



Flu Watch

April 12, 2009 to April 18, 2009 (Week 15)

Overall influenza activity in Canada continues to decline; mostly sporadic activity reported

This week, 9 regions reported localized activity (in BC, AB & NL), 36 regions sporadic (in BC, AB, MB, ON, QC, MB, PE, NS, NL, YK, NT & NU) and 6 regions reported no activity (see map). (SK did not report) The proportion of tests that were positive for influenza decreased from the previous week (percentage positive = 9.4%; 282/3,017) (see table). To date this season, 60.5% (5,475/9,049) of detections are influenza A (see graph). This week, the ILI consultation rate was 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 59%. In week 14, 6 new influenza outbreaks were reported: 6 in LTCFs (BC, AB, ON & NS).

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, 163 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-eight isolates tested positive for the H274Y mutation (resistance = 100% or 148/148), with the other 15 specimens still pending confirmatory testing.

Influenza-associated Paediatric Hospitalizations:

In week 15, 3 laboratory-confirmed influenza-associated paediatric hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network. The three cases were from Ontario (1xA) and Quebec (2,A&B). To date, 404 hospitalizations have been reported of which 54% have been due to influenza A. The proportion of cases to date by age group are as follows: 14% were 0-5 month olds; 31% were 6-23 month olds; 24% 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: 10% from BC, 9% from AB, 4% from SK, 4% from MB, 28.5% from ON, 41% from QC, 3% from NS & 0.5% from NL.

International:

WHO: During the weeks 13-14, the level of influenza activity globally continued to decrease.

<<http://www.who.int/csr/disease/influenza/update/en/>>

CDC: During week 14, influenza activity continued to decrease in the United States; 259 (9%) specimens tested positive for influenza, of which 53% were influenza A and 47% were influenza B. Testing for antiviral resistance indicated that of the influenza virus A/H1N1 tested, 99.3% (743/748) were resistant to oseltamivir and 0.4% (3/729) resistant to amantadine. Of the influenza A/H3N2 viruses tested for resistance, 100% (108/108) were resistant to amantadine. All tested viruses remain sensitive to zanamivir. To date this season, 53 influenza-associated pediatric deaths have been reported to the CDC (8 of which were reported in week 13). Bacterial co-infections were confirmed in 12 (43%) of 28 tested children; Staphylococcus aureus was identified in 8 (67%) of 12 tested children.

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

EISS: Influenza activity in Europe is coming to an end for the 2008-2009 season. In week 16, influenza activity remained at baseline levels in almost all countries and regions of Europe. Only Slovakia and the Russian Federation reported medium activity, but for both peak activity was several weeks ago. Sentinel virus detections continue to remain low. Influenza A(H3N2) has been the dominant virus in Europe, accounting for an estimated 84% of total virus detections this season. Of influenza B viruses that have been antigenically and/or genetically characterized the majority 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 552 A(H3N2) isolates that were tested for adamantanes susceptibility, 552 (100%) were resistant. Of the 234 A(H1N1) virus isolates tested for resistance against neuraminidase inhibitors, 230 (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 15, the WHO reported one new case of human H5N1 avian influenza infection in Egypt.

