



May 8 to 14, 2011 (Week 19)

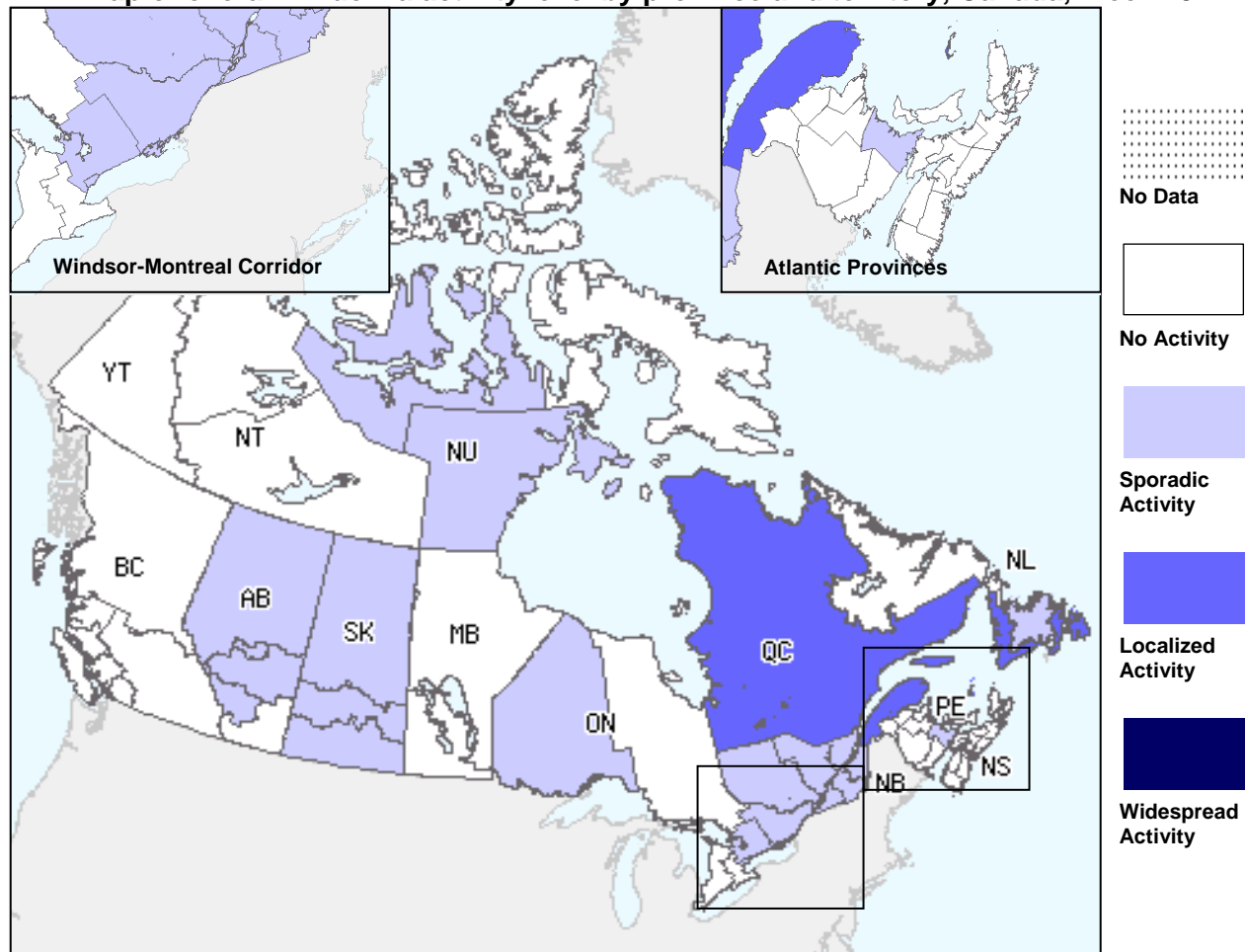
Overall Influenza Summary

- In week 19, influenza activity in Canada continues to decline with most of the country reporting sporadic or no activity. Localized activity persists in a few regions of Quebec and Newfoundland.
- Both influenza A and B detections continue to decrease. The proportion of positive tests for parainfluenza viruses continues to increase in many regions of the country.
- The ILI consultation rate and adult hospitalizations with influenza continue on a downward trend. Paediatric hospitalizations with influenza increased slightly compared to the previous week, although few cases were reported.

