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

January 20, 2008 to January 26, 2008 (Week 04)

Influenza activity in Canada increasing in the West; a few oseltamivir-resistant A(H1N1) strains detected in Canada and Europe

During week 04, overall influenza activity levels in Canada increased steadily from previous weeks. In week 04, more regions reported widespread (n=4 from BC and AB) and localized influenza activity (n=8 from BC, AB, SK, MB, ON, & NB) compared to previous weeks. Eighteen regions reported no activity and 25 reported sporadic activity (see map) Note: No data was received from PEI this week. In week 04, the number of specimens that tested positive for influenza was 9% (351/3,884). Of the influenza detections to date, 77% were influenza A and 23% were influenza B (see table). Although influenza A detections continue to predominate in most provinces, influenza B detections have increased steadily over recent weeks; particularly in AB where 56% of influenza detections in the province to date were for influenza B viruses. This week, the ILI consultation rate was 21 ILI consultations per 1,000 patient visits (see ILI graph), which is within the expected range for this week. The sentinel response rate was 66%. Thirty-two new outbreaks of influenza or ILI were reported this week as follows: 6 LTCFs, 1 hospital, 24 schools, and 1 other.

Antigenic Characterization:

The National Microbiology Laboratory (NML) has characterized 243 influenza viruses for the 2007-2008 influenza season: 171 A(H1N1), 17 A(H3N2) and 55 B viruses. All influenza A(H1N1) viruses were antigenically similar to A/Solomon Islands/3/2006. Of the 17 influenza A(H3N2) viruses characterized, 5 were antigenically similar to A/Wisconsin/67/2005 and 12 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 55 influenza B isolates characterized, 3 were antigenically similar to B/Malaysia/2506/2004 and 52 were antigenically similar to B/Florida/4/2006 (belonging to the B/Yamagata lineage) (see pie chart).

Antiviral Resistance:

Since the start of the season, the NML has tested 188 influenza A isolates (163 H1N1 and 25 H3N2) for amantadine resistance and found that 23 (92%) of the 25 H3N2 isolates were resistant to amantadine and 4 (2.5%) of 163 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 184 influenza isolates (128 A/H1N1, 15 A/H3N2 & 41 B) for oseltamivir (Tamiflu) resistance and found that 8 (6.3%) of the 128 H1N1 isolates tested were resistant to oseltamivir.

The resistant isolates were from NF (1), ON (6) and BC (1). These oseltamivir resistant strains remain sensitive to the antiviral amantadine. PHAC is collaborating with provincial and territorial and international partners in monitoring, reporting and assessing the implications of the findings. While antivirals can be used to lessen the length and severity of influenza, vaccination remains the most effective method of preventing illness. This year's influenza vaccine protects against influenza A(H1N1) and therefore vaccination remains an effective measure in preventing illness.

Influenza-associated Paediatric Hospitalizations:

No new laboratory-confirmed influenza-associated paediatric hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network this week.

International:

WHO: During weeks 2–3, the level of overall influenza activity in the world increased slightly. An increase in both influenza activity and the number of influenza viruses detected was observed in most countries of northern Europe and North America, where mostly influenza A (H1N1) virus circulated. *<http://www.who.int/csr/disease/influenza/update/en/>*

CDC: During week 03, influenza activity continued to increase in the United States with more regions reporting widespread and regional activity. The proportion of specimens that tested positive for influenza virus increased to 11.1% this week. The majority of influenza detections to date were for influenza A viruses (85%). Since September 30, 2007, CDC antigenically characterized 197 influenza viruses: 101 influenza A(H1) (all A/Solomon Islands/3/2006), 53 influenza A(H3) (6 A/Wisconsin/67/2005-like and 46 A/Brisbane/10/2007-like, and 1 showed somewhat reduced titers with antisera produced against A/Wisconsin and A/Brisbane), and 43 influenza B viruses (3 belonging to the B/Victoria and 40 B/Yamagata lineage). *<http://www.cdc.gov/flu/weekly/>*

