

November 1, 2009 to November 7, 2009 (Week 44)

- Nationally, there was a considerable increase in the influenza activity level reported this week with a proportion of positive influenza tests of more than 38%, the national ILI consultation rate of almost 100 per 1,000 patient visits, 25 regions reporting widespread activity and over 750 influenza outbreaks reported. This increased activity occurred in almost all provinces and territories.
- The Pandemic (H1N1) 2009 strain accounted for nearly 100% (99.8%) of the positive influenza A subtyped specimens.
- The intensity of Pandemic (H1N1) 2009 in the population was high with 1,324 hospitalizations and 35 deaths reported this week. Hospitalized cases were reported in all provinces and territories that sent the weekly data² except MB and NU while the deaths were from all P/T except NB, PE, NT and NU. From August 30 to November 7, 2009, a total of 2,295 hospitalized cases including 317 cases admitted to an intensive care unit (ICU) (13.8%) as well as 59 deaths had been reported. Numbers of new deaths were four times higher than last week.
- So far, the proportion of severe cases (ICU admissions and deaths) among all hospitalized cases was lower than in the period up to August 29, 2009.
- The activity levels reported during the previous weeks were even higher than the peak period of the first wave (e.g. the three first weeks of June, 2009).

Pandemic (H1N1) 2009 virus Surveillance and Epidemiology

A total of 3,764 hospitalized cases including 606 cases admitted to ICU and 295 cases required ventilation as well as 135 deaths of Pandemic (H1N1) 2009 were reported to PHAC as of November 7, 2009. Core data was available for 3,354 (89.1%) hospitalizations, 590 (97.4%) ICU admissions and 131 (97.0%) deaths. There was a four-fold increase in the number of deaths (35 vs. 8) and a two-fold increase in the number of hospitalizations (1,324 vs. 661) and ICU admissions (163 vs. 93) reported during week 44 as compared to week 43. The activity levels reported during the previous weeks were even higher than the peak period of the first wave (e.g. the three first weeks of June, 2009).

There has been a decrease in severity of the hospitalized cases in the last 2 months. The proportion of ICU admitted patients was 19.7% in the period before August 29, 2009 compared to 13.8% in the period from August 30 to November 7, 2009. As well, the proportion of fatal cases among hospitalized cases had also decreased from 5.1% to 2.6%. Comparing the same 2 periods, fewer pregnant women among women of reproductive age and fewer people of Aboriginal origin were hospitalized and admitted to ICU during the last 2 months.

Since August 30, 2009, all the provinces and territories except SK, MB and NU had a cumulative crude hospitalization rates that surpassed the respective hospitalization rates in the period before August 29, 2009. BC, AB, NL and YK had a higher cumulative crude mortality rates compared to the period before August 29, 2009. In all age-groups so far, the cumulative age-specific hospitalization rates are higher than what was experienced in the period before August 29, 2009 except for children under 1 year of age. The under 20 year olds continued to have the highest hospitalization rates while the under 5 and the 45-64 year olds had the highest ICU admission rates per 100,000 population. The highest crude mortality rate was still among people 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 7, 2009

Province/Territory	This week (Nov. 1-7, 2009)*			From August 30, 2009 to November 7, 2009**			Up to August 29, 2009**		
	Hospitalized cases	ICU admissions	Deaths	Hospitalized cases	ICU admissions	Deaths	Hospitalized cases	ICU admissions	Deaths
BC ¹	240	14	9	550	68	18	51	19	5
AB	217	46	6	352	75	13	128	29	7
SK ²	--	--	1	4	3	2	23	12	4
MB ³	11	1	1	11	1	1	227	43	7
ON	214	19	7	385	46	14	373	66	23
QC	435	54	8	696	86	8	572	104	27
NB ¹	40	2	0	46	2	0	2	1	0
NS	50	9	1	66	12	1	17	8	1
PE	18	3	0	21	3	0	1	0	0
NL ¹	89	15	1	116	15	2	3	1	0
YT	4	0	1	8	1	1	0	0	0
NT	6	0	0	40	5	0	6	0	0
NU	0	0	0	0	0	0	66	6	1
Canada	1324	163	35	2295	317	60	1469	289	75

*Based on reporting date. ** Based on epidemiological date and reporting date. ¹ These two provinces reported aggregate counts this week.

² No report received this week from SK. ³ The new numbers reflect the situation since week 41.

