

April 3 to 9, 2011 (Week 14)

Overall Influenza Summary

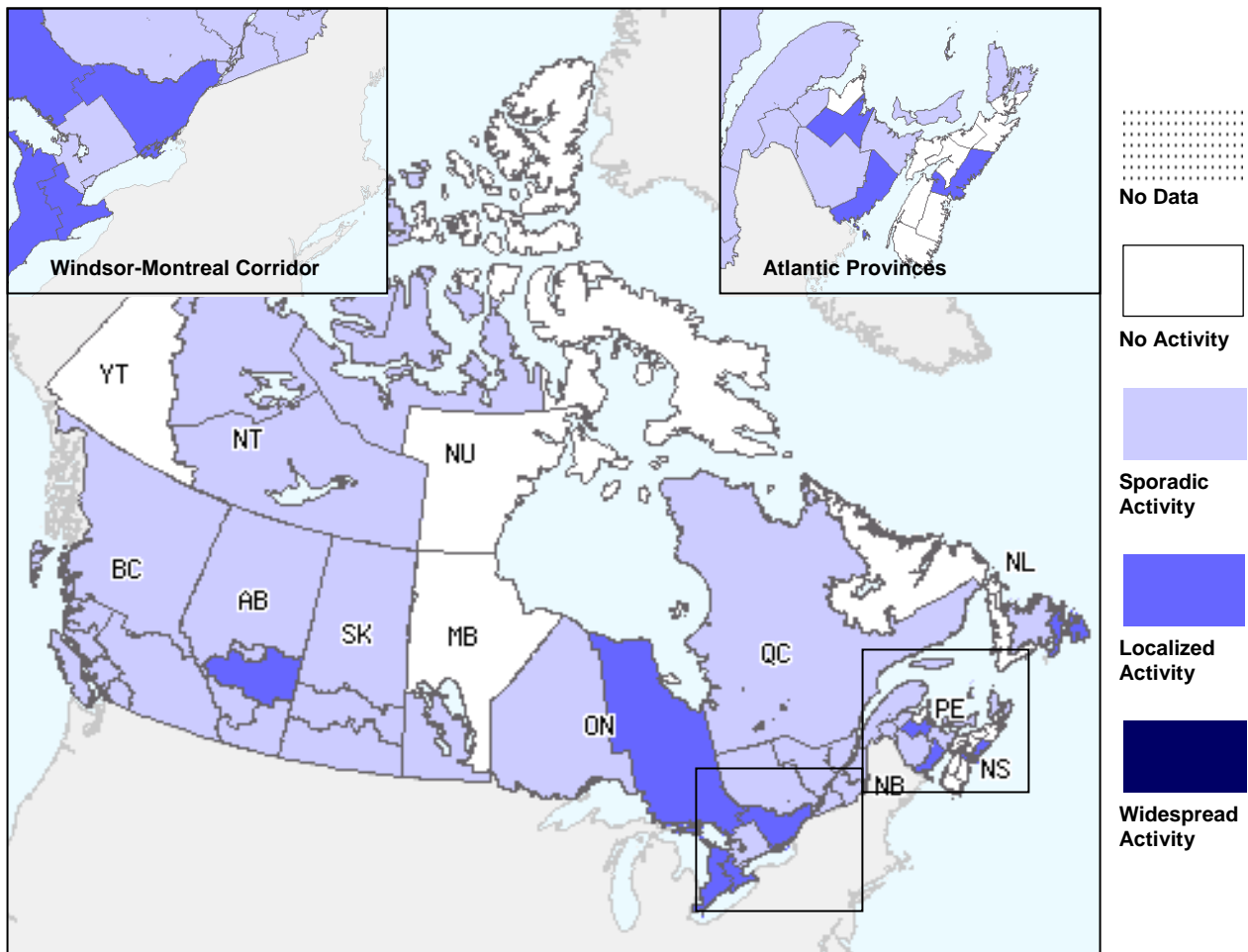
- In week 14, all indicators of influenza activity have decreased.
- Ten percent of tests were positive for influenza, of which influenza B accounted for a greater proportion than influenza A.
- The ILI consultation rate declined compared to previous weeks and is slightly below the expected rate for this time of year. Fewer influenza/ILI outbreaks were reported, and both adult and paediatric hospitalizations decreased compared to the previous week.

