

March 13 to 19, 2011 (Week 11)

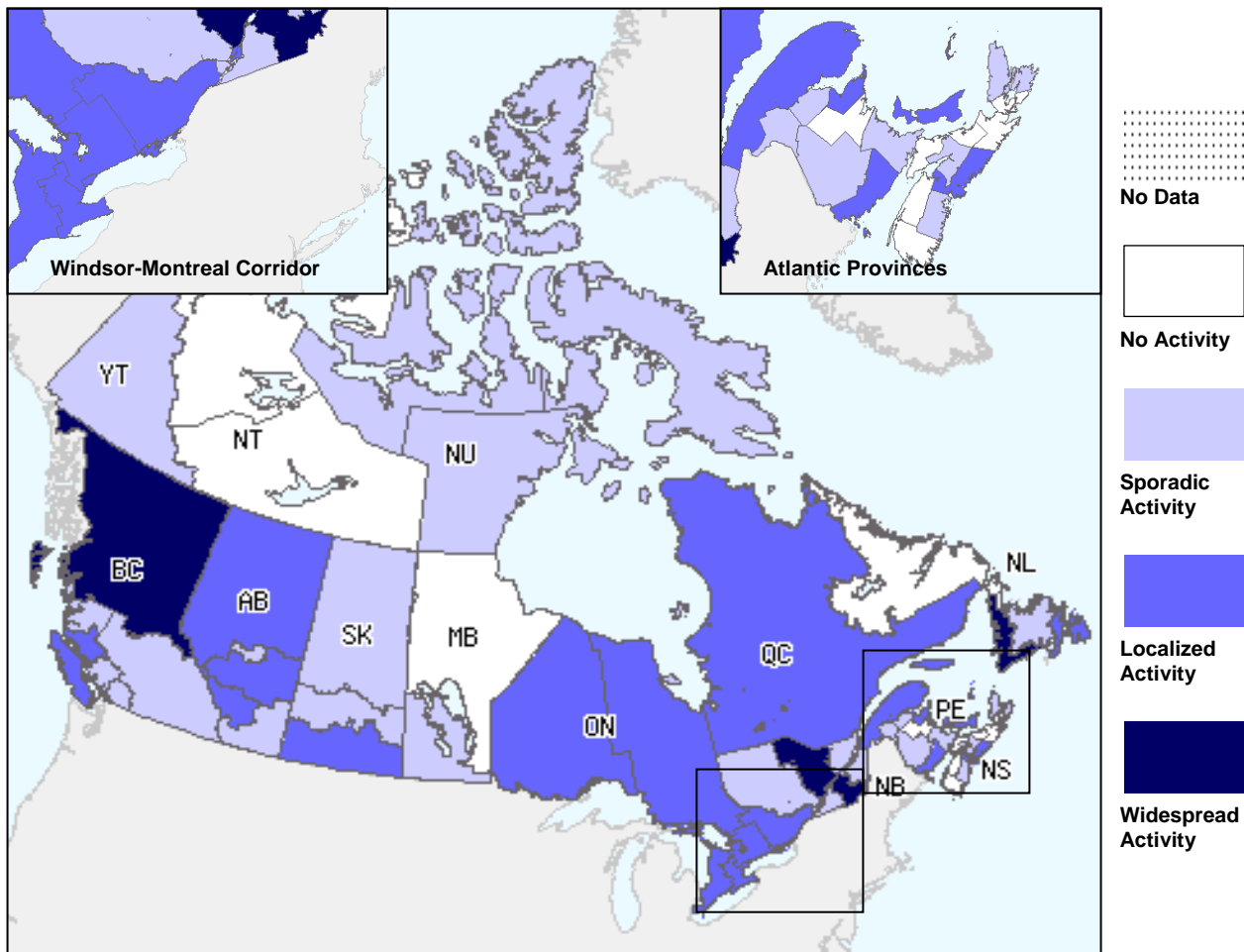
Overall Influenza Summary

- In week 11, influenza B is increasing steadily in most regions of the country except the Atlantic provinces. Of the 616 positive tests reported during week 11, 59.9% were influenza A and 40.1% were influenza B.
- There was a significant increase in the number of influenza and ILI outbreaks reported this week, with over half of the outbreaks reported in schools.
- The ILI consultation rate remained similar to the previous week, while adult hospitalizations increased, and pediatric hospitalizations decreased.

