

November 8, 2009 to November 14, 2009 (Week 45)

- Nationally, the activity level reported this week remained similar to the previous week. While the number of hospitalizations and deaths still increased, the proportion of positive influenza tests was comparable and the national ILI consultation rate and the number of influenza outbreaks reported decreased.
- The Pandemic (H1N1) 2009 strain accounted for nearly 100% of the positive influenza A subtyped specimens this week.
- The intensity of Pandemic (H1N1) 2009 in the population was high with 1,674 hospitalizations, 261 ICU admissions and 84 deaths reported this week. Hospitalized cases occurred in all provinces and territories (P/T) that reported this week while the deaths were from all P/T except MB, PE, YT, NT and NU. From August 30 to November 14, 2009, a total of 3,965 hospitalized cases including 576 cases admitted to an intensive care unit (ICU) (14.5%) as well as 142 deaths had been reported. Numbers of new deaths were more than two times higher than last week.
- The number of hospitalizations and deaths reported this week were higher than the overall number of hospitalizations and deaths for the first wave.
- While the proportion of severe cases (ICU admissions and deaths) among all hospitalized cases was lower in previous weeks, the proportion of deaths over all hospitalized (5%) this week is back to what was observed in the first wave.

Pandemic (H1N1) 2009 virus Surveillance and Epidemiology

A total of 5,438 hospitalized cases including 867 cases admitted to ICU and 417 cases required ventilation as well as 219 deaths of Pandemic (H1N1) 2009 were reported to PHAC since the beginning of the Pandemic. Core data was available for 4,905 (90.2%) hospitalizations, 849 (97.9%) ICU admissions and 206 (94.1%) deaths. There was more than a two-fold increase in the number of deaths (84 vs. 35) and almost a two-fold increase in the number of ICU admissions (261 vs. 163) reported during week 45 as compared to week 44. The number of hospitalizations and deaths reported this week were higher than the overall number of hospitalizations and deaths for the first wave.

While the proportion of severe cases (ICU admissions and deaths) among all hospitalized cases was lower in previous weeks, the proportion of deaths over all hospitalized (5%) this week is back to what was observed in the first wave. Comparing the period from August 30 to November 14, 2009 to the period up to August 29, 2009, the median age was higher while the proportion of females affected, the proportion of people of Aboriginal origin, the proportion of underlying medical conditions and the proportion of pregnant women among females of childbearing age were lower in the period from August 30 to November 14, 2009 among all severity of illness (hospitalizations, ICU admissions and deaths) (Characteristics tables). Please note that with the number of cases reported in the last few weeks, trends and characteristics of the populations affected may change rapidly.

Since August 30, 2009, all the provinces and territories except SK, MB and NU had cumulative crude hospitalization rates that surpassed the respective hospitalization rates in the period before August 29, 2009. During the period of August 30 to November 14, 2009, women and men were equally distributed among hospitalized, ICU-admitted and fatal cases. The under 20 year olds continued to have the highest hospitalization rates while the 45-64 year olds and the under 5 year olds had the highest ICU admission rates per 100,000 population. The highest mortality rates were still among those 45 years of age and older (data not shown).

Weekly and cumulative numbers of hospitalized cases, ICU admissions and deaths among Pandemic (H1N1) 2009 confirmed cases, Canada, to November 14, 2009†

Province/ Territory	This week (Nov. 8-14, 2009)*			From August 30, 2009 to November 14, 2009*			Up to August 29, 2009**†		
	Hospitalized cases	ICU admissions	Deaths	Hospitalized cases	ICU admissions	Deaths	Hospitalized cases	ICU admissions	Deaths
BC ¹	154	20	6	703	87	24	52	20	5
AB	413	80	22	765	155	35	128	29	7
SK	9	8	2	13	11	4	23	12	4
MB ¹	12	0	0	25	1	1	225	43	7
ON	311	41	24	691	86	36	378	67	25
QC	695	98	23	1391	184	31	572	104	27
NB ¹	36	6	2	82	8	2	2	1	0
NS ²	--	--	--	66	12	1	17	8	1
PE ¹	15	3	0	36	6	0	1	0	0
NL ¹	23	3	5	139	18	7	3	1	0
YT	3	1	0	11	2	1	0	0	0
NT	2	1	0	42	6	0	6	0	0
NU	1	0	0	1	0	0	66	6	1
Canada	1674	261	84	3965	576	142	1473	291	77

*Based on reporting date. ** Based on epidemiological date, hospitalization date and reporting date.

¹ These provinces reported aggregate counts this week. ² No report received this week from NS.