Note: The next FluWatch report will be published on Thursday, April 21st due to the Good Friday holiday. FluWatch will return to Friday publication on April 29th.

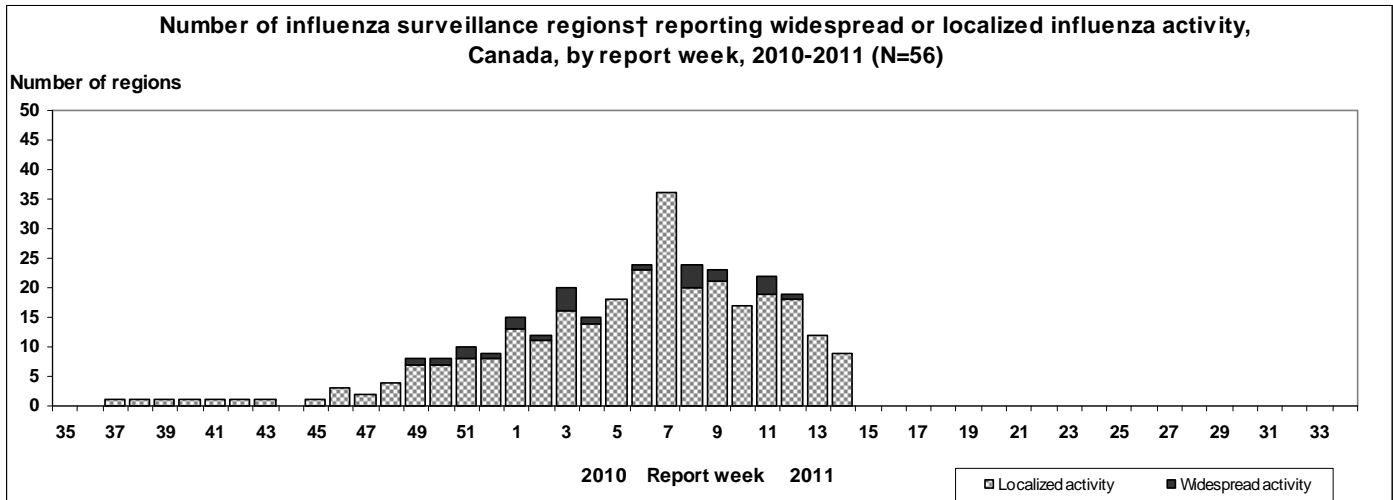
Influenza Activity and Outbreaks

In week 14, 9 regions reported localized activity: AB(1), ON(4), NB(2), NS(1), and NL(1); 33 regions reported sporadic activity (in all provinces and territories except YK) and 14 regions presented no activity (see Activity level Map). Compared to the previous week (week 13), 7 regions reported an increased level of influenza activity, 9 regions reported decreased activity, and 28 regions maintained a stable level of influenza activity (sporadic or higher). Eleven new outbreaks were reported: 6 outbreaks of influenza in long-term care facilities (LTCF) in AB(1) ON(1), NB (2), and NS(2); 2 outbreaks of influenza in hospitals in NS; 2 ILI outbreaks in schools in NB; and 1 ILI outbreak in a facility in NL.

