

March 20 to 26, 2011 (Week 12)

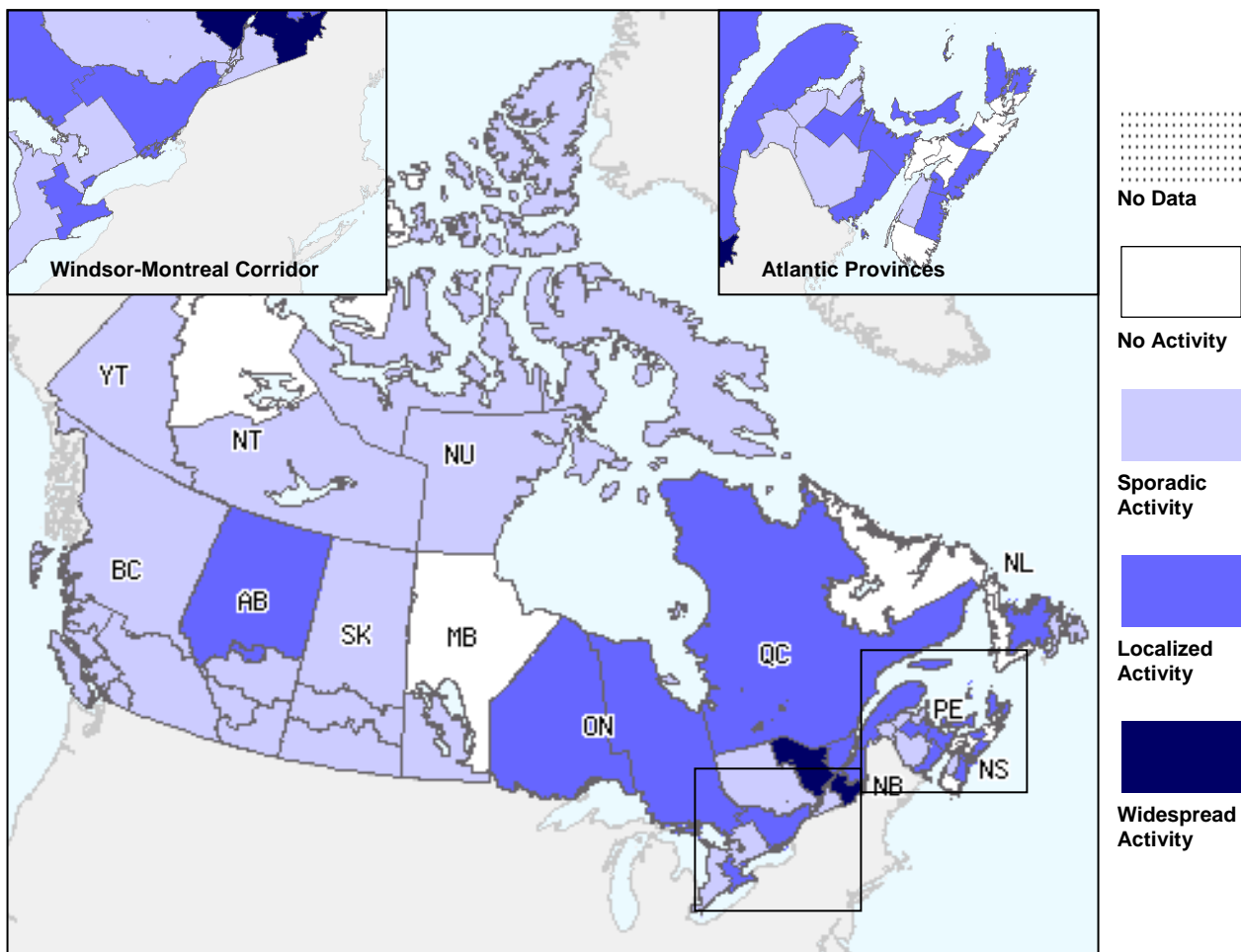
Overall Influenza Summary

- In week 12, influenza B continues to increase steadily in most regions of the country except the Atlantic provinces. Of the 520 positive tests reported during week 12, 55.6% were influenza A and 44.4% were influenza B.
- Influenza activity has declined in most of western Canada but persists in parts of Alberta, Ontario, Quebec and the Atlantic provinces. In week 12, the ILI consultation rate remained similar to the previous 2 weeks, fewer influenza/ILI outbreaks were reported, and both adult and paediatric hospitalizations decreased.