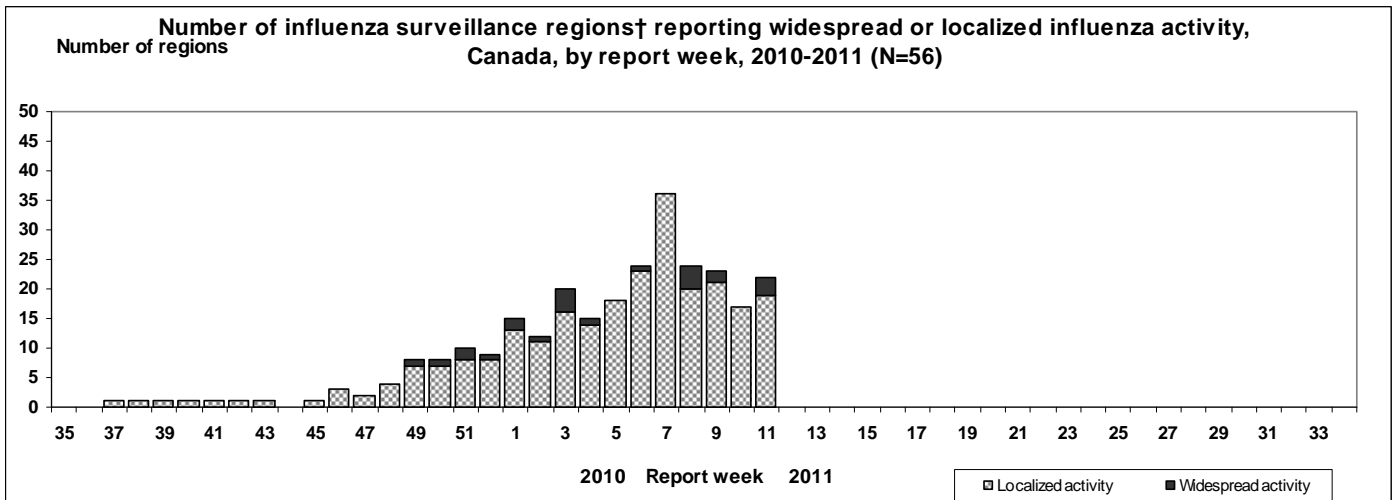
Influenza Activity and Outbreaks

In week 11, 3 regions reported widespread activity: BC(1), QC(1) and NL(1); 19 regions reported localized activity: BC(1), AB(3), SK(1), ON(7), QC(2), NB(2), NS(1), NL(1), and PE(1); 24 regions reported sporadic activity (in all provinces and territories except ON, NT and PE) and 10 regions presented no activity (see Activity level Map). Compared to the previous week (week 10), 12 regions reported an increased level of influenza activity, 8 regions reported decreased activity, and 30 regions maintained a stable level of influenza activity (sporadic or higher). Forty-one new outbreaks were reported: 13 outbreaks of influenza in long-term care facilities (LTCF) in BC(1), ON(2), QC(5), NB (2), and NS(3); 3 outbreaks of influenza B in schools in AB; 22 ILI outbreaks in schools in BC(5), AB(3), NB(1), NS(8), PE(1) and NL(4); one influenza A/H3N2 outbreak in a facility in PE, and 2 ILI outbreaks in other settings in NL.