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

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 7, 2009

	From August 30, 2009 to November 7, 2009			From April to August 29, 2009		
	Hospitalized cases (n=1,885)	Cases admitted to ICU (n=301)	Deaths (n=56)	Hospitalized cases (n=1,469)	Cases admitted to ICU (n=289)	Deaths (n=75)
Females, %	51.4	52.8	60.7	51.3	57.1	61.3
Median age	25.0	45.0	51.0	23.0	37.0	51.0
Aboriginal status, %	11.1	11.3	14.3	18.0	15.2	12.0
Underlying medical conditions ¹ , %	57.5 (441/767)	68.3 (142/208)	73.0 (27/37)	62.7 (616/982)	72.2 (151/209)	79.7 (47/59)
Pregnancy ² , %	17.4 (60/345)	12.9 (8/62)	0.0	28.5 (78/274)	19.7 (15/76)	28.6 (4/14)

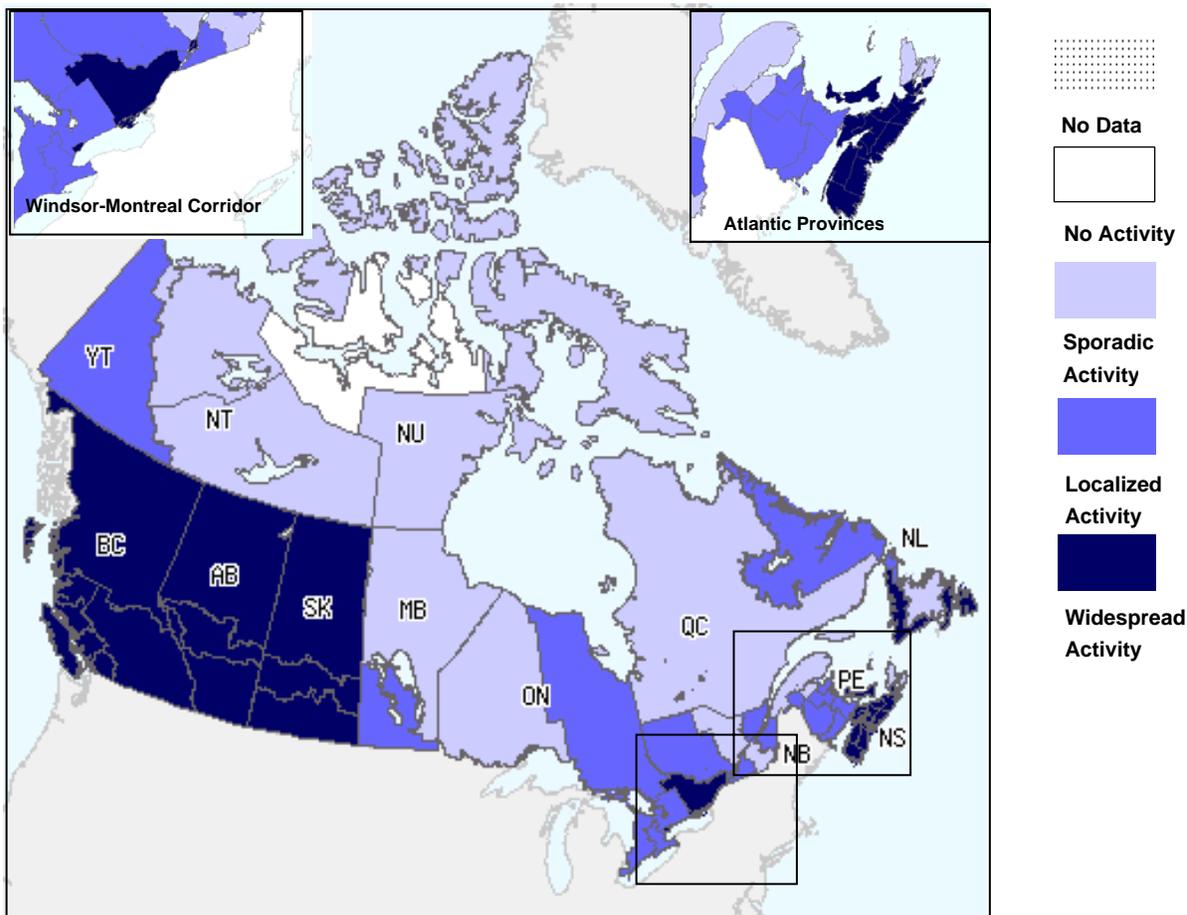
¹ Proportion of cases with at least one underlying medical condition (excluding pregnancy) among those for whom the information was available.² Percent of pregnant women among women 15 to 44 years of age. Note that the criteria used to select the cases up to August 29, 2009 have changed, which may explain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

Overall Influenza Summary - Week 44 (November 1 to November 7, 2009)