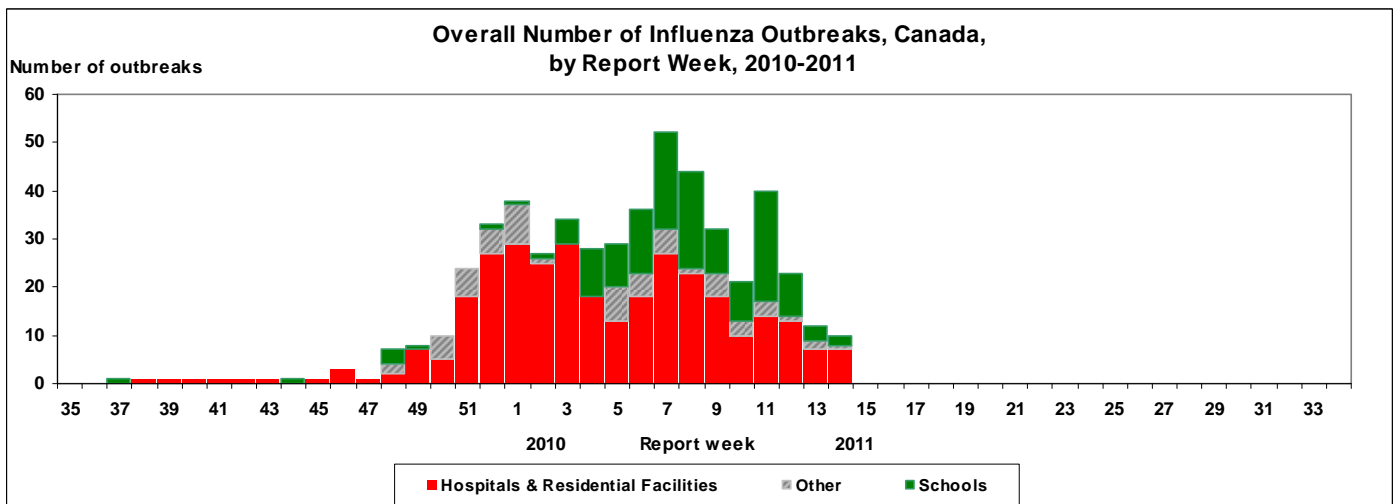
Map of overall Influenza activity level by province and territory, Canada, Week 14



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.