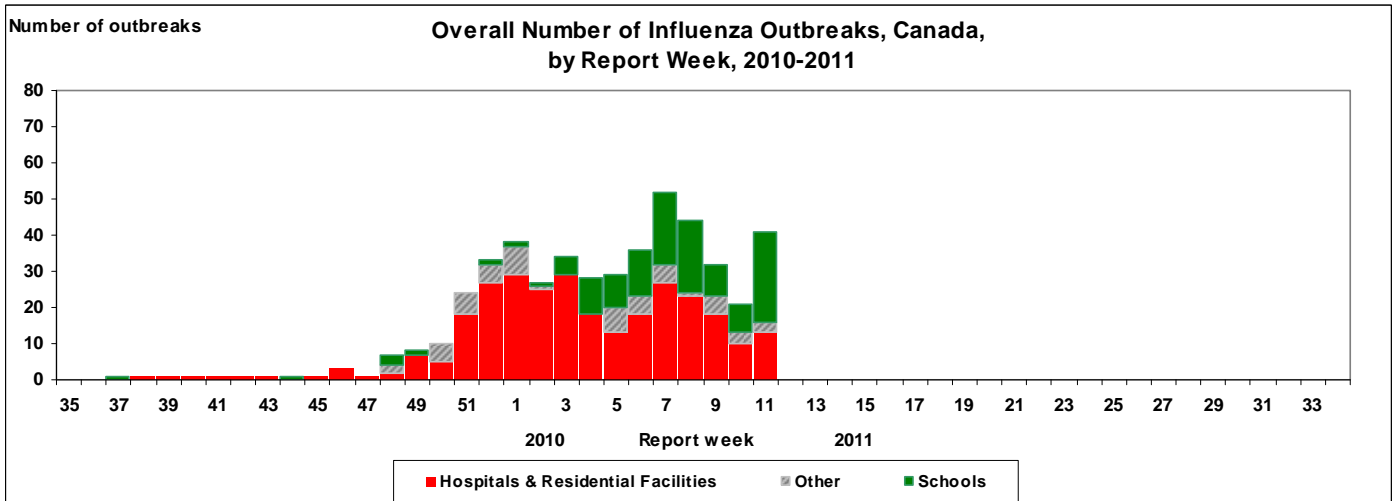
Map of overall Influenza activity level by province and territory, Canada, Week 11



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.

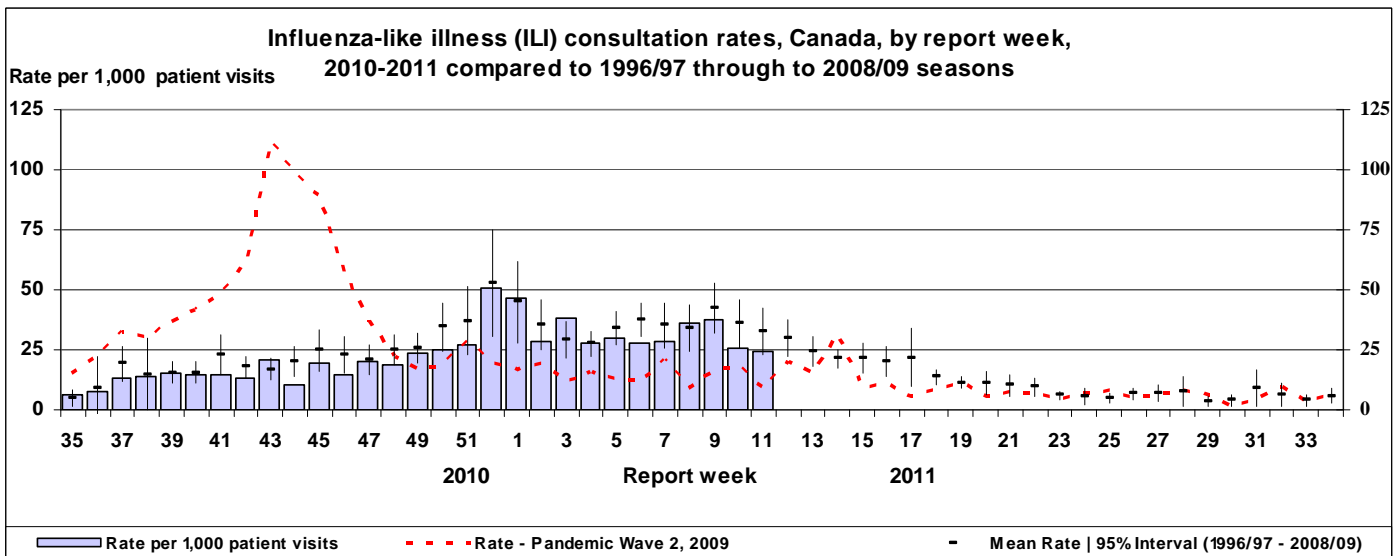


Note that this was the first year that all the provinces and territories were reporting on influenza outbreaks in schools (greater than 10% absenteeism on any day most likely due to ILI) which has increased considerably the total number of outbreaks reported compared to previous years.