<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**

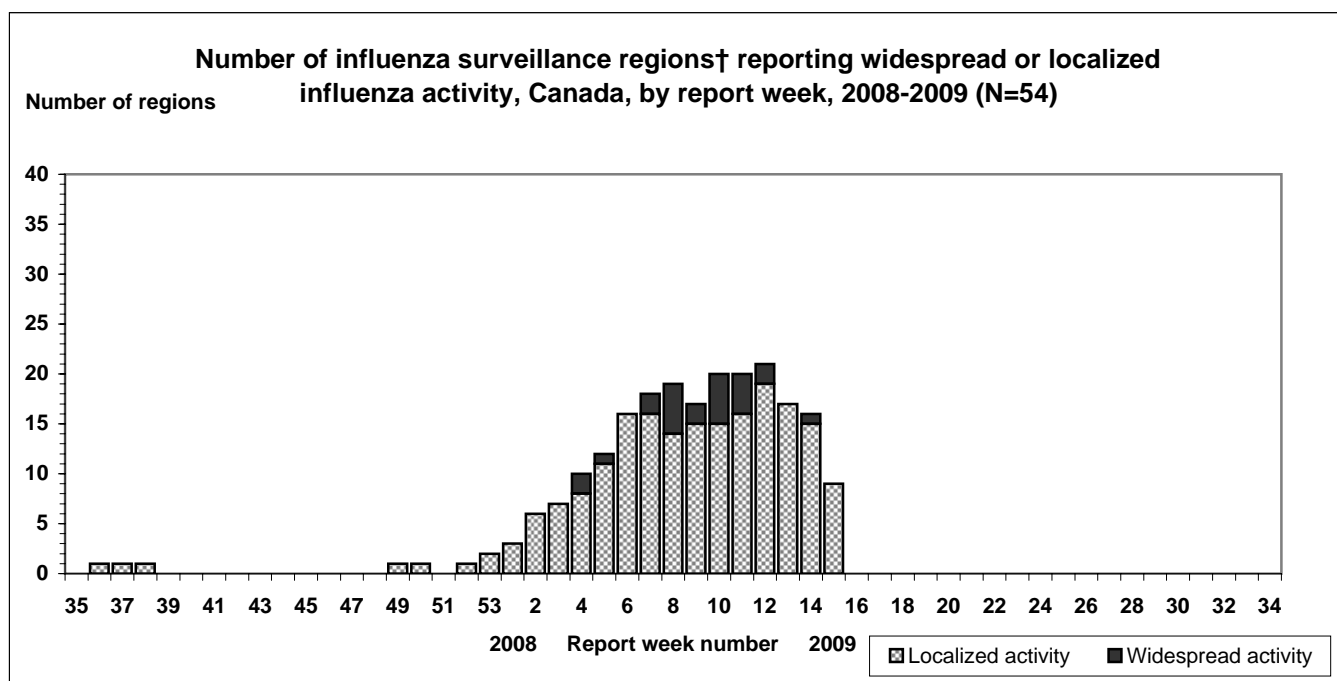
Province of reporting laboratories	Report Period: April 12, 2009 to April 18, 2009				Season to Date: August 24, 2008 to April 18, 2009			
	Total # of influenza	# of positive tests			Total # of influenza	# of positive tests		
		Influenza A	Influenza B	Total		Influenza A	Influenza B	Total
NL	24	1	0	1	858	103	19	122
PE	3	0	1	1	186	14	9	23