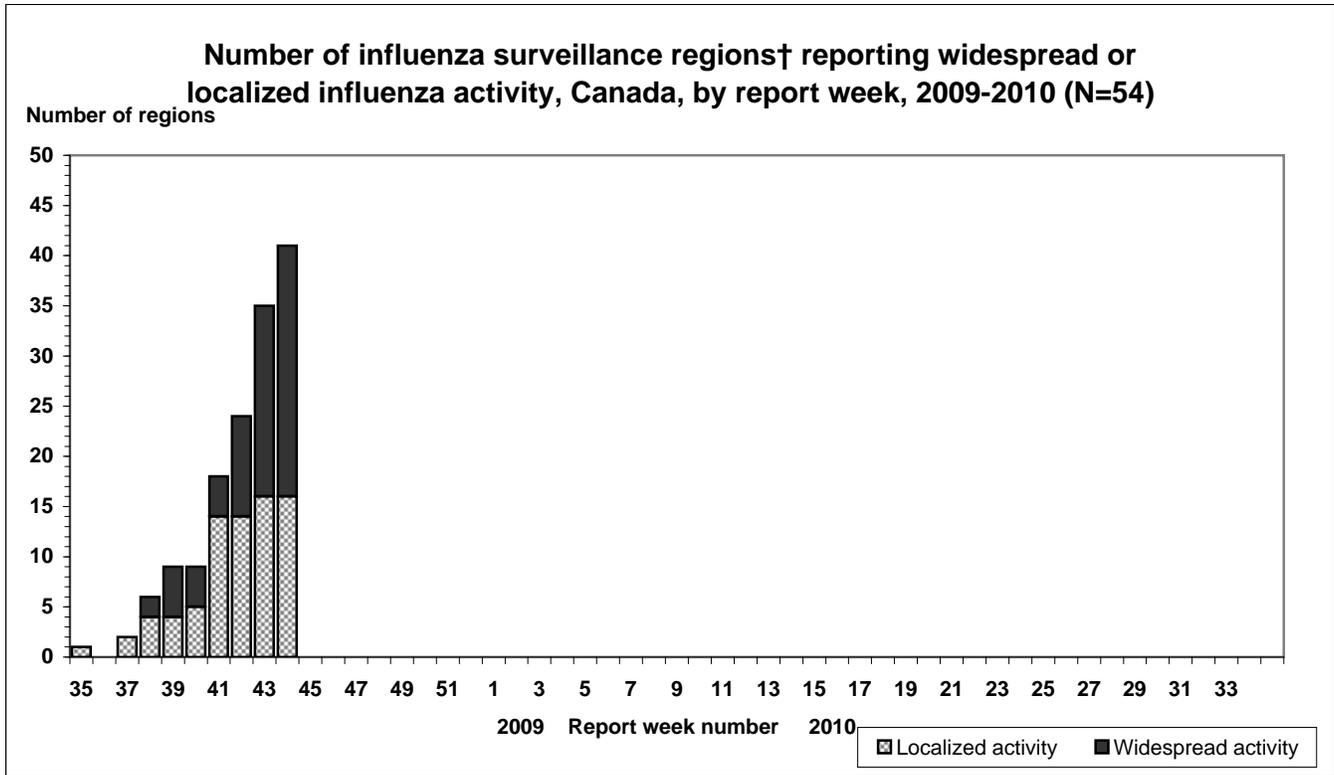
Nationally, there was a considerable increase in the influenza activity level reported this week with a proportion of positive influenza tests of more than 38%, the national ILI consultation rate of almost 100 per 1,000 patient visits, 25 regions reporting widespread activity and over 750 influenza outbreaks reported. This increased activity occurred in almost all provinces and territories.

Twenty-five regions reported widespread activity in BC, AB, SK, ON, QC, PE, NS & NL and fifteen regions in MB, ON, QC, NB & NL reported localized activity, while thirteen regions reported sporadic activity in MB, ON, QC, NB, NS, NL, YK, NT & NU and one region in NU reported no activity. The 755 influenza outbreaks reported this week were all in schools except 22 in hospitals and residential institutions (BC, AB, ON, QC, NB & NL) and 10 in an unspecified location (AB, MB, ON & PE). The schools outbreaks were in NS (173), BC (157), SK (150), AB (148), PE (47), NB (45), NL (2) and MB (1). 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 the previous years.