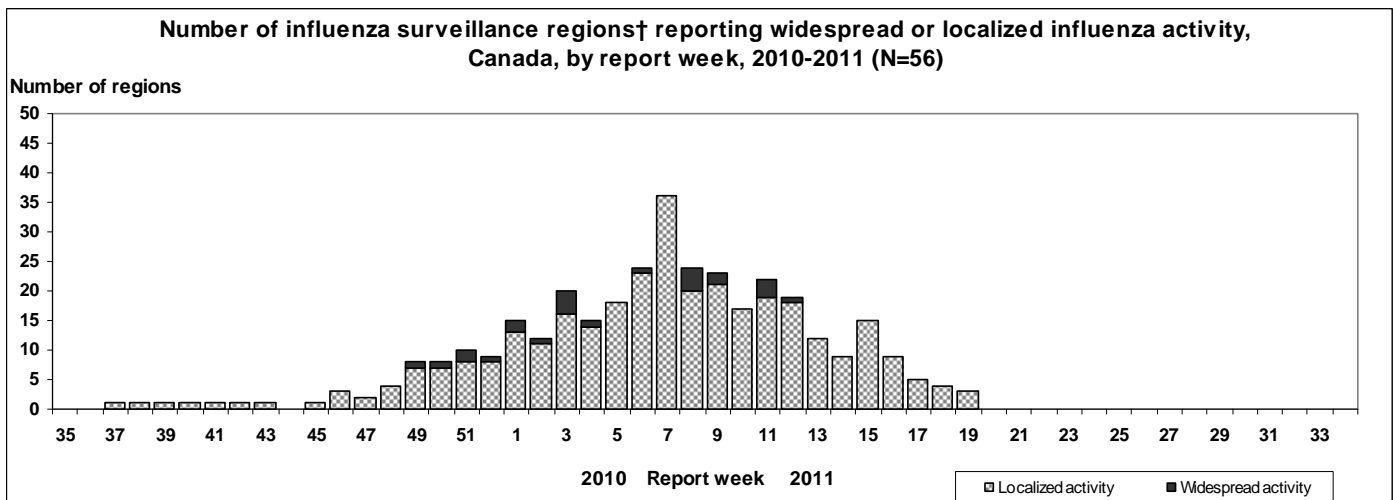
Influenza Activity and Outbreaks

In week 19, 3 regions reported localized activity: NL(2) and QC(1); 21 regions reported sporadic activity; and 32 regions presented no activity (see Activity level Map). Compared to the previous week (week 18), 4 regions reported an increased level of influenza activity, 10 regions reported decreased activity, and 20 regions maintained a stable level of influenza activity (sporadic or higher). Eight new outbreaks were reported: 1 outbreak of influenza A (unsubtyped) in a long-term care facility (LTCF) in QC; 1 influenza outbreak in a LTCF in NB; 5 ILI outbreaks in schools in NB(1), NS(2) and NL(2); and one outbreak of ILI in another facility in NL.