NS	26	1	2	3	891	56	57	113
NB	54	5	5	10	1477	244	86	330
QC	1132	43	33	76	31592	2283	1364	3647
ON	712	44	6	50	27679	1076	1318	2394
MB	59	4	5	9	2029	43	33	76
SK	194	51	7	58	4945	219	167	386
AB	734	24	22	46	21232	817	331	1148
BC	79	19	9	28	2803	620	190	810
Canada	3017	192	90	282	93692	5475	3574	9049

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.

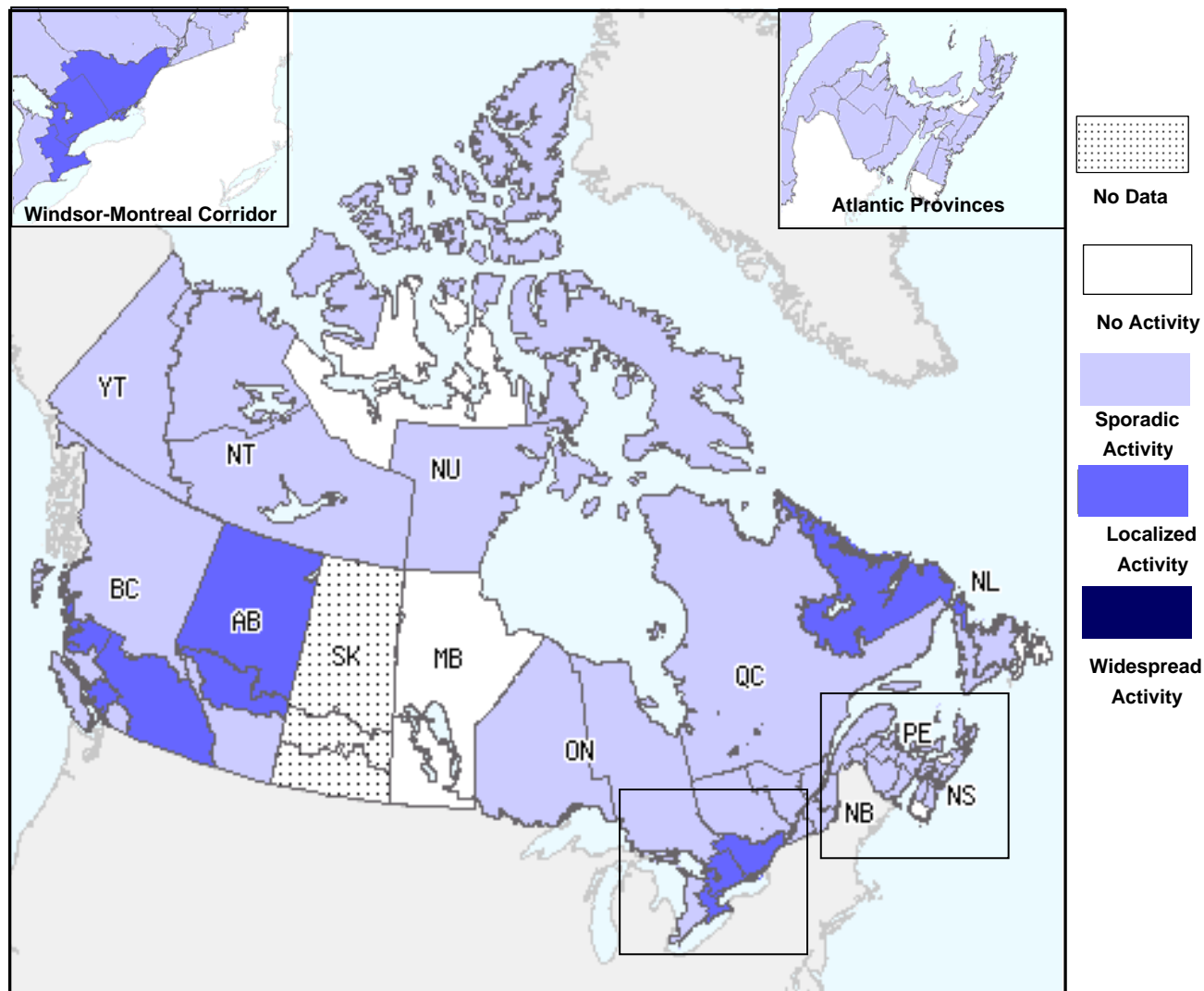
Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU)