† Note that the criteria used to select the cases up to August 29, 2009 have changed, which may explain the small differences compared to the previous

Descriptive characteristics of laboratory-confirmed Canadian Pandemic (H1N1) 2009 hospitalized cases, ICU-admitted cases and deaths with core information available, reported to PHAC as of November 14, 2009†

	From August 30, 2009 to November 14, 2009			From April to August 29, 2009		
	Hospitalized cases (n=3,432)	Cases admitted to ICU (n=558)	Deaths (n=129)	Hospitalized cases (n=1,473)	Cases admitted to ICU (n=291)	Deaths (n=77)
Females, %	49.6	48.7	51.9	51.4	57.0	62.3
Median age	26.0	45.5	52.5	23.0	37.0	51.0
Aboriginal status, %	4.5	5.9	7.8	17.9	15.1	11.7
Underlying medical conditions ¹ , %	59.0 (800/1,356)	64.2 (249/388)	70.4 (57/81)	63.7 (634/996)	73.9 (156/211)	84.7 (50/59)
Pregnancy ² , %	16.8 (94/558)	10.9 (11/101)	0.0	28.4 (78/275)	19.7 (15/76)	28.6 (4/14)

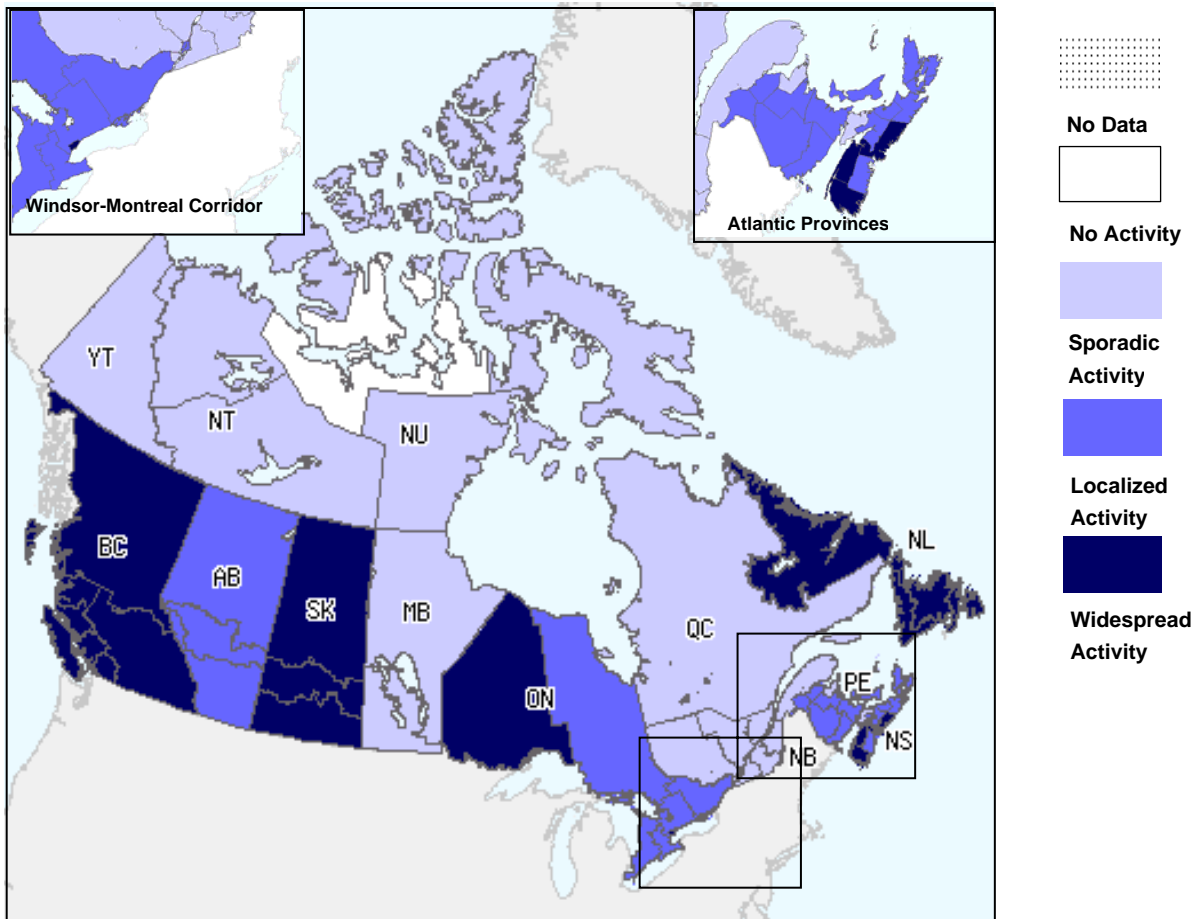
¹ Proportion of cases with at least one underlying medical condition (excluding pregnancy) among those for whom the information was available. Please note that a reclassification of underlying medical conditions was performed this week which may have affected the observed proportion of those with underlying conditions.² Percent of pregnant women among women 15 to 44 years of age. †Note that the criteria used to select the cases up to August 29, 2009 have changed, which may explain the small differences compared to the previous week.