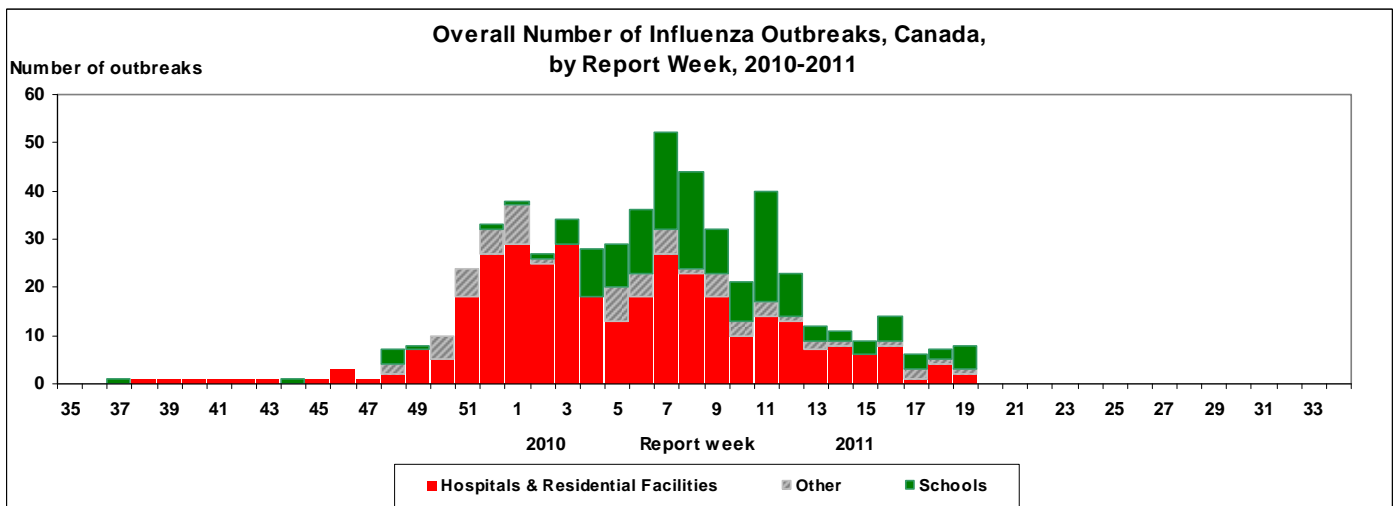
Map of overall Influenza activity level by province and territory, Canada, Week 19



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.