EISS: In week 4, 18 countries are currently reporting a medium or high intensity of influenza activity. Although influenza A(H1) is the dominant virus strain circulating in Europe this season, influenza B still represents 19% of the total influenza virus detections since the start of the season. A significant proportion (14%) of the A(H1N1) viruses circulating in Europe were resistant to oseltamivir with resistant viruses found in 9 European countries. *<http://www.eiss.org/cgi-files/bulletin_v2.cgi>*

Human Avian Influenza: Since 26 January 2008, the WHO reported 4 additional cases (3 fatal) of H5N1 avian influenza infection from Indonesia. *<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

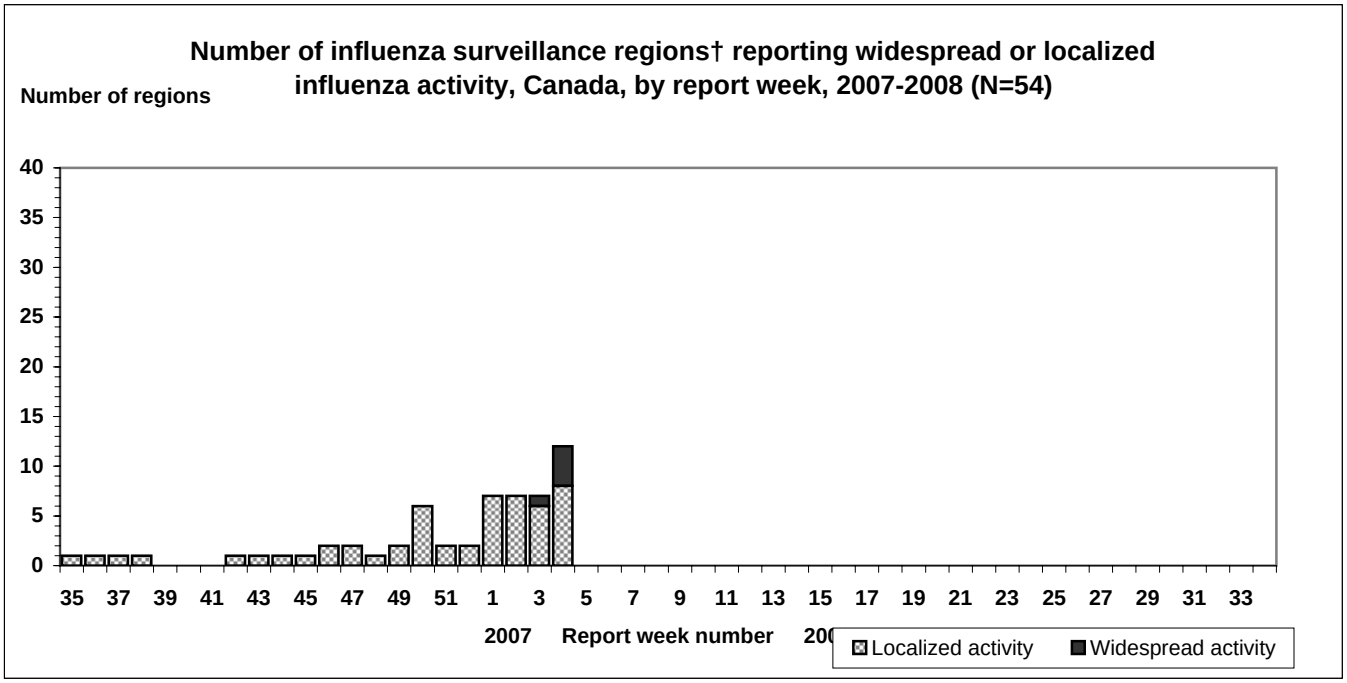
Province of reporting laboratories	Report Period: January 20, 2008 to January 26, 2008				Season to Date: August 26, 2007 to January 26, 2008			
	Total # of influenza	# of positive tests			Total # of influenza	# of positive tests		
		Influenza A	Influenza B	Total		Influenza A	Influenza B	Total
NL	39	2	0	2	226	15	0	15
PE	0	0	0	0	38	0	0	0
NS	26	1	1	2	256	2	2	4
NB	16	0	0	0	287	1	1	2
QC	858	48	7	55	8315	161	24	185
ON	1284	73	4	77	12351	657	24	681
MB	60	4	0	4	1484	6	1	7
SK	218	11	9	20	2502	56	33	89
AB	1209	61	82	143	14094	197	252	449
BC	174	45	3	48	1296	165	34	199
Canada	3884	245	106	351	40849	1260	371	1631

