The College of Family Physicians of Canada | Le Collège des médecins de famille du Canada

FluWatch

Public Health Agency of Canada | Agence de la santé publique du Canada

March 2, 2008 to March 8, 2008 (Week 10)

Overall influenza activity in Canada similar to previous weeks

During week 10, overall influenza activity in Canada remained similar to previous weeks with some indicators (laboratory detections and ILI consultation rate) having increased slightly compared to compared to week 09. Widespread influenza activity was reported by 3 regions (in BC, AB & ON) and localized influenza activity by 16 regions (in BC, AB, SK, MB, ON, QC & NS). Six regions reported no activity and 31 reported sporadic activity (see map). In week 10, the percentage of specimens that tested positive for influenza was 18% (851/4,736) for Canada as a whole; and regionally ranging from 51% in NB to 10% in PEI. The proportion of influenza B detections in Canada continued to increase, accounting for 39% of detections in week 10; however, the majority of influenza detections were still for influenza A viruses (see table). This week, the ILI consultation rate increased to 28 ILI consultations per 1,000 patient visits (see ILI graph), which is within the expected range for this week. The sentinel response rate was 52%. Thirty-three new outbreaks of influenza or ILI were reported this week as follows: 17 LTCFs, 7 schools, 4 hospitals and 5 others.

Antigenic Characterization:

The National Microbiology Laboratory (NML) has characterized 651 influenza viruses for the 2007-2008 influenza season: 347 (53%) A(H1N1), 62 (10%) A(H3N2) and 242 (37%) B viruses. All influenza A(H1N1) viruses were antigenically similar to A/Solomon Islands/3/2006. Of the 62 influenza A(H3N2) viruses characterized, 5 (8%) were antigenically similar to A/Wisconsin/67/2005 and 57 (92%) were antigenically similar to A/Brisbane/10/2007. One of the 5 A/Wisconsin-like viruses had reduced titer to A/Wisconsin/67/2005 reference antiserum. Of the 242 influenza B isolates characterized, 3 (1%) were antigenically similar to B/Malaysia/2506/2004 and 239 (99%) were antigenically similar to B/Florida/4/2006 (belonging to the B/Yamagata lineage) (see pie chart).

*** The WHO recommends that the vaccines to be used in the 2008-2009 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/Florida/4/2006-like virus. <*http://www.who.int/csr/disease/influenza/recommendations2008_9north/en/index.html*>

Antiviral Resistance:

Since the start of the season, the NML has tested 469 influenza A isolates (366 H1N1 and 103 H3N2) for amantadine resistance and found that 101 (98%) of the 103 H3N2 isolates were resistant to amantadine and 5 (1.4%) of 366 H1N1 isolates were resistant (see recommendation from the 2006-2007 influenza season: <*http://www.phac-aspc.gc.ca/media/nr-rp/2006/20061101-amantadine_e.htm>).*

The NML has also tested 606 influenza isolates (334 A/H1N1, 54 A/H3N2 & 218 B) for oseltamivir (Tamiflu) resistance and found that 53 (16%) of the 334 H1N1 isolates tested were resistant to oseltamivir. The resistant isolates were from NL, QC, ON, MB, AB and BC. These oseltamivir resistant strains remain sensitive to the antiviral amantadine.

Influenza-associated Paediatric Hospitalizations:

In week 10, there were 35 new laboratory-confirmed influenza-associated paediatric hospitalizations reported through the Immunization Monitoring Program Active (IMPACT) network from BC, AB, ON, QC and NS of which 19 (54%) were due to influenza B. Of the 277 hospitalizations reported so far this season, 65% (181/277) have been due to influenza A. The proportion of cases to date by age group are as follows: 24% were 0-5 month olds; 26% were 6-23 month olds; 22% were 2-4 year-olds; 19% were 5-9 year-olds; and 9% were 10-16 year-olds.

**** Due to technical difficulties with IMPACT's electronic reporting system, real-time reports of hospitalizations were not received since early December 2007. Over the next several weeks, more retrospective reports of cases are expected.*

International:

Hong Kong: The Centre for Health Protection (CHP) in Hong Kong has reported three deaths in children under the age of 10 in Hong Kong. In addition, there have been several influenza-like-illness (ILI) outbreaks reported in kindergartens, schools and other institutions. The outbreaks have been linked only to seasonal strains of influenza and no cases have been linked to SARS or the H5N1 avian influenza strain. Hong Kong public health authorities have closed all primary schools for two weeks over the Easter break in an effort to contain the outbreaks. For further information, visit Hong Kong's Centre for Health Protection website: *http://www.chp.gov.hk/* .