ILI consultation rate

During week 11, the national ILI consultation rate was 24.0 consultations per 1,000 patient visits, which is decreased slightly compared to 25.5 in week 10 and within the expected rate for this time of year (see ILI graph). Children under 5 years of age and children between 5 and 19 years old had similar consultation rates (39.3 and 39.2 per 1,000 consultations, respectively) in week 11.



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 11 was 12.6% (7.5% influenza A, 5.0% influenza B), a decrease from 15.0% in week 10. The proportion of positive tests peaked in week 52 (see Influenza tests graph). Of the 616 positive tests reported during week 11, 369 (59.9%) were influenza A and 247 (40.1%) were influenza B. Since the beginning of the season, 91.9% (15,346/16,704) of influenza virus detections have been influenza A viruses, of which 85.0% of subtyped specimens have been A/H3N2. Detections of influenza B have been increasing steadily since week 03, where it accounted for 3.4% of all positive influenza specimens to 40.1% in week 11. Among influenza A detections in week 11, 147 (39.8%) specimens were reported as influenza A/H3N2, 49 (13.3%) as pandemic H1N1 2009, and 173 (46.9%) as unsubtyped influenza A. Through detailed case-based laboratory reporting where age data is provided, since August 29, 2010, 51.1% (1921/3761) of cases with A/H3N2 were aged 65 years or older. In contrast, the majority (94.5%, 635/672) of cases with pandemic H1N1 2009 were under 65 years of age (see Tests detailed table). In week 11, the proportion of positive tests for respiratory syncytial virus detections (RSV) decreased slightly to 16.8% of specimens tested and appears to have peaked at week 07 (see Respiratory viruses graph).