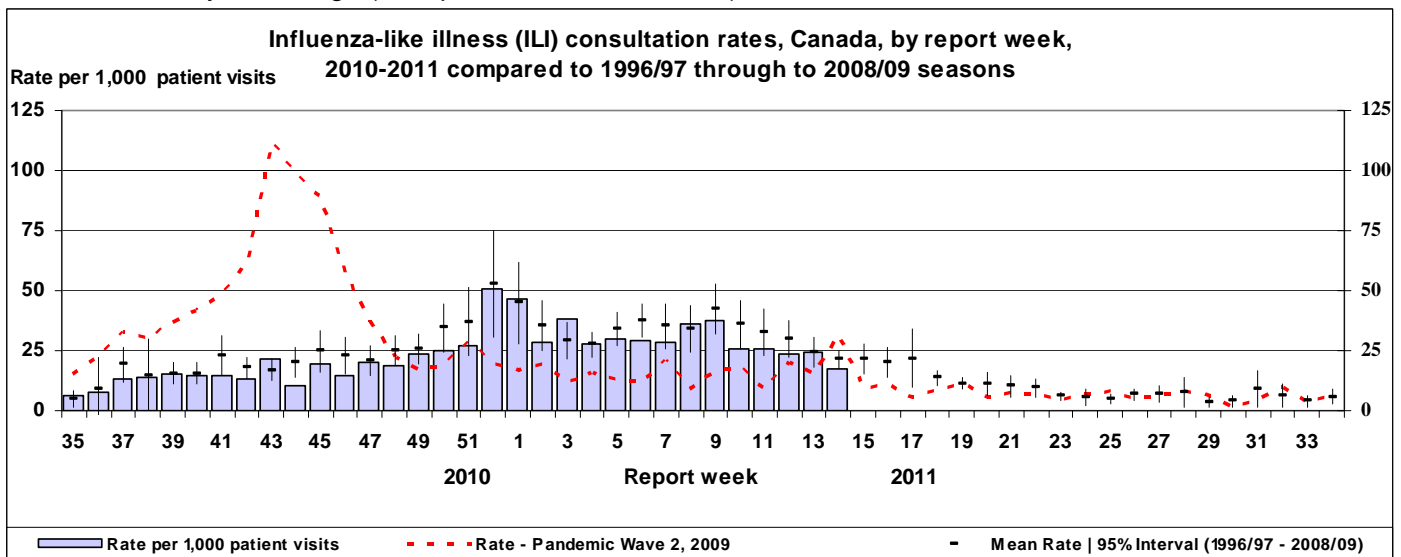


Note that this was the first year that all the provinces and territories were reporting on influenza outbreaks in schools (greater than 10% absenteeism on any day most likely due to ILI) which has increased considerably the total number of outbreaks reported compared to previous years.



ILI consultation rate

During week 14, the national ILI consultation rate was 17.2 consultations per 1,000 patient visits, which is decreased compared to previous weeks and is slightly below the expected rate for this time of year (see ILI graph). Children 5-19 years of age had the highest consultation rates (32.8 per 1,000 consultations), followed by children under 5 years of age (22.5 per 1,000 consultations) in week 14.



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 14 was 10.4% (4.3% influenza A, 6.1% influenza B), which is decreased compared to week 13 (11.7%) and the first week in which more influenza B detections were reported than influenza A. The proportion of positive tests peaked in week 52 (see Influenza tests graph). Of the 412 positive tests reported during week 14, 169 (41.0%) were influenza A and 243 (59.0%) were influenza B. Since the beginning of the season, 88.5% (16,106/18,197) of influenza virus detections have been influenza A viruses, of which 84.7% (5,351/6,317) of subtyped specimens have been A/H3N2. Detections of influenza B have been increasing steadily since week 03, when it accounted for 3.4% of all positive influenza specimens to 59.0% in week 14. Among influenza A detections in week 14, 54 (32.0%) specimens were reported as influenza A/H3N2, 12 (7.1%) as pandemic H1N1 2009, and 103 (60.9%) as unsubtyped influenza A. Through detailed case-based laboratory reporting where age data is provided, since August 29, 2010, 51.3% (1937/3779) of cases with A/H3N2 were aged 65 years or older. In contrast, the majority (94.0%, 632/672) of cases with pandemic H1N1 2009 were under 65 years of age (see Tests detailed table). In week 14, the proportion of positive tests for respiratory syncytial virus detections (RSV) increased slightly to 14.3% of specimens tested. The proportion of positive RSV tests appears to have peaked in week 07 (see Respiratory viruses graph).

