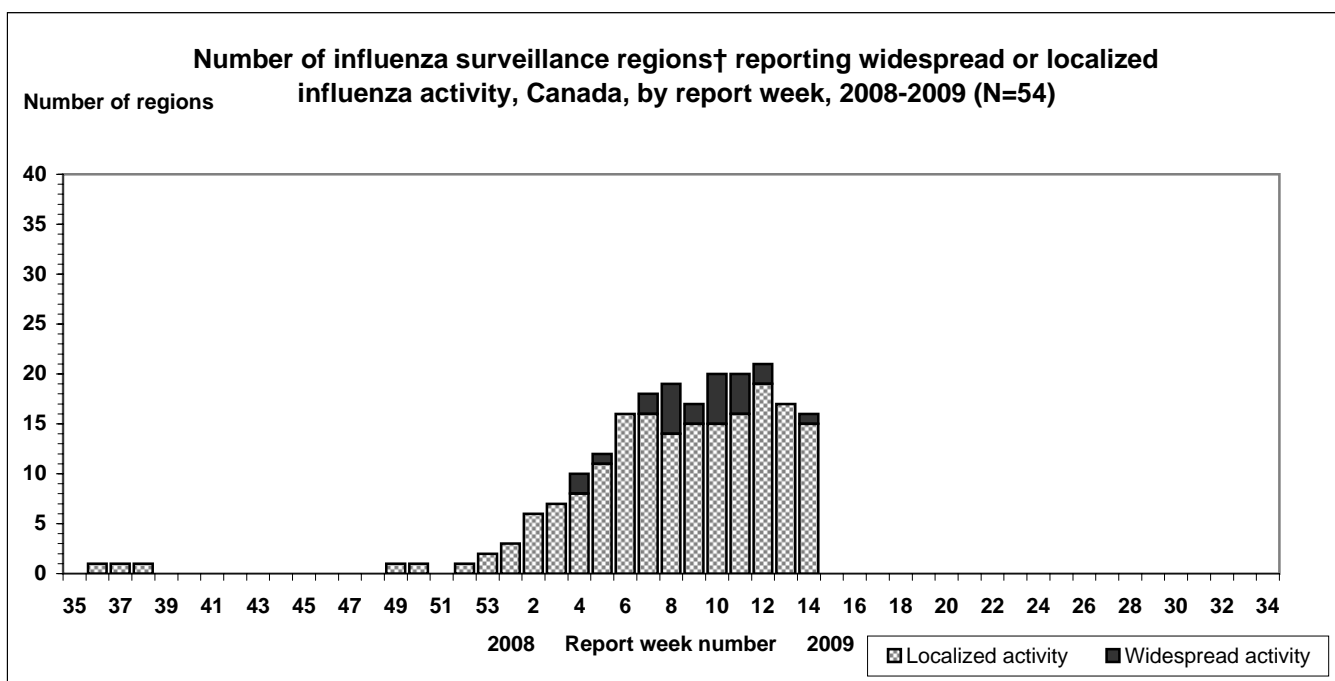
Province of reporting laboratories	Report Period: April 5, 2009 to April 11, 2009				Season to Date: August 24, 2008 to April 11, 2009			
	Total # of influenza	# of positive tests			Total # of influenza	# of positive tests		
		Influenza A	Influenza B	Total		Influenza A	Influenza B	Total
NL	57	11	5	16	834	102	19	121
PE	1	0	0	0	183	14	8	22
NS	19	1	4	5	865	55	55	110
NB	53	6	3	9	1423	239	81	320
QC	1225	68	44	112	30460	2240	1331	3571
ON	796	64	16	80	26967	1032	1312	2344
MB	67	2	2	4	1970	39	28	67
SK	178	11	11	22	4751	168	160	328
AB	801	33	36	69	20498	793	309	1102
BC	99	27	8	35	2724	601	181	782
Canada	3296	223	129	352	90675	5283	3484	8767

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.