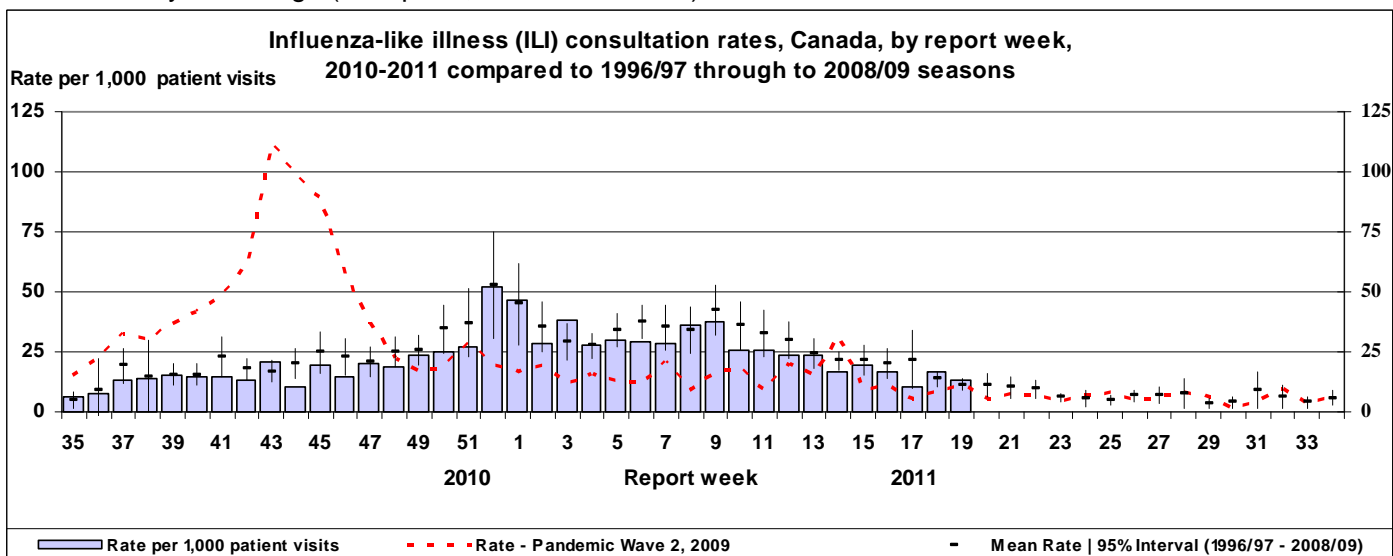


Note that this was the first year that all the provinces and territories were reporting on influenza outbreaks in schools (greater than 10% absenteeism on any day most likely due to ILI) which has increased considerably the total number of outbreaks reported compared to previous years.



ILI consultation rate

During week 19, the national ILI consultation rate was 13.2 consultations per 1,000 patient visits, which is decreased compared to the previous week and still within the expected rate for this time of year (see ILI graph). Children under 5 years of age had the highest consultation rates (37.8 per 1,000 consultations), followed by children 5-19 years of age (17.3 per 1,000 consultations) in week 19.



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.

Laboratory Surveillance Summary

The overall proportion of tests that were positive for influenza during week 19 was 4.0% (1.3% influenza A, 2.7% influenza B), which is decreased compared to week 18 (5.2%). The proportion of positive tests peaked in week 52 (see Influenza tests graph). Since the beginning of the season, 85.4% (16,466/19,286) of influenza virus detections have been influenza A viruses, of which 84.6% (5,487/6,483) of subtyped specimens have been A/H3N2. Detections of influenza B have been increasing steadily since week 03 and appear to have reached a peak in week 15. Through detailed case-based laboratory reporting where age data is provided, since August 29, 2010, 50.7% (2,056/4,052) of cases with A/H3N2 were aged 65 years or older. In contrast, the majority of cases with pandemic H1N1 2009 (94.5%, 750/794) and influenza B (90.3%, 1,345/1,489) were under 65 years of age (see Tests detailed table). The proportion of positive tests for respiratory syncytial virus detections (RSV) continues to decrease (peak in week 07). Since week 11, the proportion of positive tests for parainfluenza viruses has been increasing and reaching 7.2% in week 19 (see Respiratory viruses graph).

Weekly & Cumulative numbers of positive influenza specimens by Provincial Laboratories, Canada, 2010-2011