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

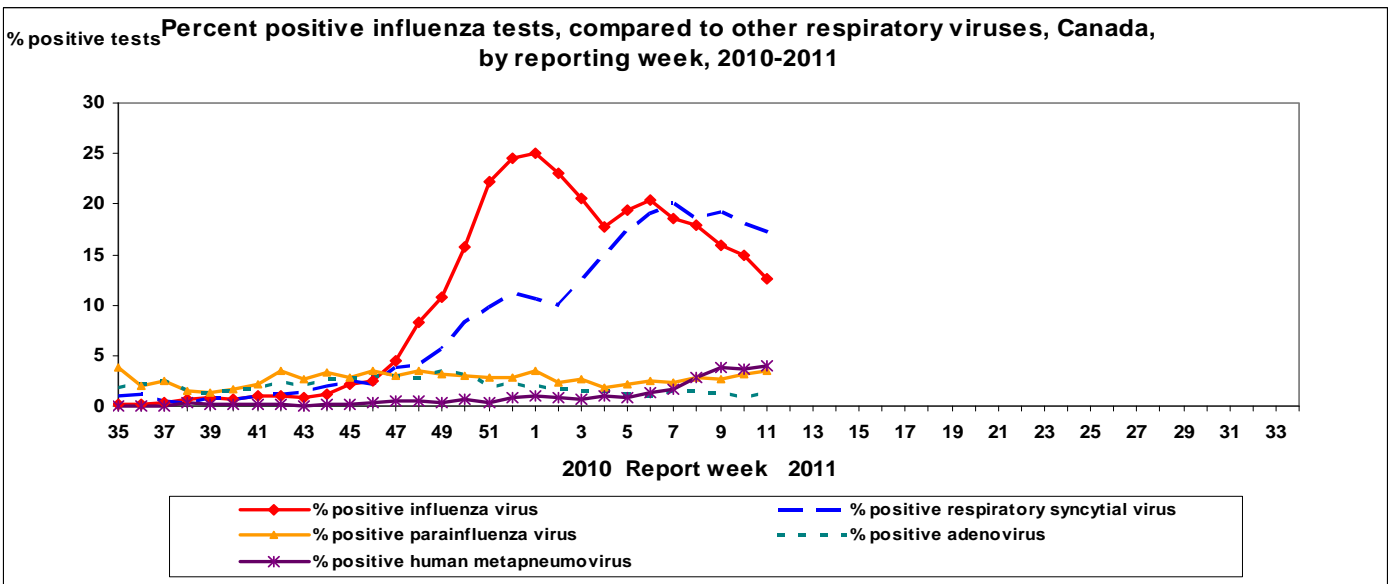
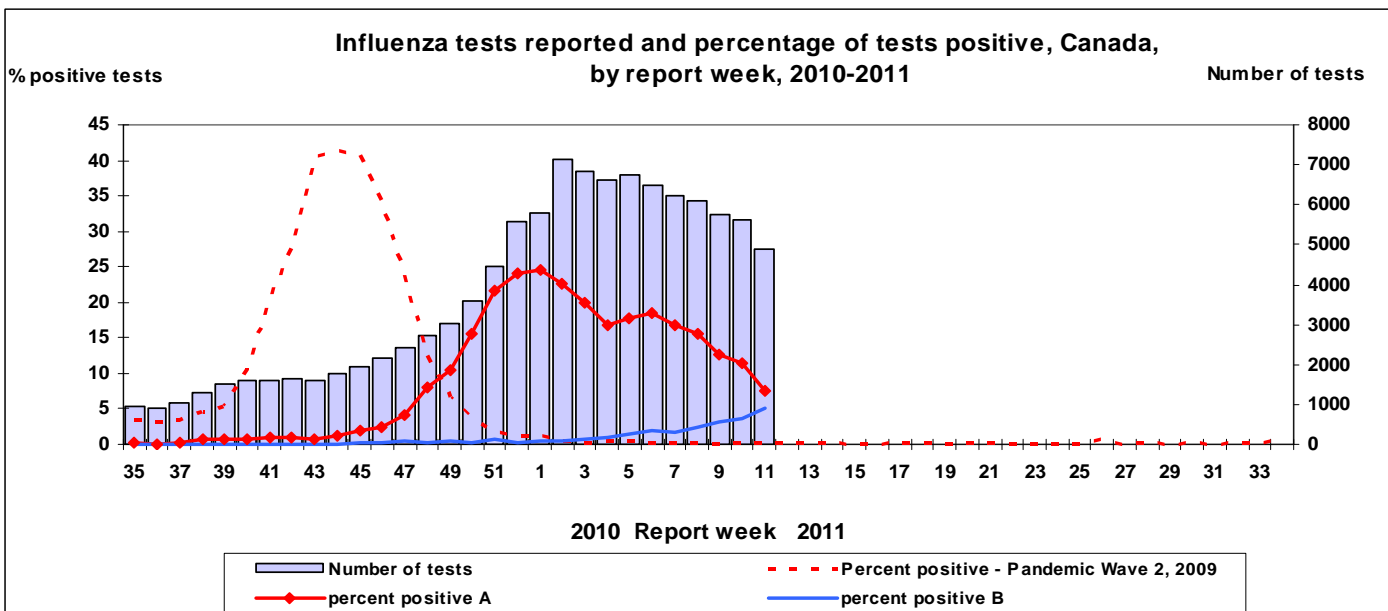
Reporting provinces	Weekly (March 13 to 19, 2011)						Cumulative (August 29, 2010 to March 19, 2011)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	37	0	19	13	5	38	415	0	168	144	103	142
AB	45	0	28	17	0	58	878	0	626	224	28	350
SK	6	0	2	0	4	14	278	0	192	24	62	35
MB	1	0	0	1	0	0	515	0	56	2	457	0
ON	101	0	16	1	84	83	6684	0	2395	263	4026	485
QC	75	0	15	2	58	52	5398	0	861	35	4502	307
NB	63	0	40	15	8	0	831	0	599	171	61	31
NS	13	0	0	0	13	1	179	0	38	9	132	3
PE	12	0	12	0	0	1	69	0	52	15	2	4
NL	16	0	15	0	1	0	99	0	85	4	10	1
Canada	369	0	147	49	173	247	15346	0	5072	891	9383	1358