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

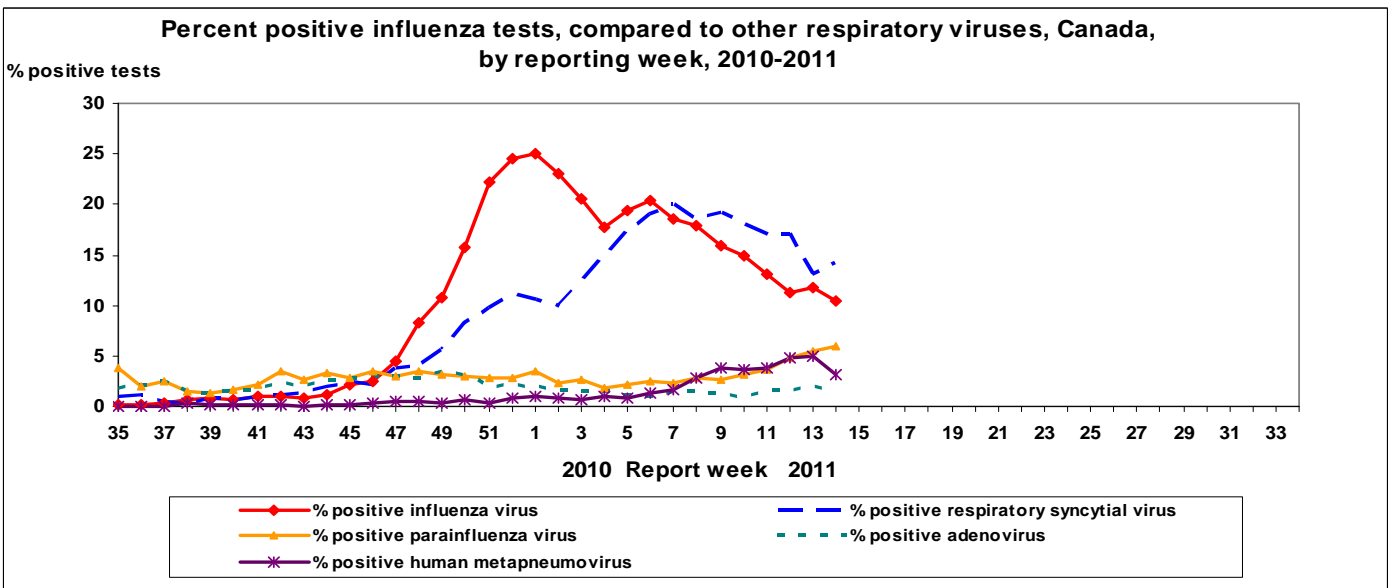
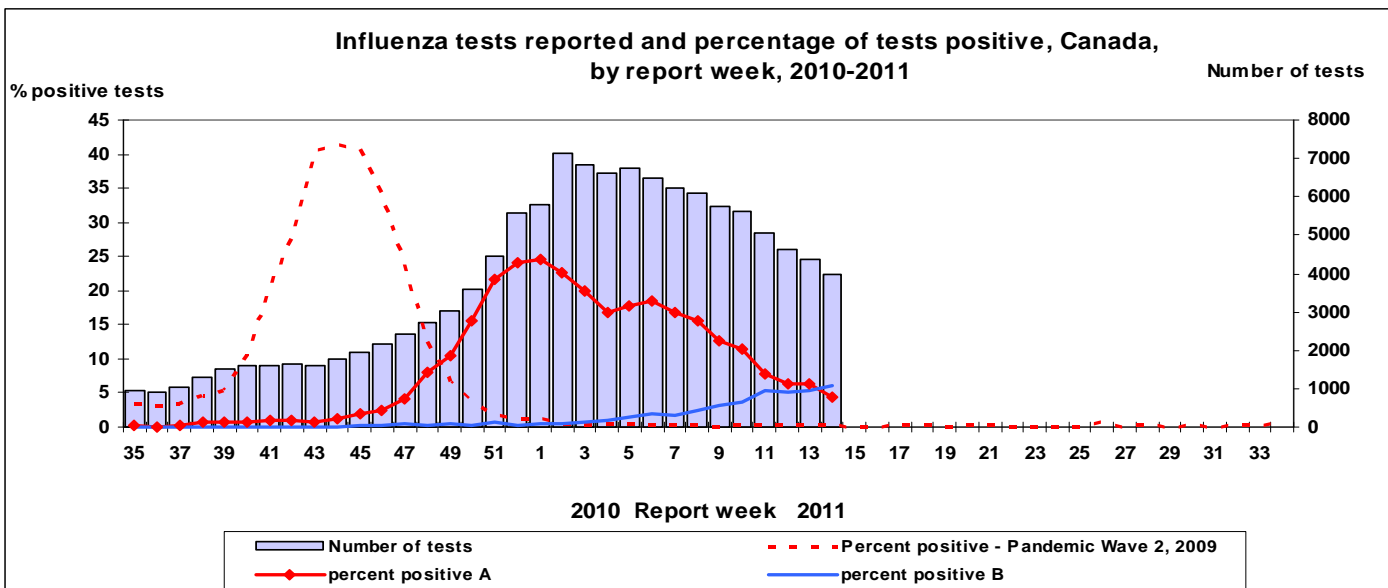
Reporting provinces	Weekly (April 3 to April 9, 2011)						Cumulative (August 29, 2010 to April 9, 2011)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	7	0	5	1	1	8	472	0	196	163	113	174
AB	31	0	19	9	3	77	1012	0	714	261	37	615
SK	2	0	1	0	1	36	297	0	199	30	68	98
MB	0	0	0	0	0	4	515	0	56	2	457	6
ON	31	0	6	0	25	44	6845	0	2427	264	4154	679
QC	46	0	1	2	43	73	5567	0	876	37	4654	461
NB	N/A	N/A	N/A	N/A	N/A	N/A	897	0	631	176	90	44
NS	20	0	14	0	6	0	237	0	70	11	156	3
PE	8	0	8	0	0	0	97	0	79	16	2	6
NL	24	0	0	0	24	1	167	0	103	6	58	5
Canada	169	0	54	12	103	243	16106	0	5351	966	9789	2091