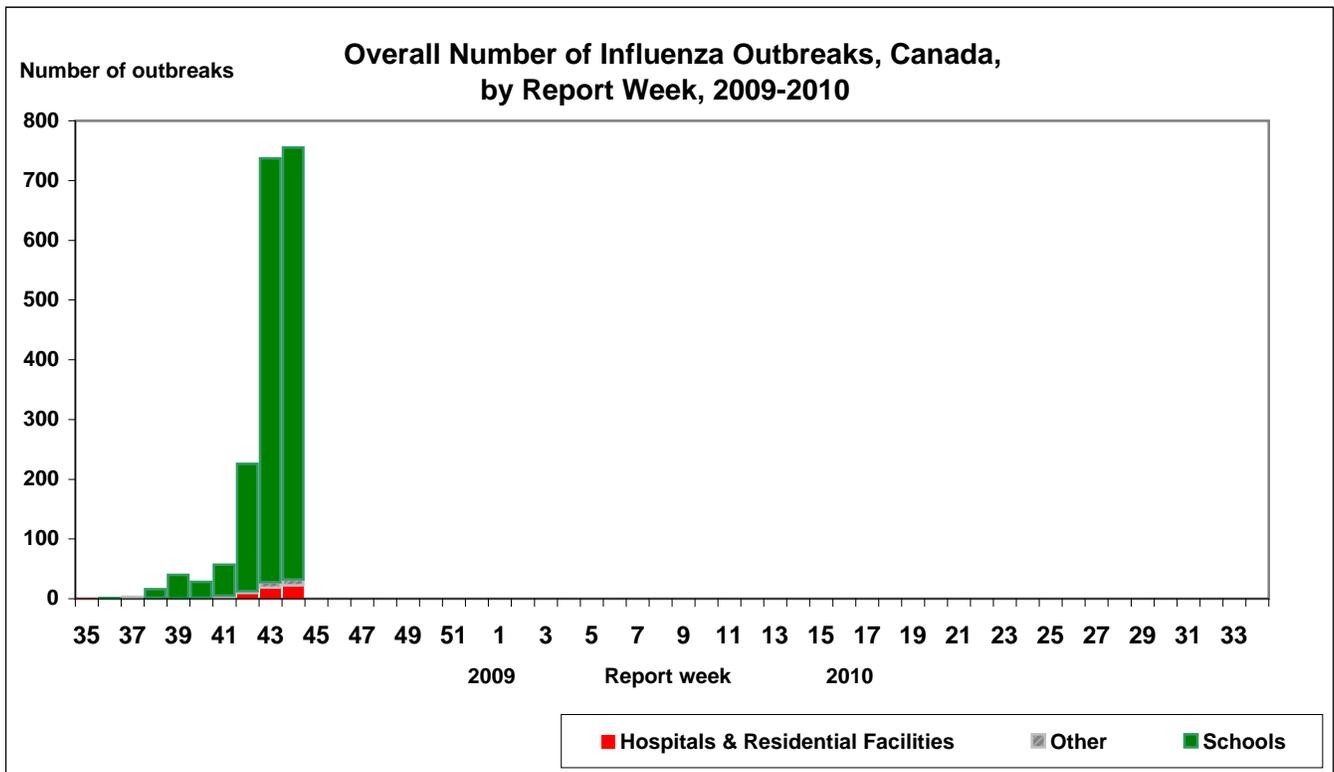
Map of overall Influenza activity level by provinces and territories, Week 44, Canada



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.