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>>

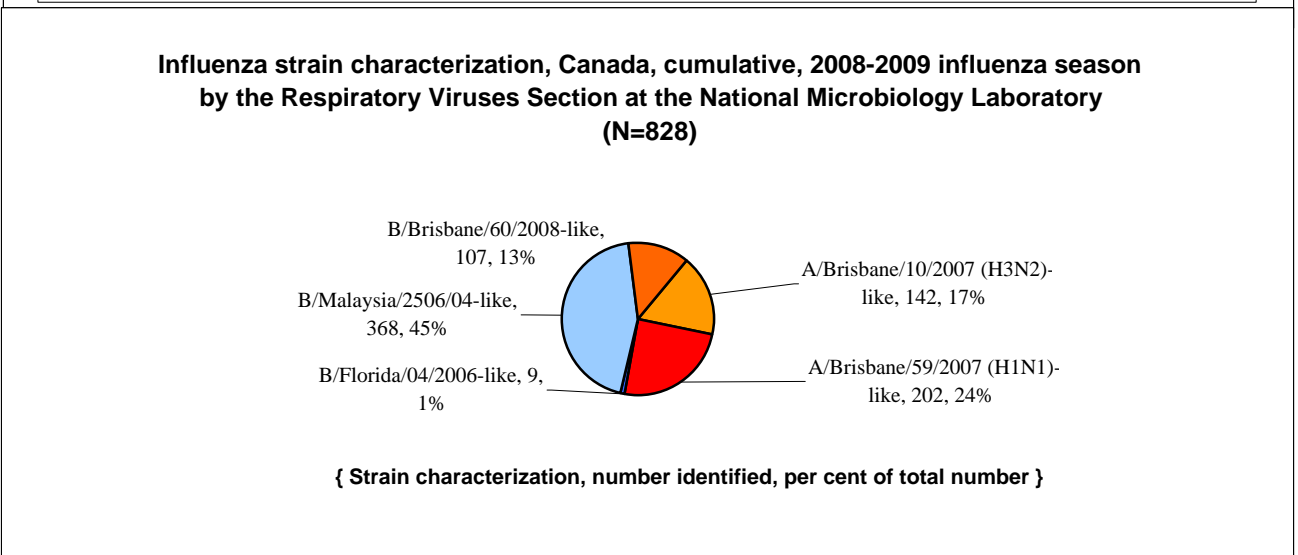
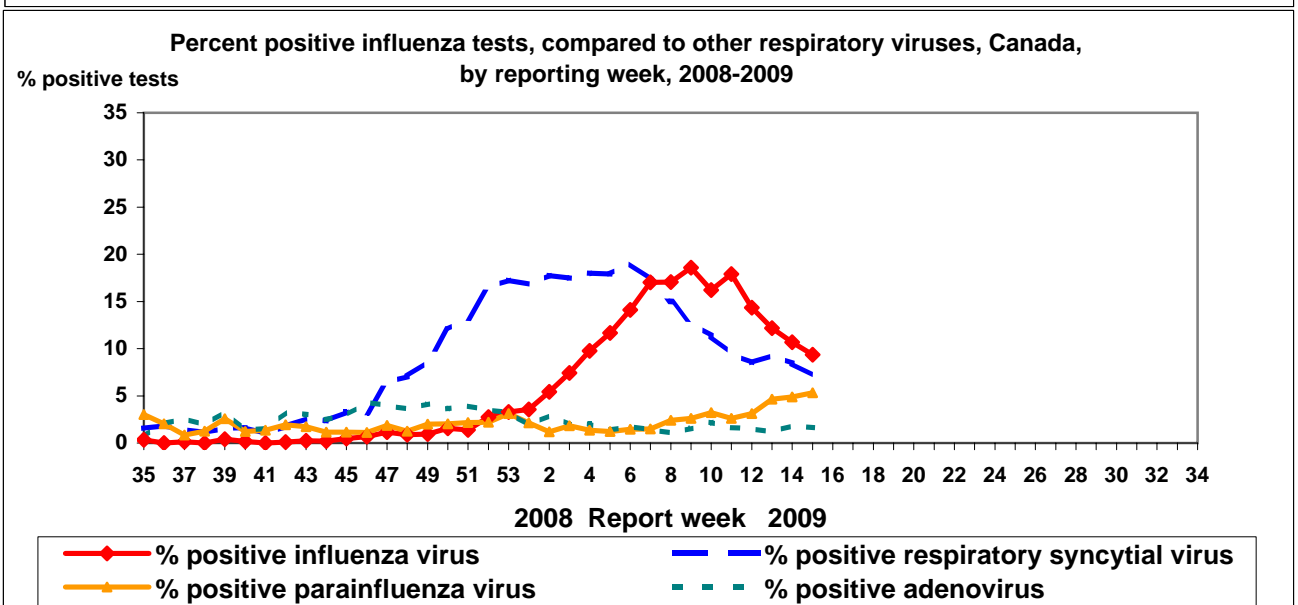
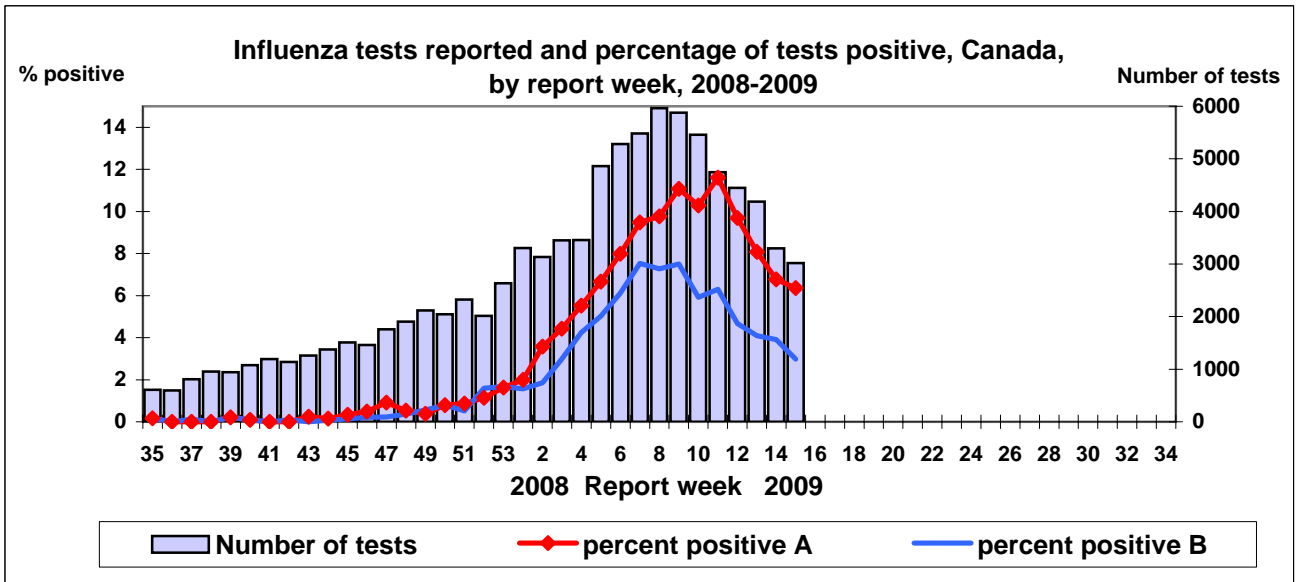


† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

**Influenza Activity Level by Provincial and Territorial Influenza Surveillance Regions,
Canada; April 12, 2009 to April 18, 2009 (Week 15)**



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.