Overall Influenza Summary - Week 45 (November 8 to November 14, 2009)

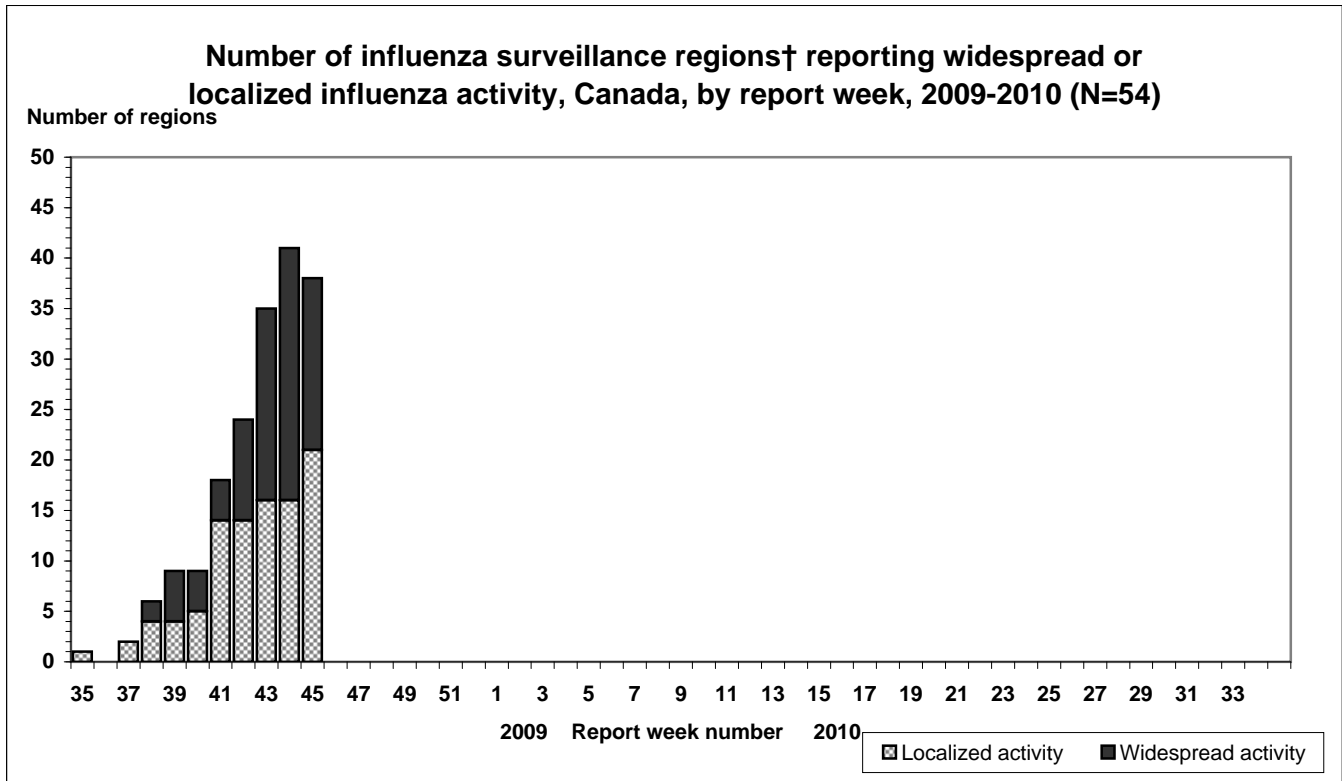
Nationally, the overall activity level reported this week remained similar to the previous week. While the number of hospitalizations and deaths still increased, the proportion of positive influenza tests was comparable and the national ILI consultation rate and the number of influenza outbreaks reported decreased.

Seventeen regions reported widespread activity in BC, SK, ON, NS & NL and twenty-one regions in AB, ON, QC, NB, NS & PE reported localized activity, while fifteen regions reported sporadic activity in MB, QC, NB, NS, YK, NT & NU and one region in NU reported no activity. The 374 influenza outbreaks reported this week were all in schools except 14 in hospitals and residential institutions (BC, AB, ON, QC, NB & NL) and 10 in an unspecified location (AB, SK & ON). The schools outbreaks were in SK (152), BC (100), NS (61), PE (14), AB (12) and NB (11). Note that this is the first year that all the provinces and territories are reporting on influenza outbreaks in schools (greater than 10% absenteeism on any day most likely due to ILI) which is increasing considerably the total number of outbreaks reported compared to previous years.