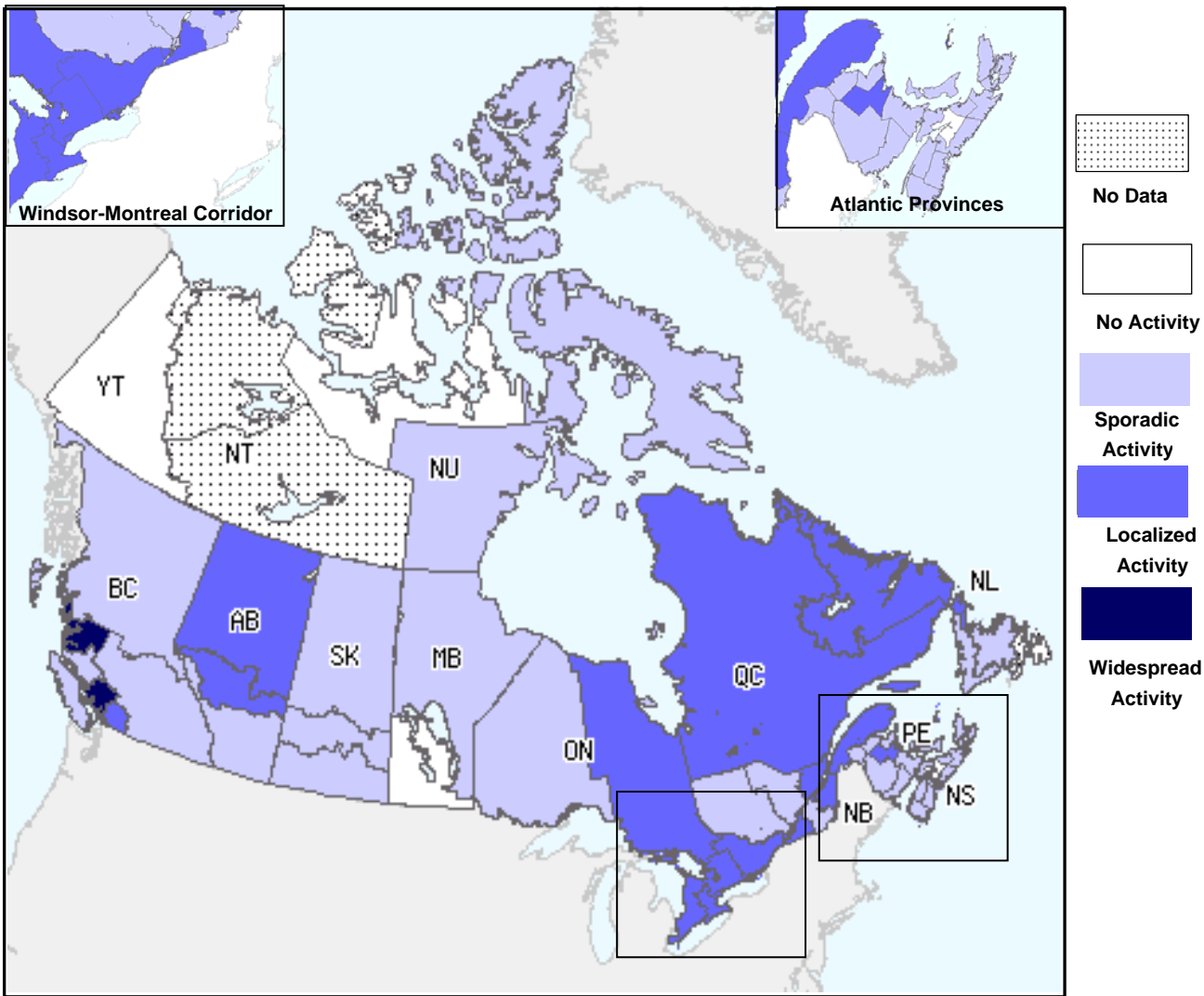
Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU)