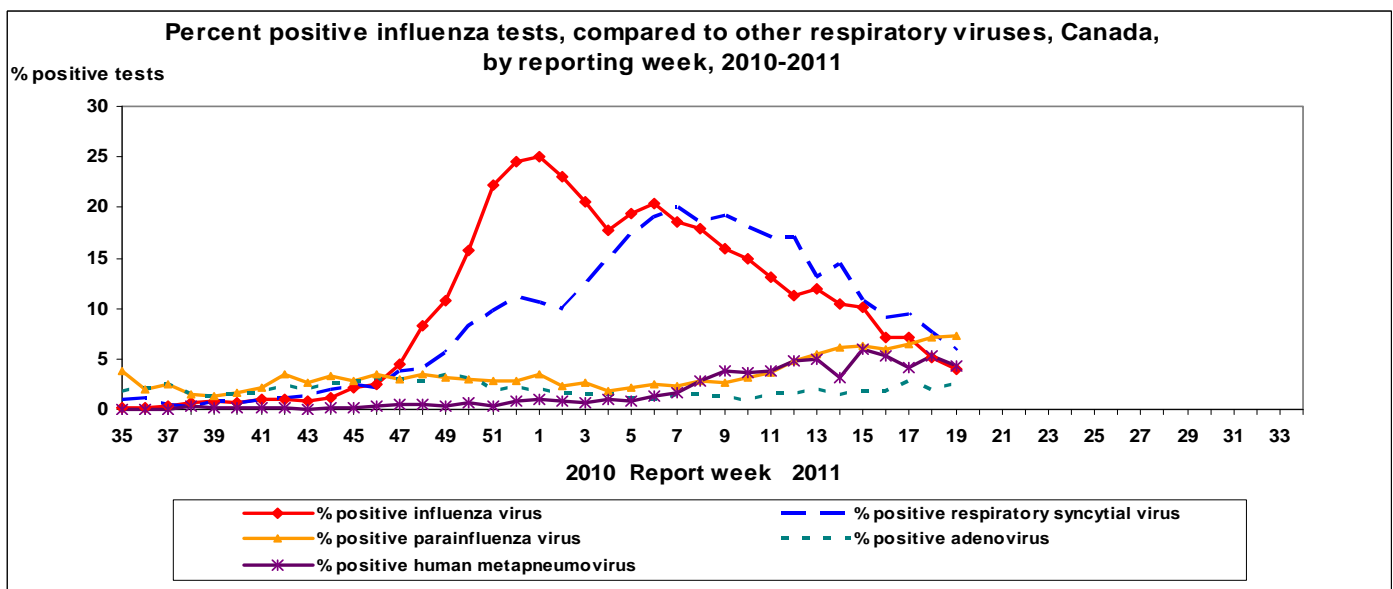
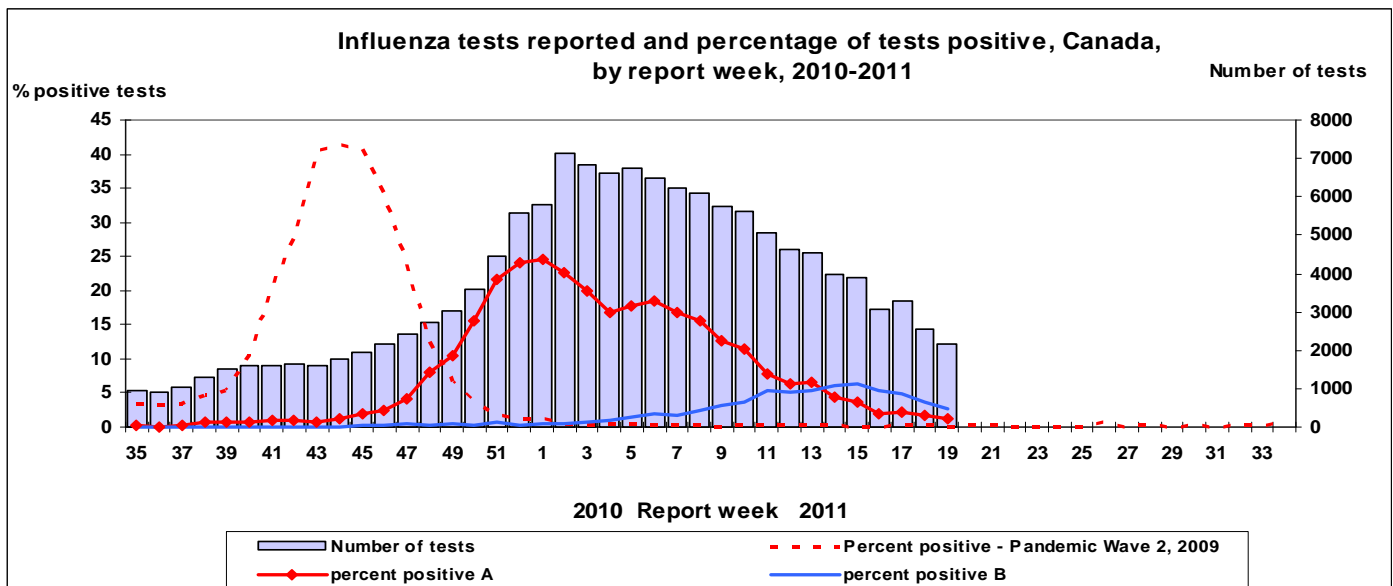
Reporting provinces	Weekly (May 8 to May 14, 2011)						Cumulative (August 29, 2010 to May 14, 2011)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	0	0	0	0	0	0	477	0	200	164	113	179
AB	5	0	2	2	1	8	1073	0	757	279	37	734
SK	2	0	0	0	2	5	318	0	212	30	76	174
MB	0	0	0	0	0	1	515	0	56	2	457	14
ON	1	0	0	0	1	11	6883	0	2437	274	4172	833
QC	15	0	0	0	15	27	5660	0	877	38	4745	735
NB	0	0	0	0	0	2	959	0	669	176	114	102
NS	0	0	0	0	0	0	271	0	80	11	180	5
PE	0	0	0	0	0	0	97	0	79	16	2	6
NL	5	0	0	0	5	5	213	0	120	6	87	38
Canada	28	0	2	2	24	59	16466	0	5487	996	9983	2820