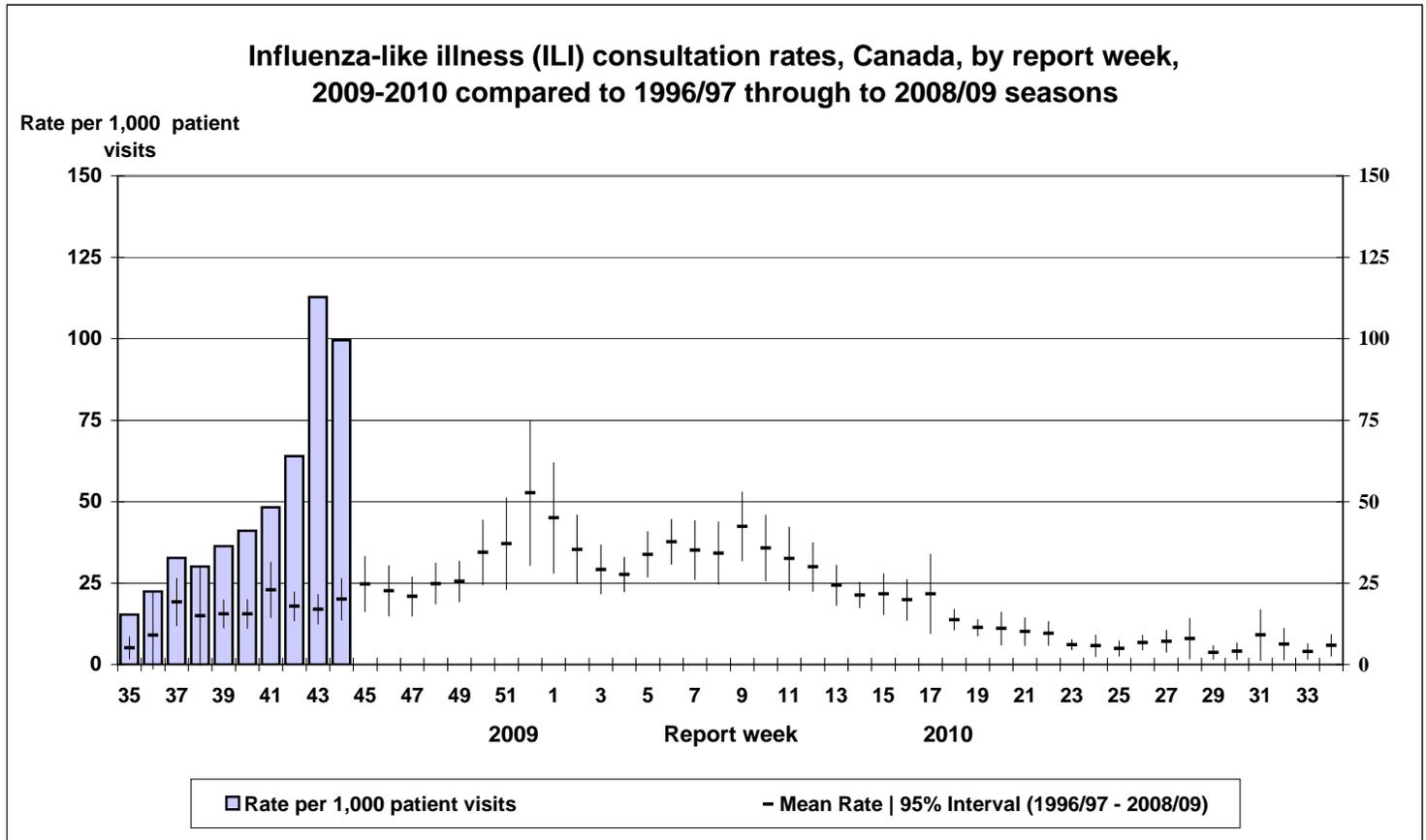


† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.



ILI consultation rate

This week, the national ILI consultation rate was 99 consultations per 1,000 patient visits (see ILI graph) which was lower compared to the previous week. This is likely due to the fact that many P/T have established special clinics for assessing patients with ILI. Five provinces and territories (SK, NB, NS, NL and YK) had higher ILI consultation rates compared to their ILI rates in previous weeks. People under 20 years of age had the highest consultations rates, with 153 and 226 per 1,000 patient visits among children under 5 years of age and among those 5 and 19 years of age, respectively.