*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 (Apr. 3 to Apr. 9, 2011)					Cumulative (Aug. 29, 2010 to Apr. 9, 2011)				
	Influenza A				B	Influenza A				B
	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total
<5	5	0	3	2	24	929	111	682	136	160
5-19	3	1	2	0	16	469	84	273	112	275
20-44	11	4	6	1	14	967	277	487	203	140
45-64	6	1	2	3	15	712	160	400	152	43
65+	21	0	6	15	7	2291	40	1937	314	73
Unknown	0	0	0	0	0	229	3	224	2	0
Total	46	6	19	21	76	5597	675	4003	919	691

*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 April 14, 2011, the National Microbiology Laboratory (NML) has antigenically characterized 632 influenza viruses that were received from provincial laboratories: 228 A/H3N2, 109 pandemic H1N1 2009 and 295 B viruses. Of the 228 influenza A/H3N2 viruses characterized, 225 (98.7%) were antigenically related to A/Perth/16/2009, which is the influenza A/H3N2 component recommended for the 2010-11 influenza vaccine. Three viruses (1.3%) tested showed reduced titer with antiserum produced against A/Perth/16/2009. Of the 109 pandemic H1N1 2009 viruses characterized, 108 (99%) were antigenically related to the pandemic vaccine virus A/California/7/2009, which is the recommended H1N1 component for the 2010-11 influenza vaccine. One virus (1%) tested showed reduced titer with antiserum produced against A/California/7/2009. Of the 295 influenza B viruses characterized, 280 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 280 viruses tested showed reduced titer with antisera produced against B/Brisbane/60/08. Fifteen 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 512 influenza A isolates (399 A/H3N2 and 113 pandemic H1N1 2009) for amantadine resistance and found that 398 influenza A/H3N2 were resistant to amantadine and one was sensitive. All 113 influenza A/H1N1 viruses were resistant to amantadine. Of 565 influenza viruses (205 A/H3N2, 103 pandemic H1N1 2009, and 257 influenza B) tested for resistance to oseltamivir, 204 A/H3N2 viruses were sensitive to oseltamivir and one was resistant to oseltamivir with E119V mutation. The resistant case was associated with oseltamivir prophylaxis/treatment. Of the 103 pandemic H1N1 2009 isolates tested, 102 were sensitive to oseltamivir and one was resistant to oseltamivir with the H275Y mutation. The resistant case was associated with oseltamivir treatment. All 257 B viruses were sensitive to oseltamivir. Of 558 influenza viruses (200 A/H3N2, 100 pandemic H1N1 2009, and 258 influenza B) tested for resistance to zanamivir, all isolates were found to be sensitive to zanamivir.