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.

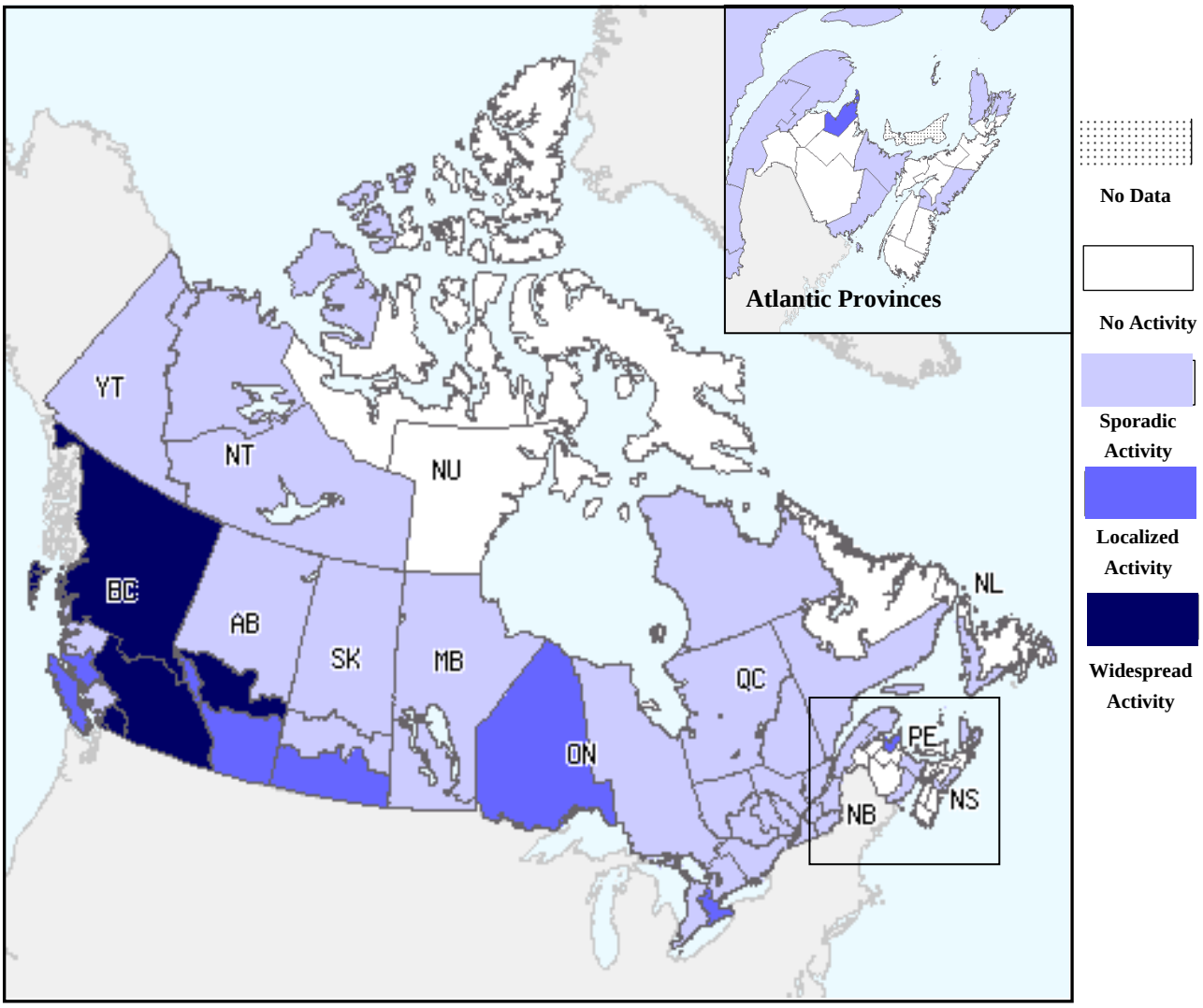
Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU)