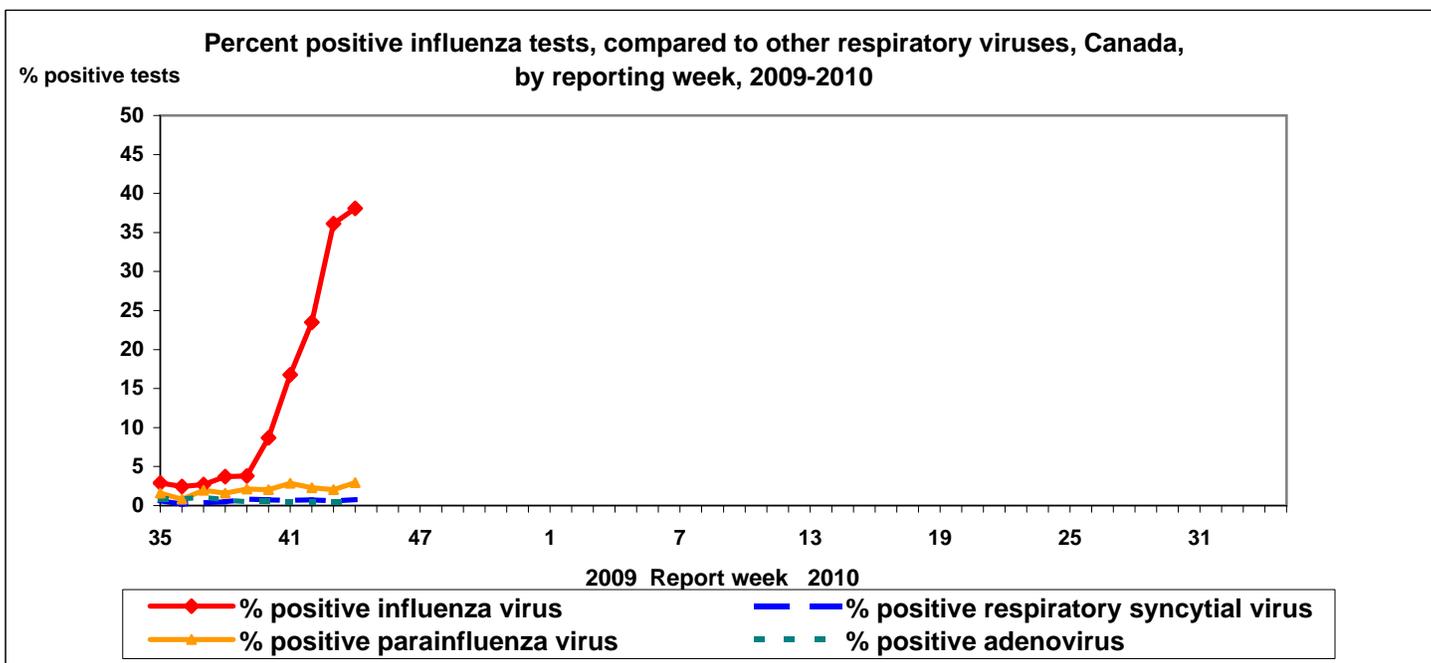
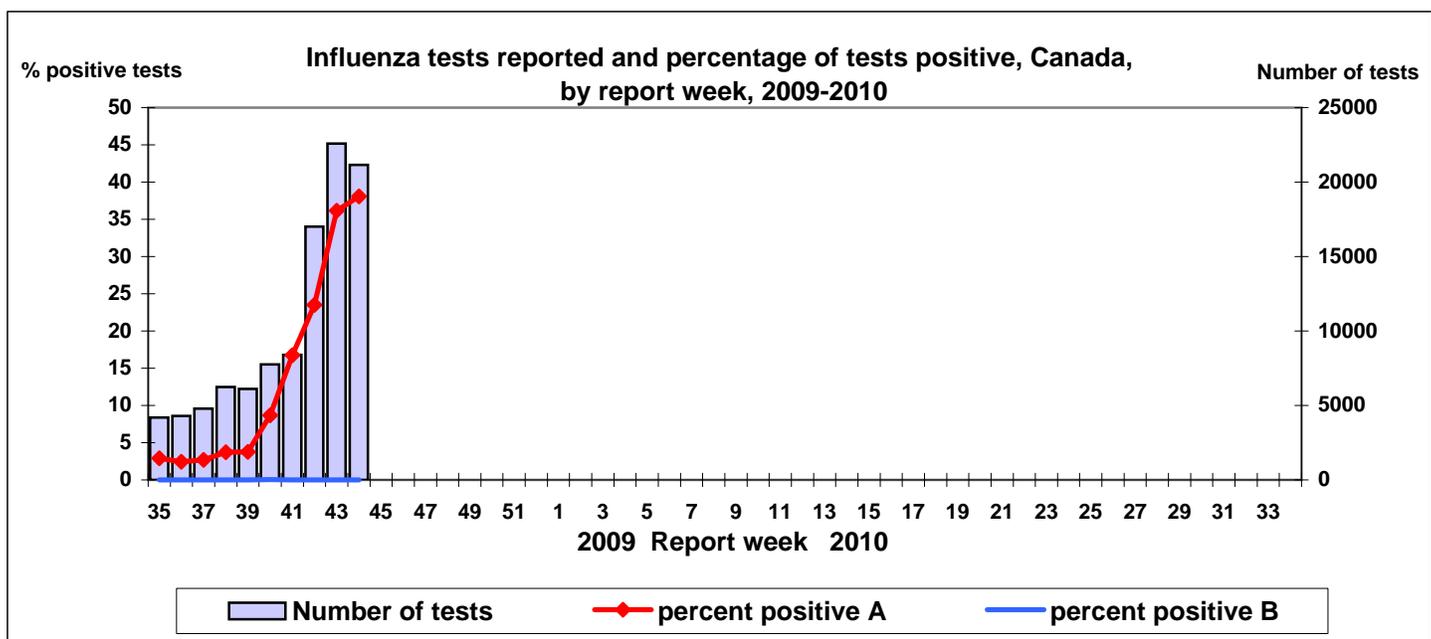
Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons). Delays in the reporting of data may cause data to change retrospectively.

Paediatric Influenza Hospitalizations and Deaths

In week 44, 198 laboratory-confirmed influenza-associated paediatric hospitalizations and 1 death were reported through the Immunization Monitoring Program Active (IMPACT) network. The new death was a male aged between 5 and 9 years of age with underlying medical conditions. 194 Pandemic (H1N1) 2009 and 4 other hospitalizations due to unsubtype influenza A were reported this week. 861 hospitalizations had been reported since week 17 (April 26); 96.3% of these hospitalizations were due to Pandemic (H1N1) 2009. Since the beginning of the pandemic, five 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 38.1% which is a slight increase compared to the previous week (see Tests table). While the Atlantic provinces and Quebec had a higher proportion of positive tests for influenza this week, the Prairies and Ontario had a lower proportion and British Columbia had a similar proportion. This week, a total of 8,054 specimens tested positive for influenza this week (all A except 2 B) and 99.8% of the positive influenza A subtyped specimens were Pandemic (H1N1) 2009. Note that QC has reported this week 10 positive specimens for A/H3N2.