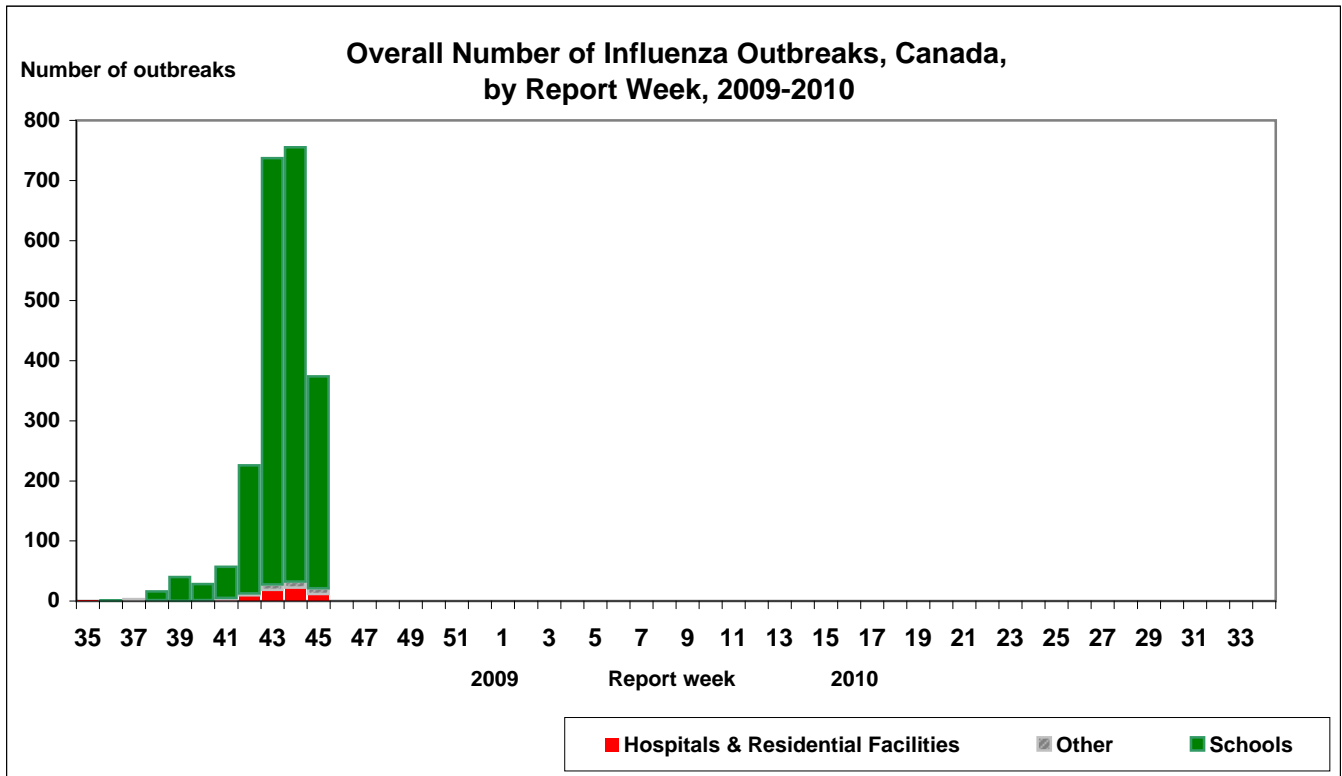
Map of overall Influenza activity level by provinces and territories, Week 45, Canada



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 reported 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.

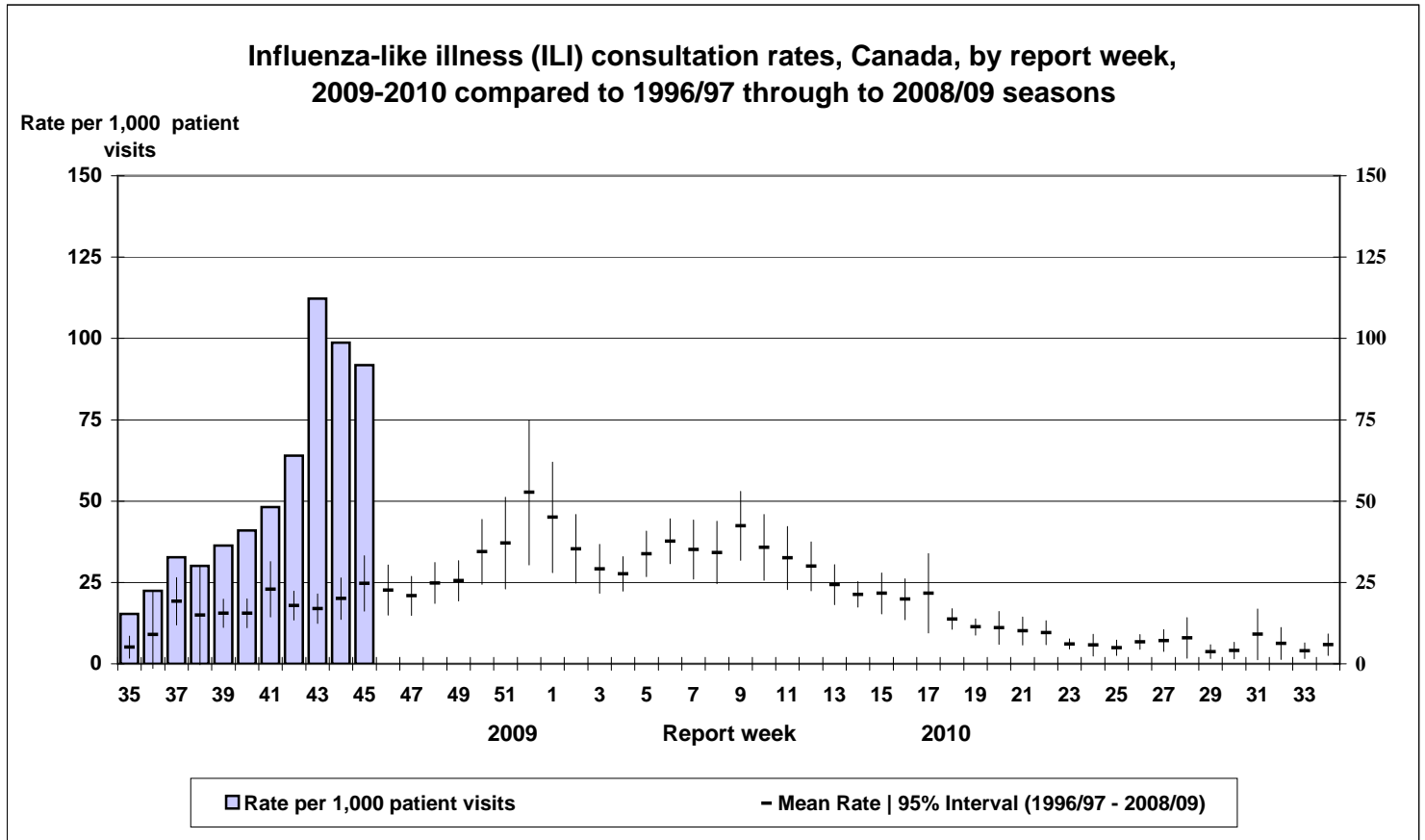


† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.