*Unsubtyped: The specimen was typed as influenza A, but no test for subtyping was performed. 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.

Weekly & Cumulative numbers of positive influenza specimens by age groups reported through case-based laboratory reporting, Canada, 2010-2011*

Age groups	Weekly (May 8 to May 14, 2011)					Cumulative (Aug. 29, 2010 to May 14, 2011)				
	Influenza A				B	Influenza A				B
	A Total	Pandemic H1N1	A/H3N2	A unsubtype	Total	A Total	Pandemic H1N1	A/H3N2	A unsubtype	Total
<5	1	1	0	0	4	1011	129	736	146	409
5-19	0	0	0	0	3	515	103	295	117	532
20-44	1	0	0	1	0	1080	331	529	220	290
45-64	1	0	0	1	0	791	187	436	168	114
65+	0	0	0	0	1	2505	44	2056	405	144
Unknown	0	0	0	0	0	231	3	224	4	1
Total	3	1	0	2	8	6133	797	4276	1060	1490

*Please note that this table reflects the number of specimens for which demographic information was reported. These represent a subset of all positive influenza cases reported. Five provinces have reported detailed case-by-case data since the beginning of the season (BC, AB, SK, MB and ON). Delays in the reporting of data may cause data to change retrospectively.



Antigenic Characterization

Between September 1 and May 19, 2011, the National Microbiology Laboratory (NML) has antigenically characterized 920 influenza viruses that were received from provincial laboratories: 269 A/H3N2, 141 pandemic H1N1 2009 and 510 B viruses. Of the 269 influenza A/H3N2 viruses characterized, 266 (98.9%) were antigenically related to A/Perth/16/2009, which is the influenza A/H3N2 component recommended for the 2010-11 influenza vaccine. Three viruses (1.1%) tested showed reduced titer with antiserum produced against A/Perth/16/2009. Of the 141 pandemic H1N1 2009 viruses characterized, 139 (98.6%) were antigenically related to the pandemic vaccine virus A/California/7/2009, which is the recommended H1N1 component for the 2010-11 influenza vaccine. Two viruses (1.4%) tested showed reduced titer with antiserum produced against A/California/7/2009. Of the 510 influenza B viruses characterized, 488 (95.7%) were antigenically related to B/Brisbane/60/08 (Victoria lineage), which is the recommended influenza B component for the 2010-11 influenza vaccine. Four of the 488 viruses tested showed reduced titer with antisera produced against B/Brisbane/60/08. Twenty-two (4.3%) influenza B viruses were characterized as B/Wisconsin/01/2010-like, which belongs to the Yamagata lineage. B/Wisconsin/01/2010-like viruses are antigenically and genetically different from the previous Yamagata lineage vaccine strain B/Florida/04/2006.