Weekly & Cumulative numbers of positive influenza specimens by Provincial Laboratories

Reporting provinces	Weekly (Nov. 1-7, 2009)						Cumulative (Aug. 30 to Nov. 7, 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	1155	0	0	1153	2	0	5046	0	1	4483	562	0
AB	711	0	0	0	711	0	4812	0	0	769	4043	0
SK	606	0	0	505	101	0	1306	0	1	1110	195	0
MB	218	0	0	218	0	0	311	0	0	289	22	0
ON	1392	0	0	329	1063	1	4421	1	0	1856	2564	4
QC	2678	0	10	2668	0	1	5096	1	33	5062	0	2
NB	752	0	0	739	13	0	832	1	1	815	15	1
NS	146	0	0	143	3	0	477	0	0	461	16	0
PE	22	0	0	22	0	0	76	0	0	75	1	0
NL	374	0	0	374	0	0	734	0	0	734	0	0
Canada	8054	0	10	6151	1893	2	23111	3	36	15654	7418	7

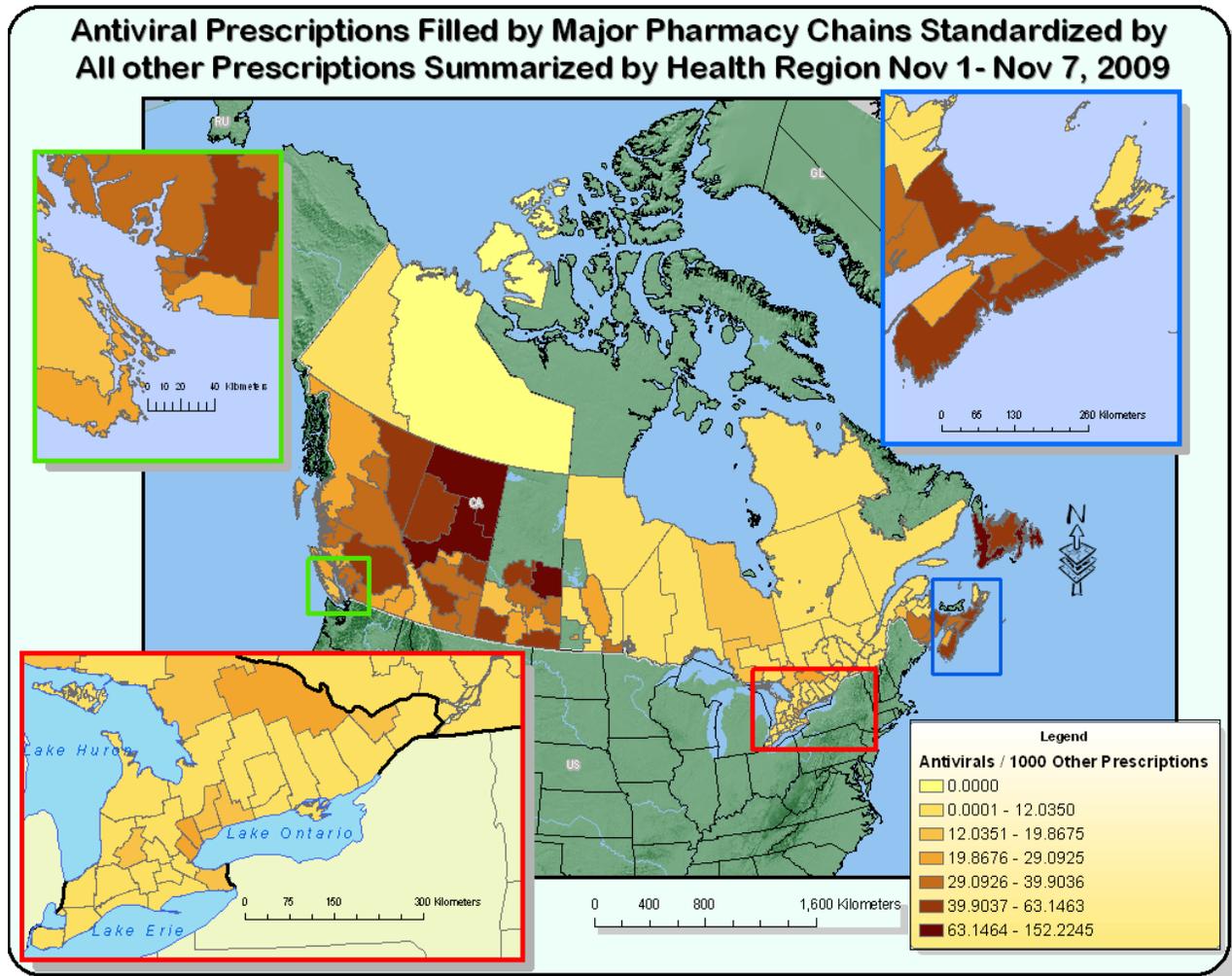
Specimens from NT, YT, and NU are sent to reference laboratories in other provinces.