ILI consultation rate

This week, the national ILI consultation rate was 91 consultations per 1,000 patient visits (see ILI graph) which was lower for a second consecutive week. This is likely due to the fact that many P/T have established special clinics for assessing patients with ILI. Six provinces and territories (BC, SK, MB, ON, NB and NL) had higher ILI consultation rates compared to their ILI rates in previous weeks. People under 20 years of age still had the highest consultation rates, with 173 and 208 per 1,000 patient visits among children under 5 years of age and among those 5 and 19 years of age, respectively.



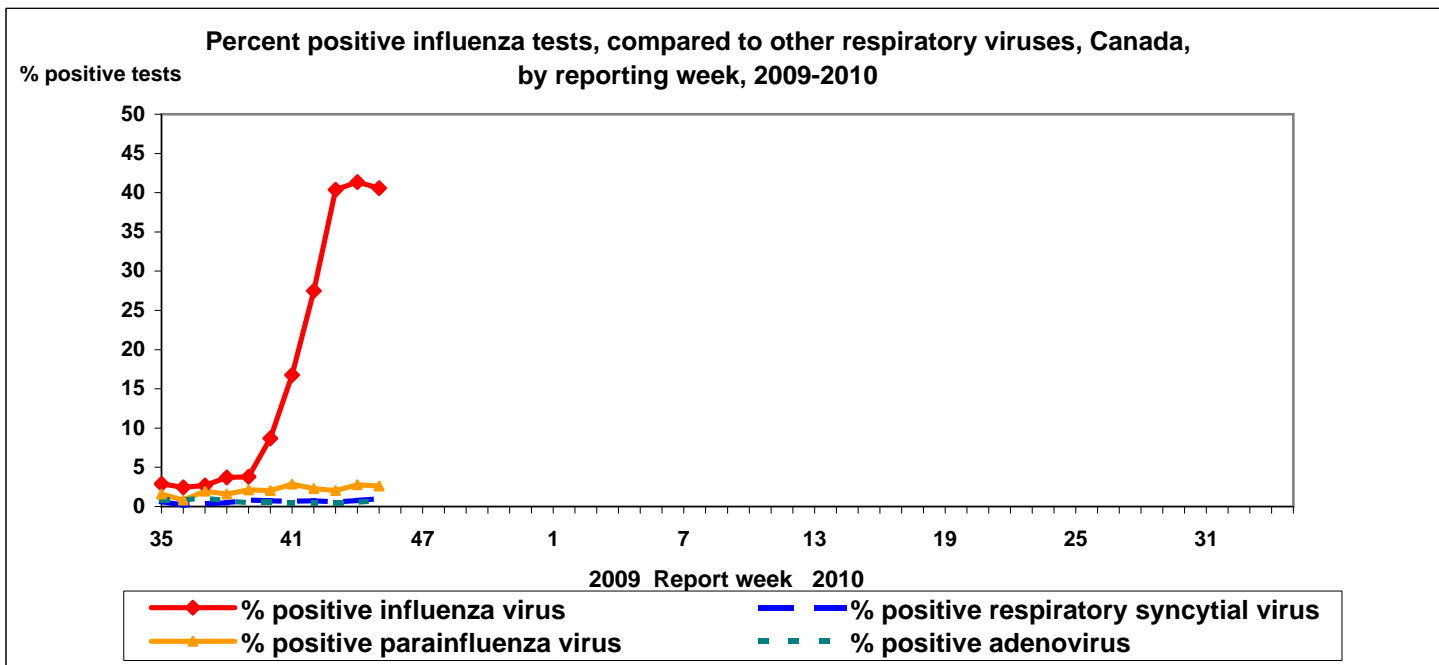
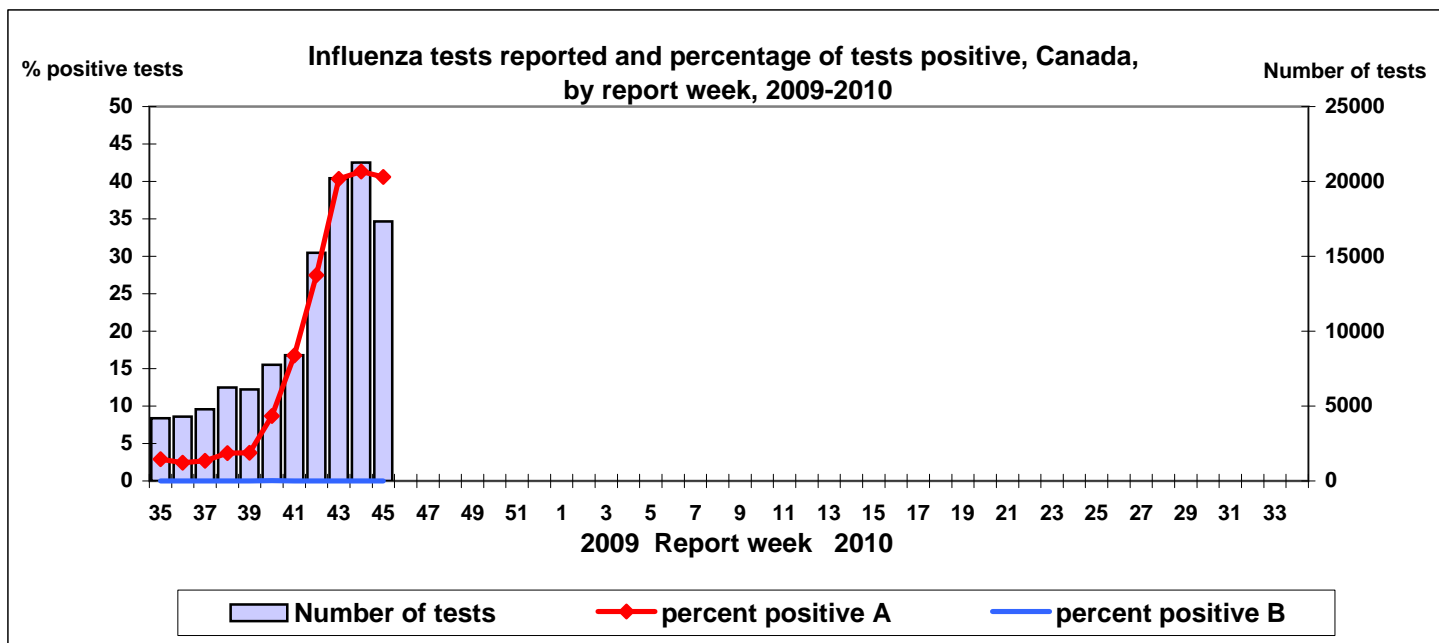
Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons). Delays in the reporting of data may cause data to change retrospectively.