Antiviral Resistance

Since the beginning of the 2010-2011 season, NML has tested 628 influenza A isolates (470 A/H3N2 and 158 pandemic H1N1 2009) for amantadine resistance and found that 469 influenza A/H3N2 were resistant and one was sensitive. All 158 influenza A/H1N1 viruses were resistant to amantadine. Of 893 influenza viruses (246 A/H3N2, 145 pandemic H1N1 2009, and 502 influenza B) tested for resistance to oseltamivir, 245 A/H3N2 viruses were sensitive and one was resistant with the E119V mutation. The resistant case was associated with oseltamivir prophylaxis/treatment. Of the 145 pandemic H1N1 2009 isolates tested for oseltamivir resistance, 144 were sensitive and one was resistant with the H275Y mutation. The resistant case was associated with oseltamivir treatment. Of the 502 B virus isolates tested, 501 were sensitive to oseltamivir and one was resistant with the D198N mutation. Of 884 influenza viruses (242 A/H3N2, 142 pandemic H1N1 2009, and 500 influenza B) tested for zanamivir resistance all isolates were found to be sensitive.

Severe Illness Surveillance

Note that all numbers are preliminary and numbers may fluctuate because of delays in reporting.

Paediatric Influenza Hospitalizations and Deaths

In week 19, 5 new laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network: 4 with influenza B, one with influenza A. This number is increased compared to the previous week (week 18) in which 2 paediatric hospitalizations were reported. Influenza A was associated with the majority of hospitalizations earlier in the season (weeks 47 to 09). Since week 10, however, influenza B accounted for more cases than influenza A each week. Six paediatric deaths have been reported via IMPACT this season: 3 children between 6 and 23 months old, two with pandemic H1N1 2009 and one with influenza B; two children between 2 and 4 years old, both with influenza B; and one child between 10 and 16 years old with influenza A/H3. All cases had underlying comorbidities.

Since the beginning of the season, 660 hospitalizations with laboratory-confirmed influenza have been reported: 103 (15.6%) as influenza A/H3N2, 23 (3.5%) pandemic H1N1 2009, 326 (49.4%) as un-subtyped influenza A, and 208 (31.5%) influenza B. The distribution of cases to date by age group was as follows: 16.7% among 0-5 month olds; 27.7% among 6-23 month olds; 28.6% among the 2-4 year-olds; 16.4% among 5-9 year-olds; and 10.6% among children 10-16 years old.

Adult Influenza Hospitalizations and Deaths

During week 19, 2 new hospitalizations with laboratory-confirmed influenza among adults (16 years of age and older) were reported through the Canadian Nosocomial Infection Surveillance Program (CNISP), both with influenza B, similar to the previous week. Since the beginning of the season, 968 hospitalized cases have been reported: 202 (20.9%) A/H3N2, 48 (5.0%) pandemic H1N1 2009, 643 (66.4%) influenza A unsubtype, and 75 (7.7%) influenza B, from all reporting provinces. To date, 651 of the 968 (67.3%) cases were aged 65 years or older and 437 (45.1%) were males.

Aggregate Influenza Hospitalizations and Deaths

Nine provinces and territories (excluding BC, QC, NB and NU) currently conduct severe outcomes surveillance and report weekly numbers of hospitalizations, ICU admissions and deaths with laboratory-confirmed influenza. In week 19, one death with pandemic H1N1 2009 influenza was reported from Alberta. Among the 224 fatal cases reported since the beginning of the influenza season, influenza A/H3N2 was identified in 60.7% (136/224), unsubtype influenza A in 28.1% (63/224), pandemic H1N1 2009 in 6.7% (15/224), and influenza B in 4.5% (10/224). Seventy-nine percent (177/224) of these fatal cases were among persons 65 years of age or older, and another 11% (25/224) were between the ages of 45 and 64 years old, in keeping with the age-groups usually affected by A/H3N2.