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>

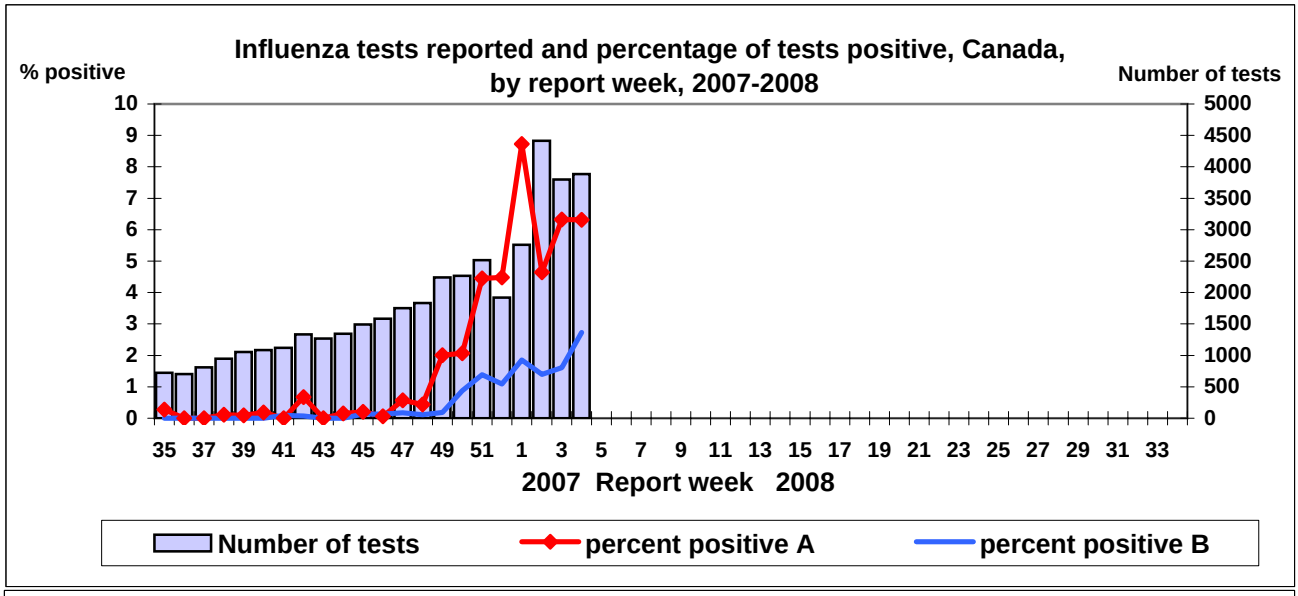


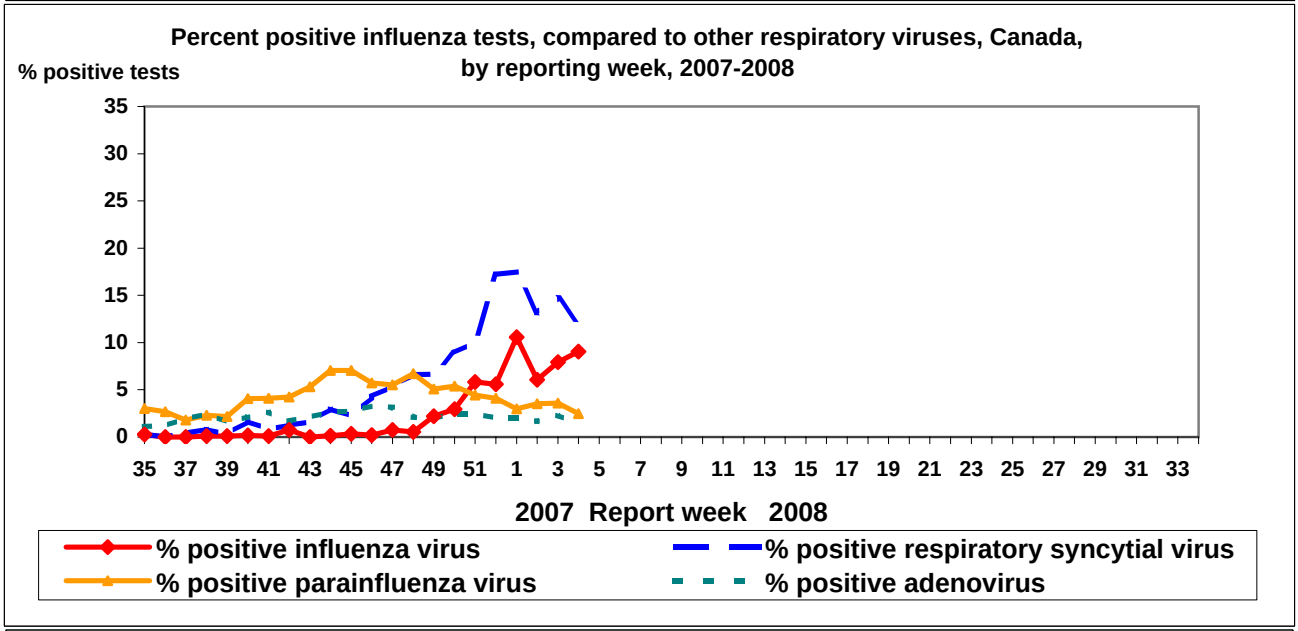
† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

Influenza Activity Level by Provincial and Territorial Influenza Surveillance Regions, Canada; January 20, 2008 to January 26, 2008 (Week 04)

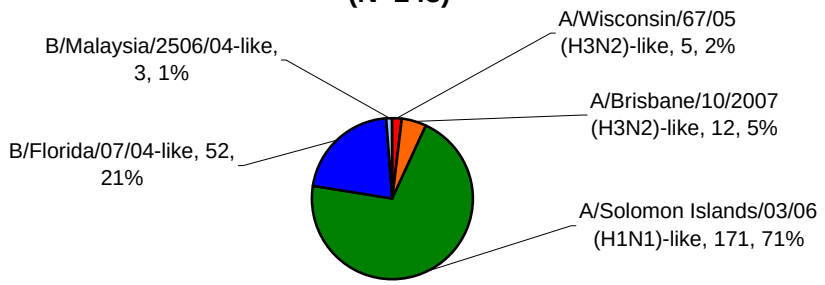


Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, **based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and outbreaks.** Please refer to detailed definitions on the last page. For areas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