*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 (Mar. 13 to Mar. 19, 2011)					Cumulative (Aug. 29, 2010 to Mar. 19, 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	14	3	10	1	24	938	113	685	140	155
5-19	14	5	5	4	58	471	85	272	114	265
20-44	23	12	7	4	12	968	277	487	204	136
45-64	17	9	6	2	5	711	160	396	155	41
65+	31	0	21	10	9	2279	37	1921	321	68
Unknown	0	0	0	0	0	229	3	224	2	0
Total	99	29	49	21	108	5596	675	3985	936	665

*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 March 24, 2011, the National Microbiology Laboratory (NML) has antigenically characterized 435 influenza viruses that were received from provincial laboratories: 202 A/H3N2 from BC, AB, SK, MB, ON, QC, NB & NU, 90 pandemic H1N1 2009 from BC, AB, ON, QC, NB & NS and 143 B viruses from BC, AB, SK, ON, QC & NB. All 202 influenza A/H3N2 viruses characterized were antigenically related to A/Perth/16/2009, which is the influenza A/H3N2 component recommended for the 2010-11 influenza vaccine. The 90 pandemic H1N1 2009 viruses characterized were antigenically related to the pandemic vaccine virus A/California/7/2009, which is the recommended H1N1 component for the 2010-11 influenza vaccine. Of the 143 influenza B viruses characterized, 134 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 134 viruses tested showed reduced titer with antisera produced against B/Brisbane/60/08. Nine 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 421 influenza A isolates (325 A/H3N2 and 96 pandemic H1N1 2009) for amantadine resistance and found that 324 influenza A/H3N2 were resistant to amantadine and one was sensitive. All 96 influenza A/H1N1 viruses were resistant to amantadine. Of 400 influenza viruses (177 A/H3N2, 89 pandemic H1N1 2009, and 135 influenza B) tested for resistance to oseltamivir, 176 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. All 135 B viruses were sensitive to oseltamivir. Of the 89 pandemic H1N1 2009 isolates tested, 88 were sensitive to oseltamivir and one was resistant to oseltamivir with the H275Y mutation. The resistant case was associated with oseltamivir treatment. Of 396 influenza viruses (174 A/H3N2, 86 pandemic H1N1 2009, and 136 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 11, 24 new laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network: 6 from BC, 2 from SK, 6 from ON, 7 from QC, and 3 from NL. This number has decreased compared to the previous week (week 10) in which 32 paediatric hospitalizations were reported (note that numbers may fluctuate because of the delays in reporting). Two influenza associated deaths were retrospectively reported in week 11; one child aged 6-23 months, who tested positive for influenza B (occurred in week 07); and the second child aged 2-4 years, who also tested positive for influenza B (occurred in week 10). So far this season, four deaths in children have been reported, all in Ontario.

Since the beginning of the season, 553 hospitalizations with laboratory-confirmed influenza have been reported from all participating provinces; 83 (15.0%) as influenza A/H3N2, 17 (3.1%) pandemic H1N1 2009, 341 (61.7%) as unsubtype influenza A, and 112 (20.3%) influenza B. The distribution of cases to date by age group was as follows: 17.2% among 0-5 month olds; 28.6% among 6-23 month olds; 29.5% among the 2-4 year-olds; 14.8% among 5-9 year-olds; and 9.9% among children 10-16 years old.

Adult Influenza Hospitalizations and Deaths

During week 11, 18 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 increased compared to the 11 cases reported in week 10 (note that numbers may fluctuate because of the delays in reporting). Of the 18 new cases reported between March 13 and 19, 2011, 10 (55.6%) tested positive for unsubtype influenza A, 2 (11.1%) as pandemic H1N1 2009, 1 (5.6%) as A/H3N2, and 5 (27.8%) as influenza B. Since the beginning of the season, 893 hospitalized cases have been reported: 195 (21.8%) A/H3N2, 39 (4.4%) pandemic H1N1 2009, 624 (69.9%) influenza A unsubtype, and 35 (3.9%) influenza B, from all reporting provinces except NL. To date, 609 of the 893 (68.2%) cases were aged 65 years or older and 403 (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 11, two deaths with influenza were reported in Ontario, one in a person over 65 years of age with influenza A/H3N2 and the other in a child 1-4 years old with influenza B. Among the 191 fatal cases reported since the beginning of the influenza season, influenza A/H3N2 was identified in 61.3% (117/191), unsubtype influenza A in 28.8% (55/191), pandemic H1N1 2009 in 5.8% (11/191), and influenza B in 4.2% (8/191). Seventy-nine percent (150/191) of these fatal cases were among persons 65 years of age or older, and another 12% (22/191) 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