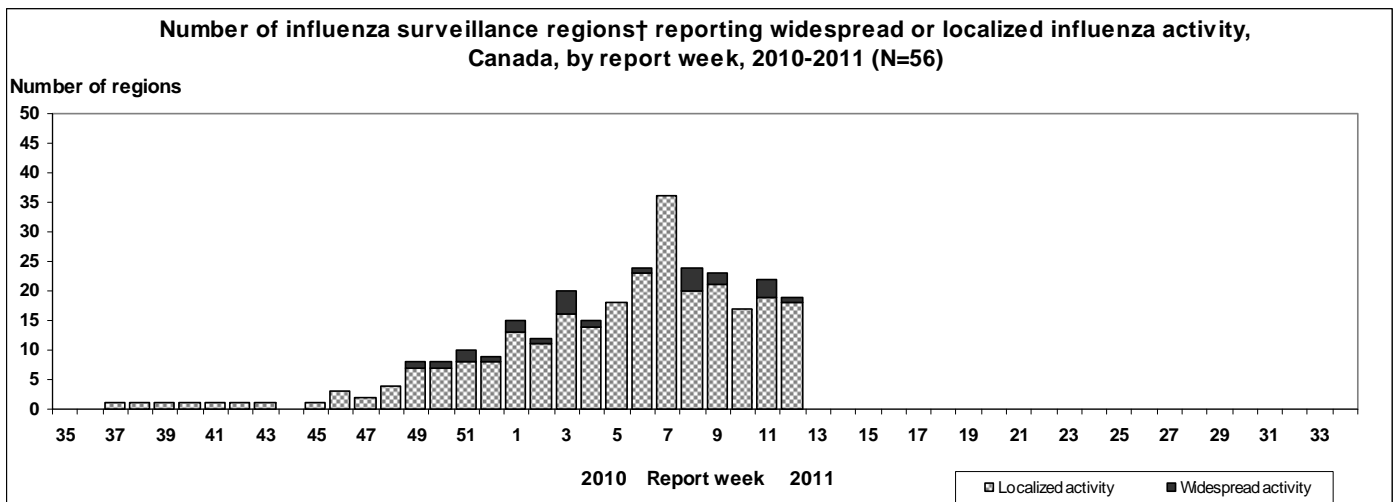
Influenza Activity and Outbreaks

In week 12, 1 region reported widespread activity in QC; 18 regions reported localized activity: AB(2), ON(5), QC(2), NB(3), NS(4), NL(1), and PE(1); 29 regions reported sporadic activity (in all provinces and territories except PE) and 8 regions presented no activity (see Activity level Map). Compared to the previous week (week 11), 10 regions reported an increased level of influenza activity, 12 regions reported decreased activity, and 28 regions maintained a stable level of influenza activity (sporadic or higher). Twenty-three new outbreaks were reported: 13 outbreaks of influenza in long-term care facilities (LTCF) in ON(3), QC(4), NB (1), NS(3), PE(1) and NL(1); 2 outbreaks of influenza B in schools in AB; 7 ILI outbreaks in schools in NB(2), NS(2), NL(3); and one ILI outbreak in a facility in NS.