CDC: During week 09, influenza activity continued to decrease in the United States with several indicators (i.e. laboratory detections, ILI and reports of widespread activity) having decreased from the previous week. Since September 30, 2007, CDC antigenically characterized 366 influenza viruses: 191 influenza A(H1) (147 A/Solomon Islands/3/2006-like, 19 showed somewhat reduced titers with antisera produced against A/Solomon Islands, and 25 were A/Brisbane/59/2007-like), 86 influenza A(H3) (12 A/Wisconsin/67/2005-like and 67 A/Brisbane/10/2007-like, and 7 showed somewhat reduced titers with antisera produced against A/Wisconsin and A/Brisbane), and 89 influenza B viruses (6 belonging to the B/Victoria and 83 B/Yamagata lineage). Small numbers of influenza viruses resistant to oseltamivir have been detected in the United States, representing 6.1% (45/743) of all influenza viruses tested (8.7% among H1N1 viruses tested). <*http://www.cdc.gov/flu/weekly/*>

EISS: In week 10, the majority of countries in Europe reported decreasing influenza activity. Influenza B virus detections accounted for 63% of the total positive specimens collected during week 10, however the majority of virus detections since the start of the season were influenza A(H1N1) viruses. The predominant strains circulating in Europe were A/Solomon Islands/3/2006-like and B/Florida/4/2006-like. By 12 March 2008, the overall prevalence of influenza viruses resistant to oseltamivir in Europe was 21% (398/1900). <*http://www.eiss.org/cgi-files/bulletin_v2.cgi*>

Human Avian Influenza: Since 8 March 2008, the WHO reported 1 additional case of H5N1 avian influenza infection from Egypt. <*http://www.who.int/csr/disease/avian_influenza/en/*>

Total number of influenza tests performed and number of positive tests by province/territory of testing laboratory, Canada, 2007-2008

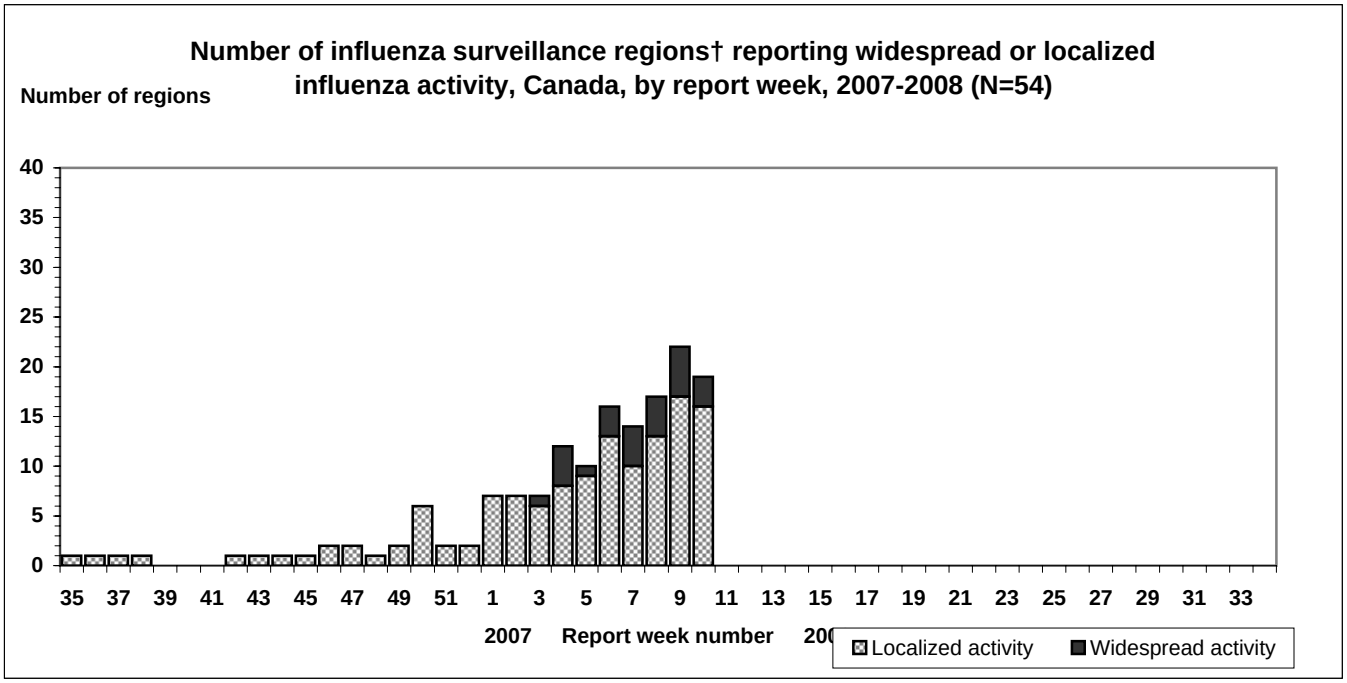
Province of reporting laboratories	Report Period: March 2, 2008 to March 8, 2008				Season to Date: August 26, 2007 to March 8, 2008			
	Total # of influenza	# of positive tests			Total # of influenza	# of positive tests		
		Influenza A	Influenza B	Total		Influenza A	Influenza B	Total
NL	124	5	22	27	723	48	77	125
PE	10	1	0	1	81	1	3	4
NS	47	3	5	8	437	9	17	26
NB	67	21	13	34	585	51	42	93
QC	1698	253	73	326	16831	1238	251	1489
ON	1124	108	70	178	20309	1106	227	1333
MB	134	19	6	25	2083	61	20	81
SK	307	23	29	52	4094	237	159	396
AB	1033	61	68	129	21135	656	753	1409
BC	192	28	43	71	2529	438	285	723
Canada	4736	522	329	851	68807	3845	1834	5679