Paediatric Influenza Hospitalizations and Deaths

In week 45, 184 laboratory-confirmed influenza-associated paediatric hospitalizations and 1 death were reported through the Immunization Monitoring Program Active (IMPACT) network. The new death was a female aged between 10 and 16 years of age without any known underlying medical conditions. 180 Pandemic (H1N1) 2009 and 4 other hospitalizations due to unsubtype influenza A were reported this week. 1,138 hospitalizations had been reported since week 17 (April 26): 96.7% of these hospitalizations were due to Pandemic (H1N1) 2009. Since the beginning of the pandemic, six deaths due to Pandemic (H1N1) 2009 had been reported through the IMPACT network among children under 16 years of age.

Laboratory Surveillance Summary

This week, the proportion of tests that were positive for influenza was 40.6% which is similar to the past two weeks (see Tests table). While British Columbia and the Prairies had a lower proportion of positive tests for influenza compared to the previous weeks, Quebec had a higher proportion and Atlantic had a similar proportion. This week, a total of 7,023 specimens tested positive for influenza this week (all A except 1 B) and 99.9% of the positive influenza A subtyped specimens were Pandemic (H1N1) 2009. Note that QC has reported this week 4 positive specimens for A/H3N2 and 1 B.



Weekly & Cumulative numbers of positive influenza specimens by Provincial Laboratories

Reporting provinces	Weekly (Nov. 8-14, 2009)						Cumulative (Aug. 30 to Nov. 14, 2009)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand (H1N1)	A (NS)*	Total	A Total	A(H1)	A(H3)	Pand (H1N1)	A (NS)*	Total
BC	717	0	0	717	0	0	5763	0	1	5200	562	0
AB	442	0	0	352	90	0	5264	1	1	4715	547	0
SK	588	0	0	550	38	0	1894	0	1	1660	233	0
MB	263	0	0	258	5	0	574	0	0	547	27	0
ON	1279	0	0	395	884	0	6601	1	0	2824	3776	4
QC	2871	0	4	2867	0	1	7967	1	37	7929	0	3
NB	594	0	0	594	0	0	1426	1	1	1409	15	1
NS	141	0	0	138	3	0	618	0	0	599	19	0
PE	10	0	0	9	1	0	86	0	0	84	2	0
NL	127	0	0	127	0	0	861	0	0	861	0	0
Canada	7032	0	4	6007	1021	1	31054	4	41	25828	5181	8