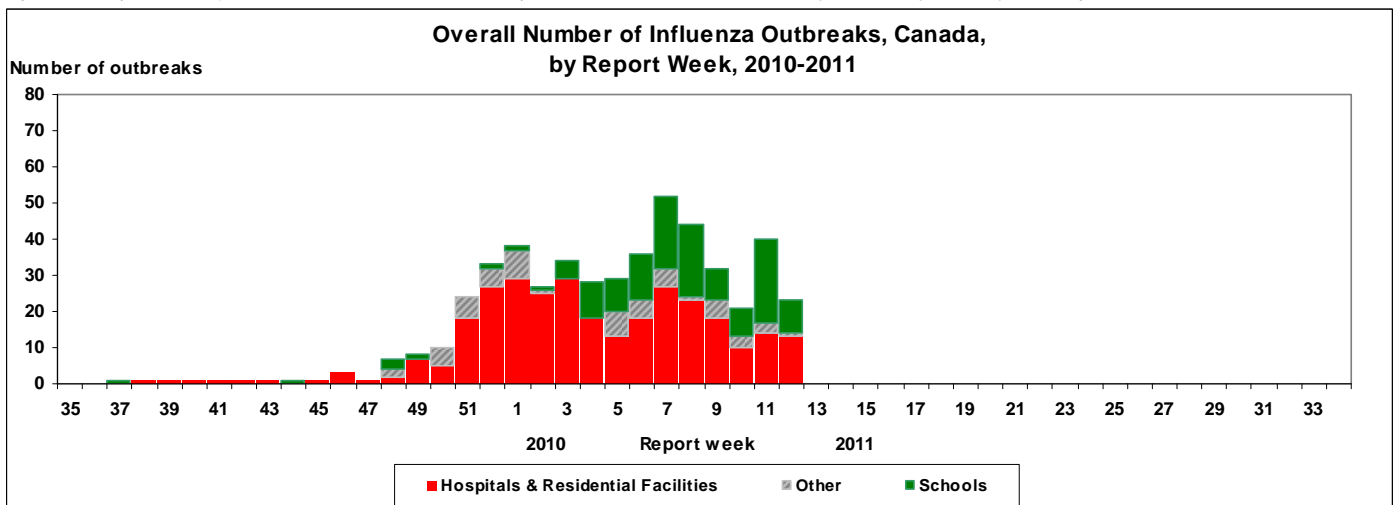
Map of overall Influenza activity level by province and territory, Canada, Week 12



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.

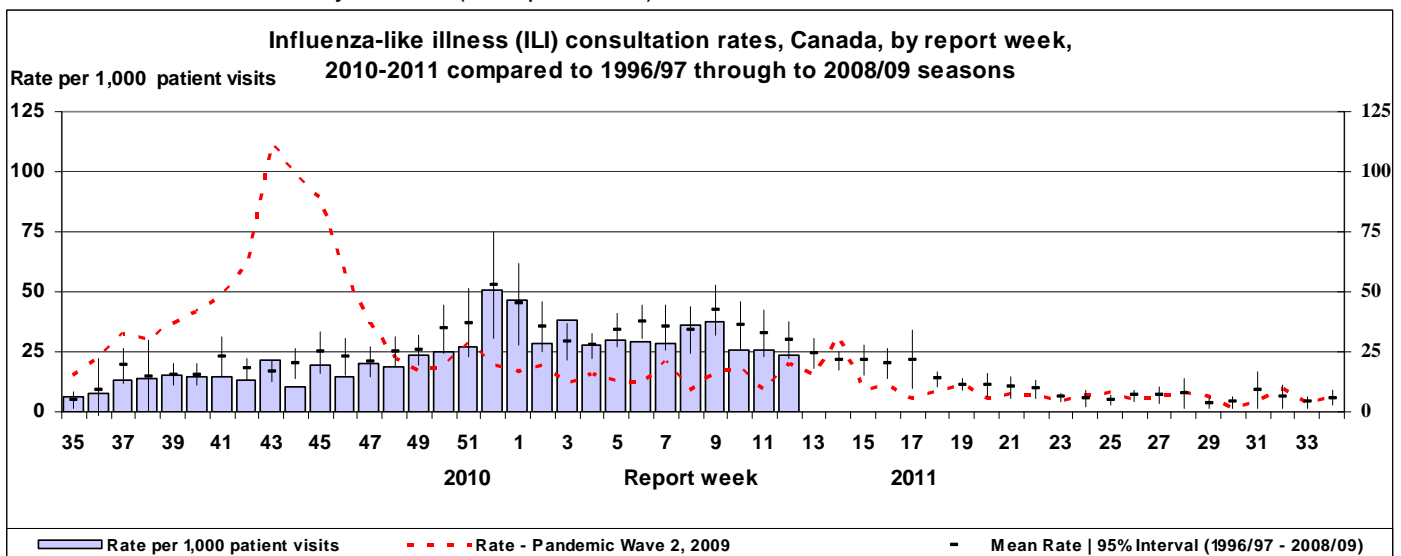


Note that this was the first year that all the provinces and territories were reporting on influenza outbreaks in schools (greater than 10% absenteeism on any day most likely due to ILI) which has increased considerably the total number of outbreaks reported compared to previous years.