International influenza update

Northern Hemisphere

United States: During week 18 (May 1 to 7, 2011), influenza activity continued to decrease. Very few (1.9%) specimens tested positive for influenza and outpatient visits for ILI is well below the national baseline. A total of 102 influenza-associated paediatric deaths were reported this season, of which 39.2% (40/102) were associated with influenza B. The majority of circulating influenza strains this season have been antigenically similar to the components of the trivalent influenza vaccine, with the exception of 5.6% (39/692) of influenza B specimens identified as belonging to the Yamagata lineage. This season, 2 (0.3%) A/H3N2 viruses and 39 (1.1%) pandemic H1N1 2009 viruses with resistance to oseltamivir were detected.

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

Europe: The 2010-11 influenza season is drawing to a close in European countries. In week 18 (May 2 to 8, 2011), all 26 reporting European countries experienced influenza activity of low intensity. Among sentinel specimens tested this season 60.1% (8,362/13,910) were influenza A, of which 89.0 (7,444/8,362) were pandemic H1N1 2009. Among hospitalised cases reported since week 40/2010, 91.4% (3,332/3,645) were influenza A, and of subtyped influenza A specimens 99.2% (2,914/2,937) were pandemic H1N1 2009. Since week 40/2010, 3.0% (93/3,054) influenza pandemic H1N1 2009 viruses tested were resistant to oseltamivir. All the resistant viruses carried the NA H275Y substitution. Sixteen of 65 resistant viruses (24.6%), in patients with known exposure to antivirals, were from patients who had not been treated with oseltamivir.

http://ecdc.europa.eu/en/publications/Publications/110513_SUR_Weekly_Influenza_Surveillance_Overview.pdf

Tropical Zone

A few tropical countries are experiencing low grade transmission including the Dominican Republic, Venezuela (pandemic H1N1 2009) and Jamaica (influenza B) in the Americas, Rwanda (A/H3N2) and Madagascar (influenza B) in Sub-Saharan Africa. Several countries in South America report increased activity of respiratory infections, with RSV as the predominant circulating virus.

http://www.who.int/csr/disease/influenza/latest_update_GIP_surveillance/en/index.html

Southern Hemisphere

The influenza season has not yet started in the temperate countries of the southern hemisphere. Australia has reported higher than expected numbers of influenza virus detections over the summer months, and reported a recent small increase in reports of influenza-like illness. However detections of influenza virus have decreased in most jurisdictions in recent weeks, including in the northern tropical states. The majority of virus detections in Australia over the summer have been A/H3N2, though in the past one week pandemic H1N1 2009 and influenza B have become relatively more common.

http://www.who.int/csr/disease/influenza/latest_update_GIP_surveillance/en/index.html

FluWatch reports include data and information from the following sources: laboratory reports of positive influenza tests in Canada (National Microbiology Laboratory), sentinel physician reporting of influenza-like illness (ILI), provincial/territorial assessment of influenza activity based on various indicators, including laboratory surveillance, ILI reporting, and outbreaks, influenza-associated paediatric and adult hospitalizations, antiviral sales in Canada, and WHO and other international reports of influenza activity.

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 2010-2011 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 is likely due to influenza. 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 2010-2011 season

Schools: Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI. Note: it is recommended that ILI school outbreaks be laboratory confirmed at the beginning of influenza season as it may be the first indication of community transmission in an area.

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) and prisons.

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

Influenza Activity Levels Definition for the 2010-2011 season

Influenza Regional Activity levels are defined as:

- 1 = No activity: no laboratory-confirmed influenza detections in the reporting week, however, sporadically occurring ILI may be reported
- 2 = Sporadic: sporadically occurring ILI and lab confirmed influenza detection(s) with **no outbreaks** detected within the influenza surveillance region†
- 3 = Localized: (1) evidence of increased ILI* and
 - (2) lab confirmed influenza detection(s) together with
 - (3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region†**
- 4 = Widespread: (1) evidence of increased ILI* and
 - (2) lab confirmed influenza detection(s) together with
 - (3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **greater than or equal to 50% of the influenza surveillance region†**

Note: ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.

* More than just sporadic as determined by the provincial/territorial epidemiologist.

† Influenza surveillance 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) 998-8862.