United States: During week 10 (March 6-12, 2011), influenza activity decreased. Twenty-one percent (1,346/6,384) of specimens tested were positive for influenza, of which 72.9% were influenza A and 27.1% were influenza B. Among influenza A specimens, the proportion of A/H3 (39.3%) was greater than the proportion of pandemic H1N1 2009 (29.4%). The proportion of deaths attributed to pneumonia and influenza (P&I) was 8.6%, above the epidemic threshold of 8.0%, and marking the seventh consecutive week that this indicator is at or above threshold. Eleven influenza-associated paediatric deaths were reported for a total of 71 this season, of which 27 were associated with influenza B, 14 with A/H3, 16 with pandemic H1N1 2009, and 14 with unsubtype influenza A. The proportion of outpatient visits for influenza-like illness (ILI) was 3.0%, which is above the national baseline of 2.5%. The geographic spread of influenza in 31 states was reported as widespread, and 15 states reported regional influenza activity. <http://www.cdc.gov/flu/weekly/index.htm>

United Kingdom: In week 10 (ending March 13, 2011) influenza activity remains low in the UK, GP consultation rates are low, and no acute respiratory outbreaks were reported. There are low numbers of positive influenza detections with influenza B constituting the majority of virus detections. Up to 16 March 2011, 553 fatal influenza cases from across the UK have been reported to the HPA. Further epidemiological information on cases is available on 529 of these cases, of which 488 (92%) were associated with pandemic H1N1 2009, six with unsubtype influenza A and 35 (7%) with influenza B infection. http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1296683191106

Europe: In week 10 (7 to 13 March 2011), most European countries reported regional or sporadic influenza activity, with decreasing influenza-like illness (ILI)/acute respiratory infection (ARI) trends. Decreasing ILI/ARI trends were reported by the majority of countries. The proportion of influenza virus-positive sentinel specimens has decreased to 33.6% in week 10 since the peak in week 52/2010 at around 56%. In week 10/2011, 41.1% of influenza virus detections were type A, and 58.9% were type B. The latter are reported to be dominant now in a number of countries. Of the 26,293 subtyped influenza A viruses since week 40/2010, 98.0% were pandemic H1N1 2009. Thirty-two (3.0%) of influenza A(H1) 2009 viruses tested for susceptibility were resistant to oseltamivir but remained sensitive for zanamivir. All the resistant viruses carried the H275Y mutation. http://ecdc.europa.eu/en/publications/Publications/180311_SUR_Weekly_Influenza_Surveillance_Overview.pdf

Tropical Zone: Influenza activity in the tropics remains low in most areas with co-circulation of influenza B and influenza A(H1N1)2009. For the most part, sporadic activity is reported in regions of Central America, the Caribbean and the Andean Region. The Ministry of Health in Venezuela has reported an outbreak of A/H1N1 in one region of the country, with sporadic cases in some other regions. Vaccination and public health measures have been instituted in the affected region. It is not uncommon for countries in tropical areas to experience influenza circulation throughout the year. Guatemala, Ecuador and Kenya have recently reported increases in the number or proportion of positive influenza specimens. Influenza activity in tropical Asia remains low with the majority of cases involving influenza B and influenza A(H1N1)2009. http://www.who.int/csr/disease/influenza/latest_update_GIP_surveillance/en/index.html

Venezuela Ministry of Health: <http://www.mpps.gob.ve/modules.php?name=News&file=article&sid=2522>

Southern Hemisphere: Influenza activity remains low in most regions in the temperate zone of the southern hemisphere. However, Australia reports persistent low-level of out-of-season influenza activity, primarily in the northern tropical areas of the country. Influenza A(H3N2) is the predominant virus in Australia.

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.