Severe Illness Surveillance

Paediatric Influenza Hospitalizations and Deaths

In week 14, 22 new laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network: 3 from BC, 4 from AB, 1 from SK, 13 from QC, and 1 from NL. This number has decreased slightly compared to the previous week (week 13) in which 25 paediatric hospitalizations were reported (note that numbers may fluctuate because of the delays in reporting). Five paediatric death have been reported via IMPACT this season all with underlying comorbidities.

Since the beginning of the season, 618 hospitalizations with laboratory-confirmed influenza have been reported from all participating provinces; 100 (16.2%) as influenza A/H3N2, 22 (3.6%) pandemic H1N1 2009, 333 (53.9%) as unsubtype influenza A, and 163 (26.4%) influenza B. The distribution of cases to date by age group was as follows: 16.8% among 0-5 month olds; 28.3% among 6-23 month olds; 29.1% among the 2-4 year-olds; 14.9% among 5-9 year-olds; and 10.8% among children 10-16 years old.

Adult Influenza Hospitalizations and Deaths

During week 14, 7 new hospitalizations with laboratory-confirmed influenza among adults (16 years of age and older) were reported through the Canadian Nosocomial Infection Surveillance Program (CNISP). This number has decreased compared to the 11 cases reported in week 13 (note that numbers may fluctuate because of the delays in reporting). Of the 7 new cases reported between April 3 and 9, 2011, 2 (28.6%) tested positive for unsubtype influenza A, 1 (14.3%) as A/H3N2, and 4 (57.1%) as influenza B. Since the beginning of the season, 943 hospitalized cases have been reported: 201 (21.3%) A/H3N2, 45 (4.8%) pandemic H1N1 2009, 637 (67.6%) influenza A unsubtype, and 60 (6.4%) influenza B, from all reporting provinces. To date, 638 of the 943 (67.7%) cases were aged 65 years or older and 425 (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 14, three deaths with influenza were reported in Ontario: in persons 45-64 and >65 years old with influenza A/H3N2 or unsubtype influenza A. Among the 217 fatal cases reported since the beginning of the influenza season, influenza A/H3N2 was identified in 61.8% (134/217), unsubtype influenza A in 27.6% (60/217), pandemic H1N1 2009 in 6.0% (13/217), and influenza B in 4.6% (10/217). Seventy-nine percent (172/217) of these fatal cases were among persons 65 years of age or older, and another 11% (24/217) were between the ages of 45 and 64 years old, in keeping with the age-groups usually affected by A/H3N2. (Note that numbers may fluctuate because of the delays in reporting).

International influenza update

Northern Hemisphere

United States: During week 13 (March 27 to April 2, 2011), influenza activity continued to decrease. Eleven percent (399/3,616) of specimens tested were positive for influenza, of which 68.2% were influenza A and 31.8% were influenza B. Among influenza A specimens, the proportion of A/H3 (40.0%) was greater than the proportion of pandemic H1N1 2009 (23.9%). The proportion of deaths attributed to pneumonia and influenza (P&I) was at or above threshold for the tenth consecutive week. Two influenza-associated paediatric deaths were reported for a total of 91 this season, of which 33 were associated with influenza B, 23 with pandemic H1N1 2009, 17 with A/H3, and 18 with unsubtype influenza A. The proportion of outpatient visits for influenza-like illness (ILI) was 1.6%, below the national baseline of 2.5%.
<http://www.cdc.gov/flu/weekly/index.htm>

Europe: In week 13 (28 March to 3 April 2011), 24 European countries experienced influenza activity of low intensity and in all 28 reporting EU/EEA countries trends were unchanging or decreasing. For the third week, more influenza B viruses than influenza A viruses were reported. Of the detected influenza viruses, 32.6% were of type A, and 67.4% were of type B. The latter virus type was dominant or co-dominant with influenza virus A(H1N1)2009 in eleven countries. Three countries notified 22 cases with severe acute respiratory infection, of which five were associated with influenza infection.
http://ecdc.europa.eu/en/publications/Publications/110408_SUR_Weekly_Influenza_Surveillance_Overview.pdf

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 **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.