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.

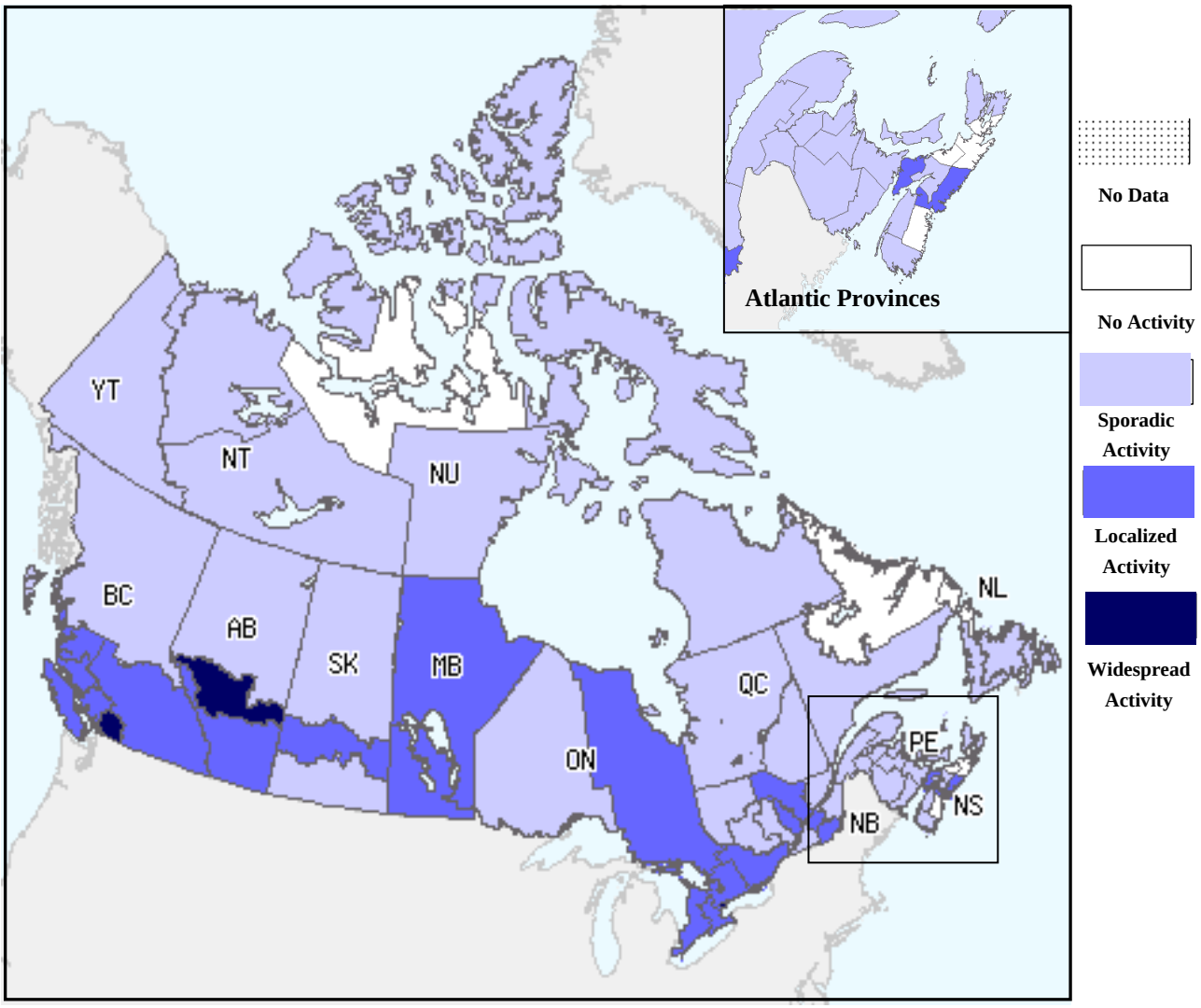
Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU)