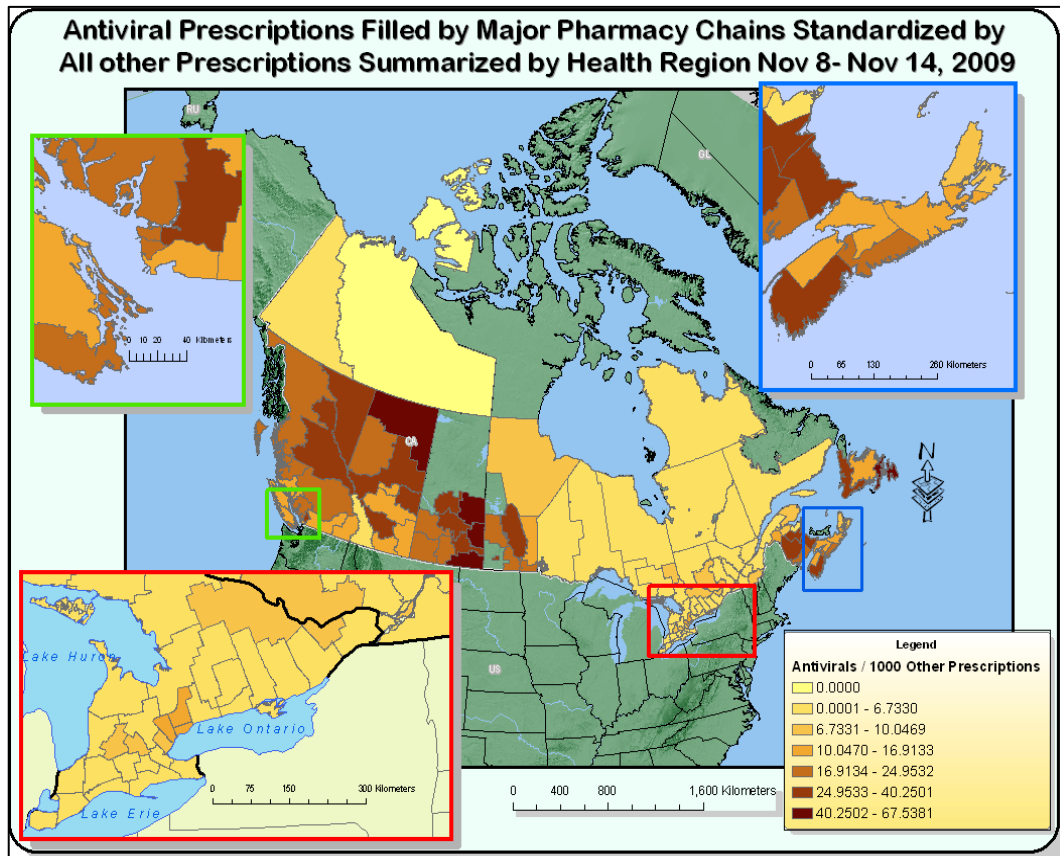
Specimens from NT, YT, and NU are sent to reference laboratories in other provinces.

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.

* Not subtyped

Sale of antivirals (AV) in Canada

During week 45, antiviral prescriptions monitoring results demonstrate decreases in antiviral prescriptions among the provinces and territories.



Reference: H1N1 Antiviral and OTC Surveillance Weekly Report. CFEZID, PHAC.

Canadian situation

Antigenic Characterization

Since September 1, 2009, NML has antigenically characterized 218 Pandemic (H1N1) 2009 viruses and three seasonal influenza viruses (one influenza A/H1N1, one influenza A/H3N2 and one B virus) that were received from Canadian laboratories. All 218 Pandemic influenza A (H1N1) viruses characterized were antigenically related to A/California/7/2009, which is the pandemic reference virus selected by WHO as Pandemic (H1N1) 2009 vaccine. The one seasonal influenza A/H1N1 virus characterized was related to A/Brisbane/59/07, the one seasonal influenza A (H3N2) virus characterized was related to A/Brisbane/10/07 and the one influenza B virus characterized was antigenically related to B/Brisbane/60/08, which are the components recommended for the 2009-10 influenza vaccine.

Antiviral Resistance

NML: Pandemic (H1N1) 2009 viruses tested so far have been sensitive to zanamivir (114 samples) but resistant to amantadine (84 samples). Of the 125 Pandemic (H1N1) 2009 viruses tested, 122 were sensitive to oseltamivir and three viruses were resistant to oseltamivir with the H275Y mutation. The three resistant cases, 2 from Ontario and 1 from Quebec, were associated with oseltamivir treatment.

Provinces: Three cases of oseltamivir resistant Pandemic (H1N1) 2009 were reported to date in Canada from the province of Quebec on July 21, 2009, from Alberta on September 15, 2009 and from Ontario on October 13, 2009.

Vaccine Coverage and Safety

As of November 7, 2009, a total of 6.6 million doses of Pandemic (H1N1) 2009 vaccine were distributed. 634 adverse events and 36 serious adverse events were reported from October 21 to November 7, 2009. The most frequently reported events were minor and included nausea, dizziness, headache, fever, vomiting and injection site reactions. The 36 serious adverse events included several reports of febrile seizures and anaphylaxis. One of the reported cases of anaphylaxis has been fatal and is being investigated. No unadjuvanted vaccine was administered during this time period as it was not delivered to provinces and territories until November 8, 2009.

<<http://www.phac-aspc.gc.ca/alert-alerte/h1n1/vacc/addeve-eng.php>>

International update

Global information

WHO: The winter influenza season, which began unusually early across much of the Northern Hemisphere, showed early signs of peaking in parts of North America but was intensifying across much of Europe and Central and Eastern Asia. Several countries and regions where Pandemic (H1N1) 2009 began circulating early in the fall may be approaching the peak of their influenza activity (for example: southern and southeastern parts of the US, Iceland, Ireland and Northern Ireland (UK), and the northern island of Hokkaido in Japan). Over 99% of subtyped influenza A viruses in Europe were Pandemic (H1N1) 2009 with the exception of the Russian Federation where <10% of viruses subtyped were seasonal influenza subtypes.