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 44, antiviral prescriptions monitoring results demonstrate an apparent leveling-off of antiviral prescriptions at the national level, with variability in trends among the provinces and territories and at the local level. From November 1 to November 7, 2009, the top five Health Regions in Canada, from highest to lowest antiviral prescription sales per all other prescription sales (antivirals/1,000 prescription sales) were in Eastern Newfoundland (152), Central Saskatchewan (111), Western Newfoundland (86), Northern Alberta (86) and Northeastern Alberta (85).



Canadian situation

Antigenic Characterization

Since September 1, 2009, NML has antigenically characterized 70 Pandemic (H1N1) 2009 viruses and two seasonal influenza viruses (one influenza A/H1N1 and one B virus) that were received from Canadian laboratories. All 70 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, which is the influenza A/H1N1 component recommended for the 2009-10 influenza vaccine. The one influenza B virus characterized was antigenically related to B/Brisbane/60/08, which is the recommended influenza B component for the 2009-10 influenza vaccine.

Antiviral Resistance

NML: Pandemic (H1N1) 2009 viruses tested so far have been sensitive to zanamivir (70 samples) but resistant to amantadine (62 samples). Of the 69 Pandemic (H1N1) 2009 viruses tested, 67 were sensitive to oseltamivir and two viruses were resistant to oseltamivir with the H275Y mutation. The two resistant cases 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.

International update

Global information

WHO: Intense and persistent influenza transmission continued to be reported in North America. The proportion of sentinel physician visits due to influenza-like-illness (ILI) (8%) has exceeded levels seen over the past 6 influenza seasons; 42% of respiratory samples tested were positive for influenza and 100% of subtyped influenza A viruses were Pandemic (H1N1) 2009. Active influenza transmission and increasing levels of respiratory diseases continued to be reported in parts of the Caribbean, however most tropical regions of Central and South America as well as South and Southeast Asia reported declining influenza activity. Infections in different species of susceptible animals (pig, turkey, ferret, and cat) have been reported. Limited evidence suggested that these infections occurred following direct transmission of the virus from infected humans. These isolated events have had no impact on the dynamics of the pandemic.

Antiviral resistance: To date, 42 resistant Pandemic (H1N1) 2009 influenza 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 continued to increase, remaining above the national baseline for the ninth consecutive week and exceeding what is normally seen during the peak of most regular influenza seasons. Forty-eight states reported widespread influenza activity this week. On a regional level, the percentage of outpatient visits for ILI ranged from 5.0% to 10.7% during week 43, and decreased in five of the 10 surveillance regions compared to the previous week, mainly in central US states. All 10 regions reported a proportion of outpatient visits for ILI above their region-specific baseline levels. Since August 30, 2009, CDC has received 85 reports of influenza-associated paediatric deaths that occurred during the current influenza season (18 reported this week): 12 deaths in children less than 2 years, 9 deaths in children 2-4 years, 30 deaths in children 5-11 years, and 34 deaths in individuals 12-17 years. <<http://www.cdc.gov/flu/weekly/> and <http://www.cdc.gov/h1n1flu/update.htm>>

Ukraine: On 5 November, the Ukrainian Ministry of Health reported 633,877 cases of acute respiratory illness and 95 deaths related to acute respiratory illness, which represents a significant increase compared to the previous day (+32% for the number of cases and +10% for the number of deaths). Preliminary reports indicated that the rapidly evolving situation in the country was mainly related to Pandemic (H1N1) 2009. However, other causes for clusters of respiratory illnesses cannot yet be ruled out. <<http://www.who.int/csr/disease/swineflu/updates/en/index.html>> and <[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)>

United Kingdom: Pandemic influenza activity is variable across the UK. The weekly influenza/ILI consultation rates decreased, though remained above the winter baseline thresholds, in England, Scotland and Northern Ireland. There were a total of 1,431 new patients hospitalized in England with suspected Pandemic (H1N1) 2009 in the week from 29 October to 4 November (increased from 1,200 in the previous week). <<http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1242949541993?p=1242949541993>>

Asia: Central and Western Asia are experiencing an unusually early start to winter influenza season. In China, after an earlier wave of mixed influenza activity with seasonal H3N2, Pandemic (H1N1) 2009 activity predominated and was increasing. In Japan, sharp increases in Pandemic (H1N1) 2009 activity continue to be reported. <<http://www.who.int/csr/disease/swineflu/updates/en/index.html>>

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