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>

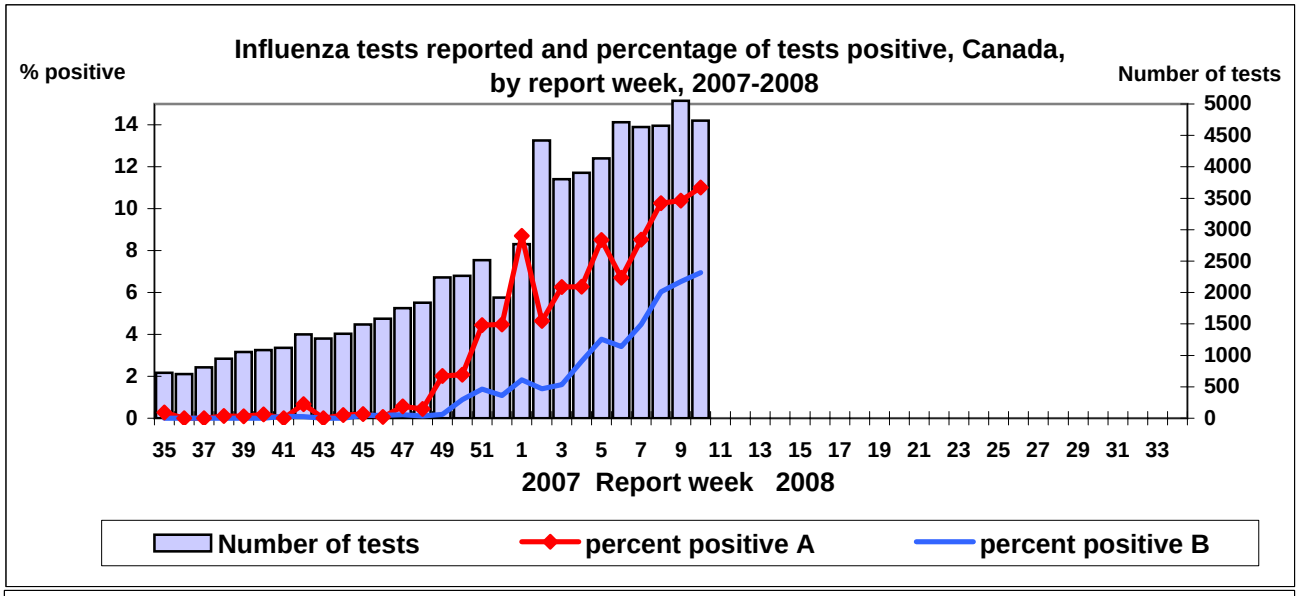


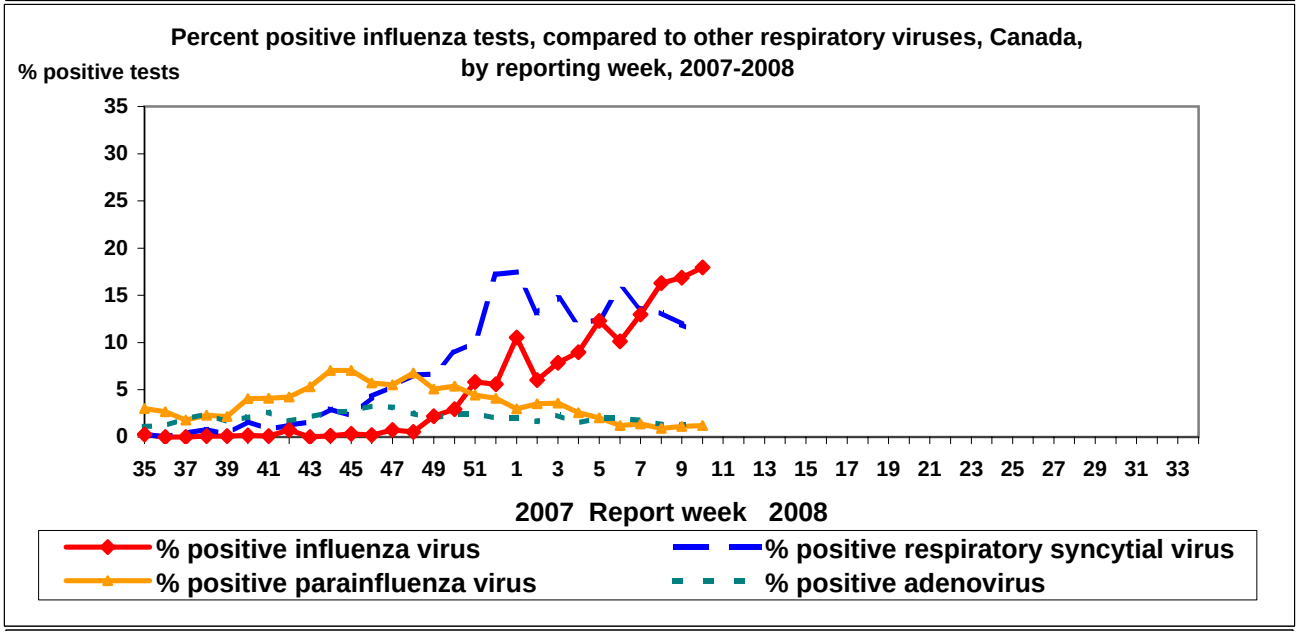
† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

Influenza Activity Level by Provincial and Territorial Influenza Surveillance Regions, Canada; March 2, 2008 to March 8, 2008 (Week 10)

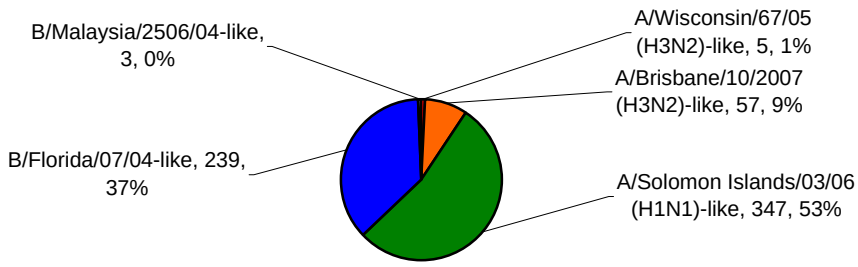


Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, **based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and outbreaks.** Please refer to detailed definitions on the last page. For areas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