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>>

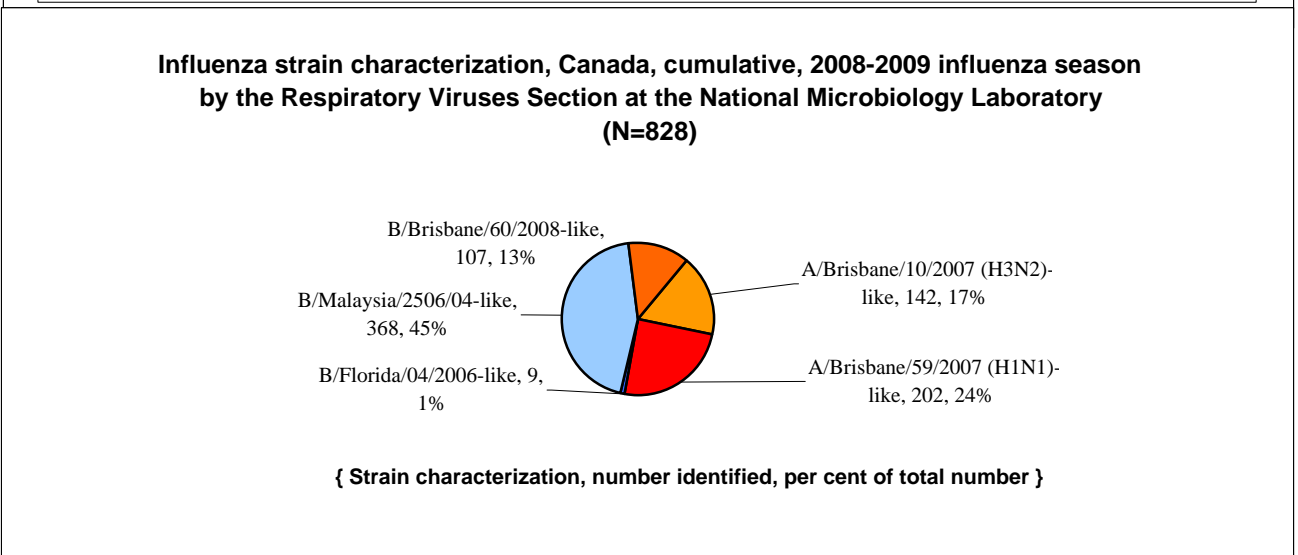
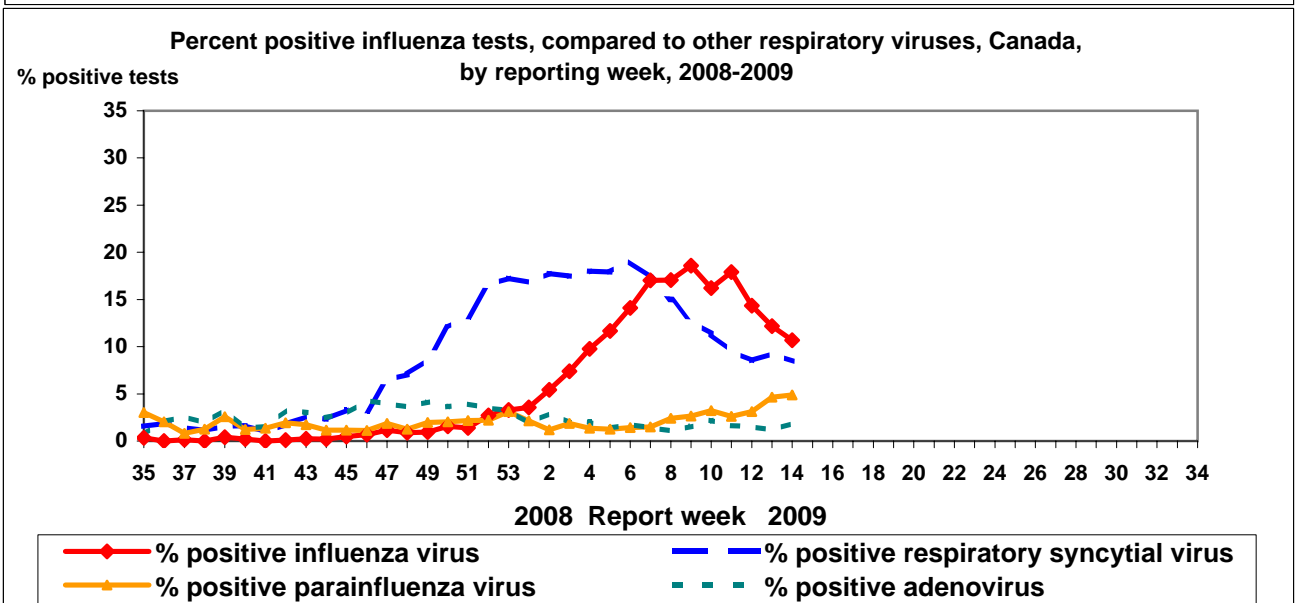
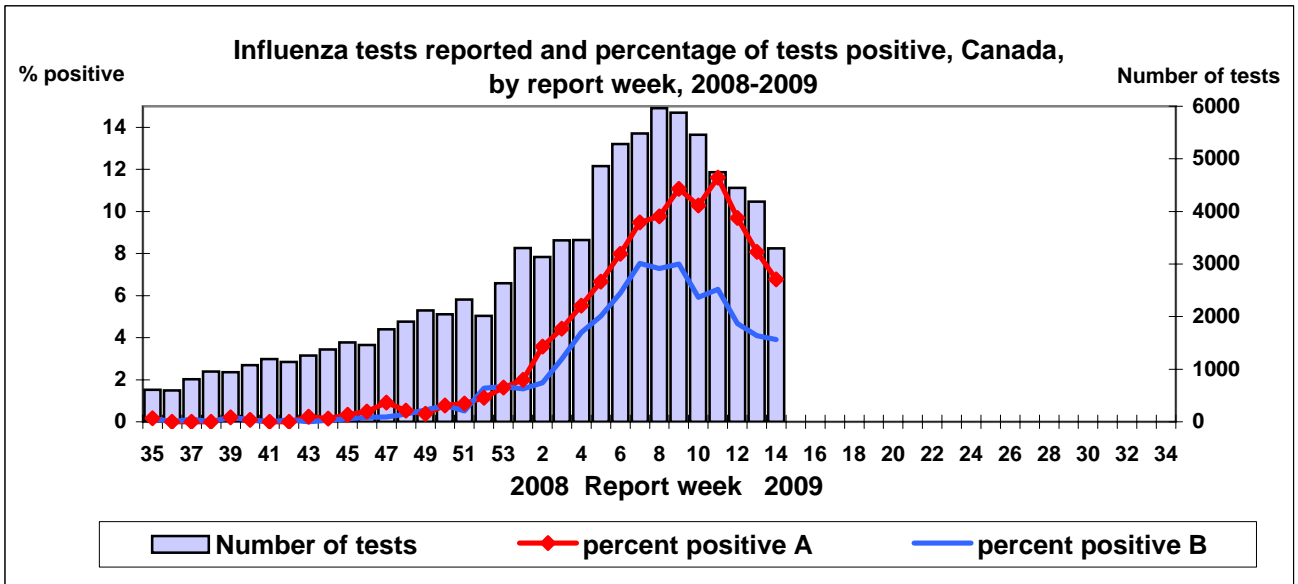


† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

**Influenza Activity Level by Provincial and Territorial Influenza Surveillance Regions,
Canada; April 5, 2009 to April 11, 2009 (Week 14)**

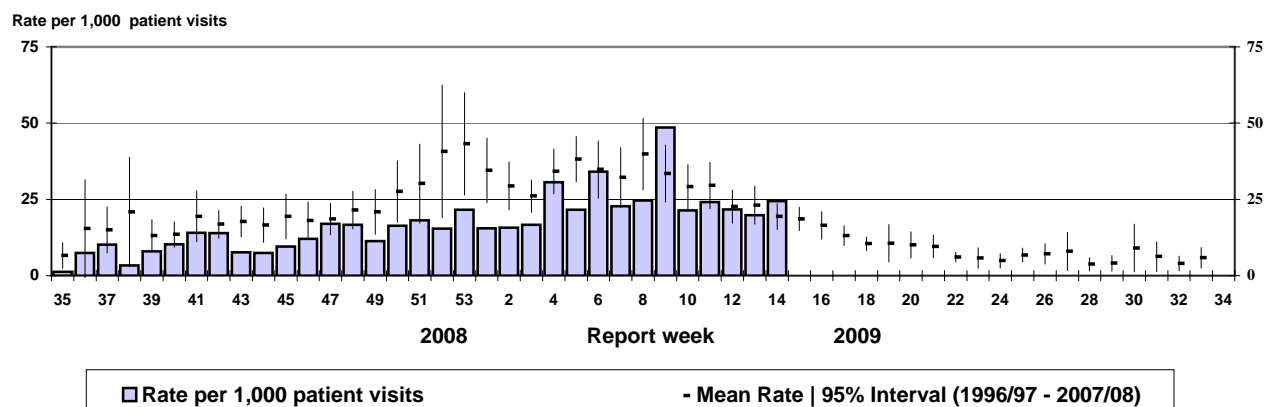


Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, **based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and outbreaks.** Please refer to detailed definitions on the last page. For areas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



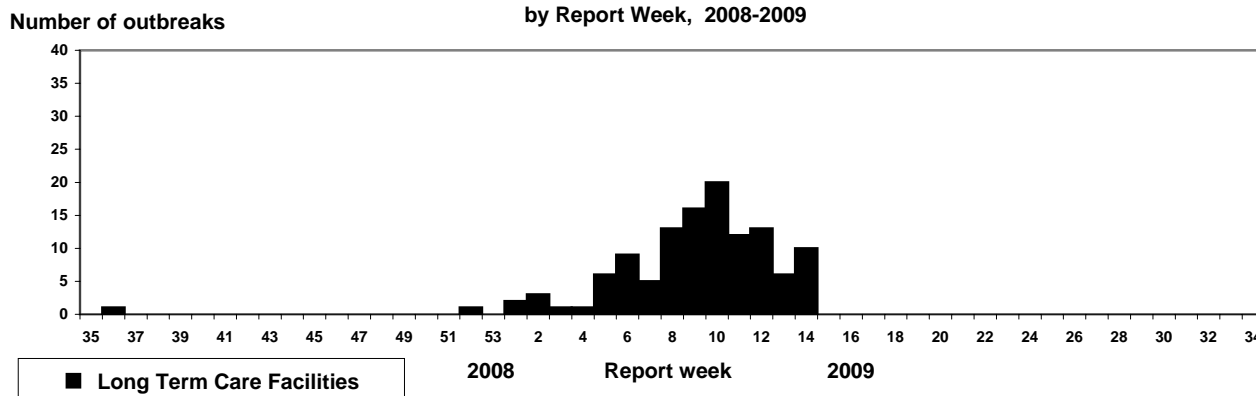
NACI recommends that the trivalent vaccine for the 2008-2009 season in Canada contain A/Brisbane/59/2007 (H1N1)-like virus; an A/Brisbane/10/2007 (H3N2)-like virus; and a B/Florida/4/2006-like virus.

**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