Antiviral resistance: To date, 52 resistant Pandemic (H1N1) 2009 viruses have been detected and characterized worldwide. All of these viruses show the same H275Y mutation that confers resistance to the antiviral oseltamivir. <<http://www.who.int/csr/disease/swineflu/updates/en/index.html>>

Northern Hemisphere

United States: ILI consultations decreased for the second consecutive week, although still exceeding what was normally seen during the peak of most regular influenza seasons. Forty-six states reported widespread influenza activity this week. Since August 30, CDC has received 117 reports of influenza-associated paediatric deaths that occurred during the current influenza season, for a total of 156 deaths in children associated with Pandemic (H1N1) 2009. Of the 35 deaths reported this week, 26 were associated with Pandemic (H1N1) 2009 infection, 8 were associated with influenza A virus for which the subtype is undetermined, and one was associated with an influenza B infection. In week 44, 30.1% of specimens submitted to the CDC tested positive for influenza, of which 99.5% were influenza A. Of these 74.2% were Pandemic (H1N1) 2009 and 25.9% were not subtyped. In the US during week 44, influenza B viruses co-circulated at low levels with Pandemic (H1N1) 2009. <<http://www.cdc.gov/flu/weekly/> and <http://www.cdc.gov/h1n1flu/update.htm>>

ECDC: At least 10 countries of Western Europe (Iceland, Poland, Romania, Belgium, Germany, the Netherlands, Norway, Spain, Sweden and the United Kingdom) now reported that the proportion of sentinel samples testing positive for influenza exceeded 20%, consistent with active circulation of Pandemic (H1N1) 2009. Across Europe, the percentage of influenza-positive sentinel specimens was 43% this week. Of the 61 patients with Severe Acute Respiratory Illness (SARI) reported to the ECDC this week, 21 needed intensive care treatment (of whom 76% required ventilator support), 78% were younger than 45 years, and 36% had no underlying medical condition. <http://www.ecdc.europa.eu/en/activities/surveillance/EISN/Pages/EISN_Bulletin.aspx>

Ukraine: As of 14 November, Ukraine reported over 1 million cases, nearly 75,000 hospitalizations, and approximately 200 deaths due to influenza and acute respiratory illness (ARI). Rates of ARI were higher than any reported for six years, and in some regions for 13 years. Preliminary testing of 34 specimens by WHO collaborating centres has not revealed any significant changes in the Pandemic (H1N1) 2009 circulating in Ukraine, and the WHO reported that the numbers of severe cases do not appear to be excessive when compared with other countries. Many deaths have been attributed to viral pneumonia and Acute Respiratory Distress Syndrome (ARDS). Healthcare workers have been infected, with reports of 3,500 ill, 300 hospitalized, and 4 deaths in the Lviv region.

<<http://www.who.int/csr/disease/swineflu/updates/en/index.html>>

<[http://www.ecdc.europa.eu/en/healthtopics/Pages/Influenza_A\(H1N1\)_Outbreak.aspx](http://www.ecdc.europa.eu/en/healthtopics/Pages/Influenza_A(H1N1)_Outbreak.aspx)> and ProMed

Ireland: Although influenza activity continued to be widespread, there was a decrease in several influenza indices during week 45, including the GP consultation rate for ILI, the number of laboratory-confirmed cases, hospitalizations, and outbreaks. The proportion of sentinel specimens testing positive for Pandemic (H1N1) 2009 was 35.8%. Children and young adults remained the most affected groups; 81.1% of cases are less than 35 years of age. As of 11 November, there have been 15 deaths among confirmed cases of Pandemic (H1N1) 2009. <<http://www.hpsc.ie/hpsc/A-Z/EmergencyPlanning/AvianPandemicInfluenza/SwineInfluenza/Surveillance%20Reports/>>

United Kingdom: The weekly influenza/ILI consultation rates decreased in the UK this week, though remained above the winter baseline thresholds. HPA modelling gave an estimate of 64,000 (range 32,000 – 140,000) new cases in England this week. There were a total of 1355 new patients hospitalized in England with suspected Pandemic (H1N1) 2009 in the week from 5 to 11 November (a decrease from 1431 in the previous week).

<<http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1242949541993?p=1242949541993>>

China: The proportion of sentinel hospital visits for ILI and of respiratory samples testing positive for influenza, continued to increase over the past 3-4 weeks. More than 80% of influenza viruses isolated in China were Pandemic (H1N1) 2009. Media reports China was stepping up its H1N1 vaccination drive after cases increased and the death toll recently rose from 16 to 30 in 3 days. The health ministry numbered confirmed cases at 59,478 and said 240 people were in critical condition.

<<http://www.who.int/csr/disease/swineflu/updates/en/index.html>> and CIDRAP reports

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.

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).

ILI definition for the 2009-2010 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 2009-2010 season

Schools: greater than 10% absenteeism on any day most likely due to ILI.

Hospitals and 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. Residential institutions include but not limited to long-term care facilities (LTCF), prisons.

Other: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. workplace.

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