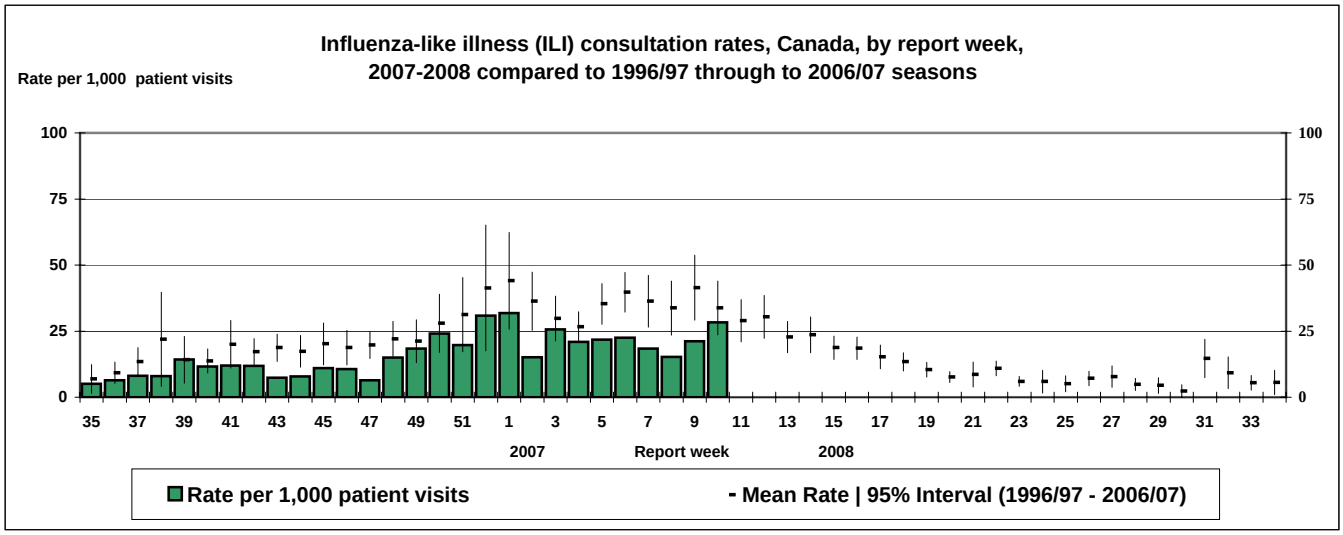


Influenza strain characterization, Canada, cumulative, 2007-2008 influenza season by the Respiratory Viruses Section at the National Microbiology Laboratory
(N=651)

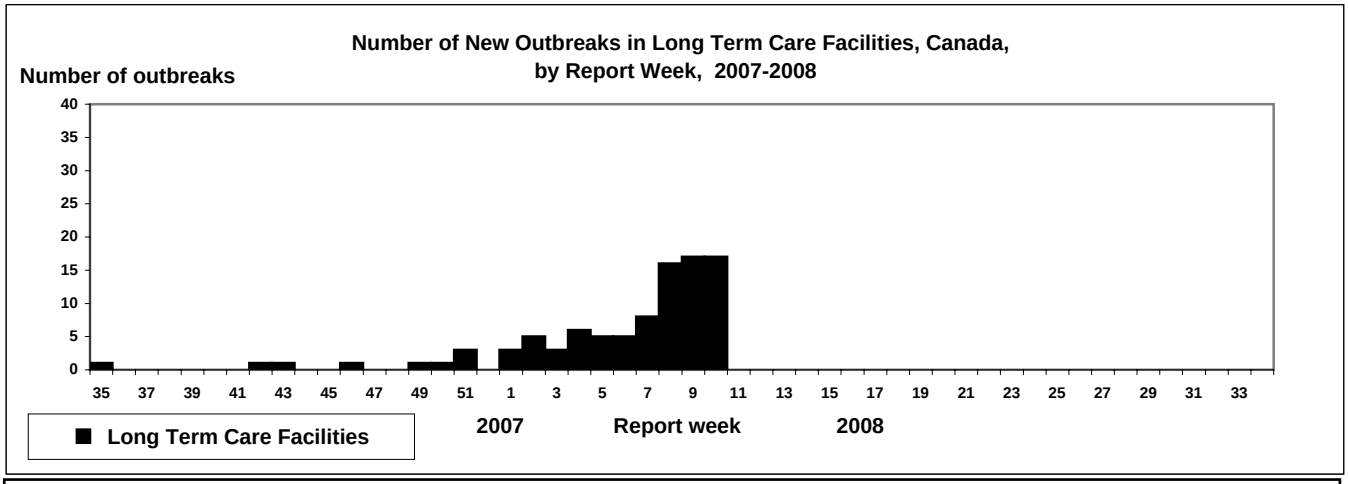


{ Strain characterization, number identified, per cent of total number

NACI recommends that the trivalent vaccine for the 2007-2008 season in Canada contain A/Solomon Islands/3/2006 (H1N1)-like virus; an A/Wisconsin/67/2005 (H3N2)-like virus; and a B/Malaysia/2506/2004-like virus.



Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons).



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 2007-2008 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 2007-2008 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