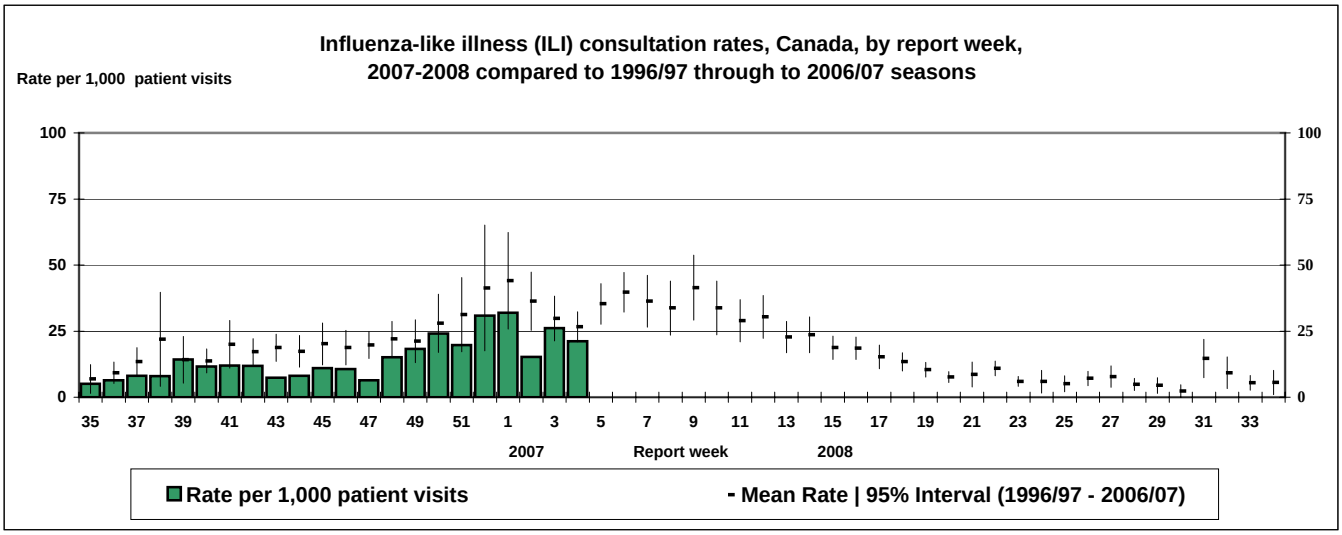


Influenza strain characterization, Canada, cumulative, 2007-2008 influenza season by the Respiratory Viruses Section at the National Microbiology Laboratory
(N=243)

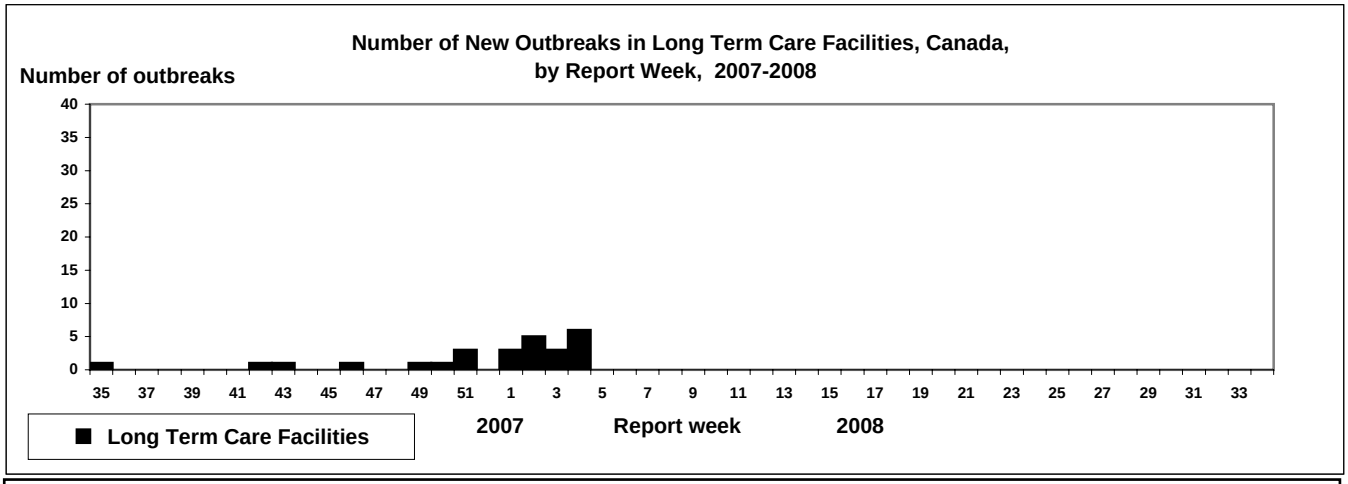


{ Strain characterization, number identified, per cent of total number

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