ILI consultation rate

During week 12, the national ILI consultation rate was 23.4 consultations per 1,000 patient visits, which is decreased slightly compared to 25.9 in week 11 and within the expected rate for this time of year (see ILI graph). Children under 5 years of age had the highest consultation rates (98.0 per 1,000 consultations) followed by children between 5 and 19 years old (53.8 per 1,000) in week 12.



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 12 was 11.3% (6.3% influenza A, 5.0% influenza B), a decrease from 13.1% in week 11. The proportion of positive tests peaked in week 52 (see Influenza tests graph). Of the 520 positive tests reported during week 12, 289 (55.6%) were influenza A and 231 (44.4%) were influenza B. Since the beginning of the season, 90.7% (15,660/17,272) of influenza virus detections have been influenza A viruses, of which 84.8% 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 44.4% in week 12. Among influenza A detections in week 12, 110 (38.1%) specimens were reported as influenza A/H3N2, 33 (11.4%) as pandemic H1N1 2009, and 146 (50.5%) as unsubtyped influenza A. Through detailed case-based laboratory reporting where age data is provided, since August 29, 2010, 51.2% (1927/3767) of cases with A/H3N2 were aged 65 years or older. In contrast, the majority (94.2%, 632/671) of cases with pandemic H1N1 2009 were under 65 years of age (see Tests detailed table). In week 12, the proportion of positive tests for respiratory syncytial virus detections (RSV) was stable at 16.7% 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

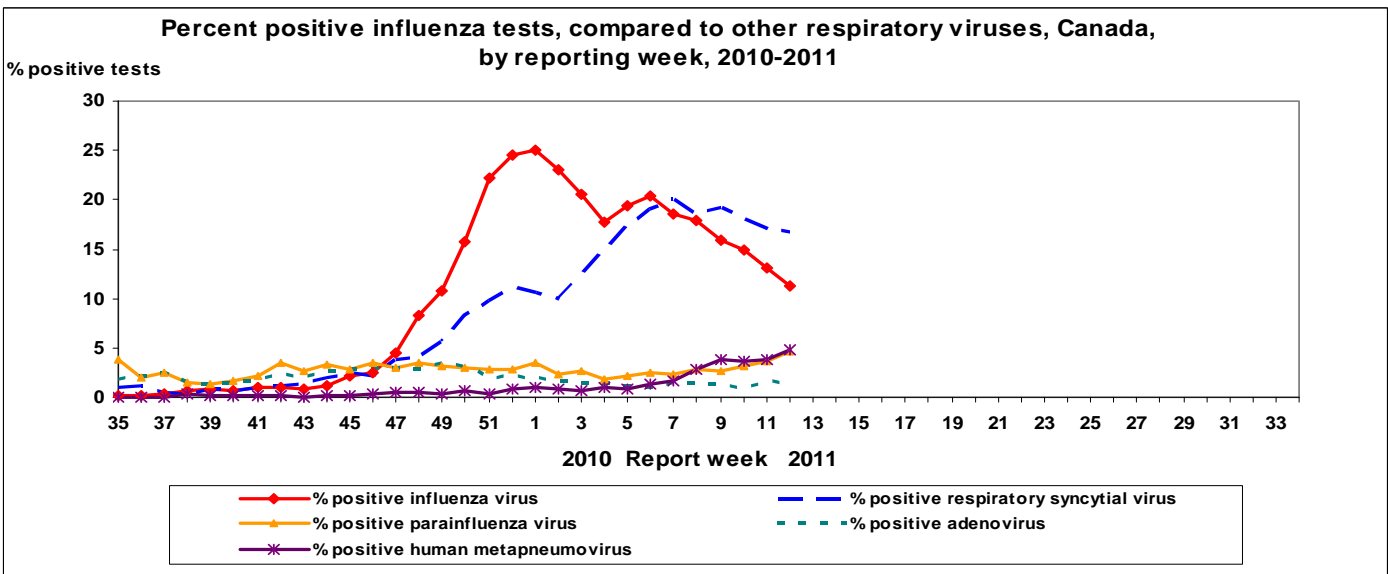
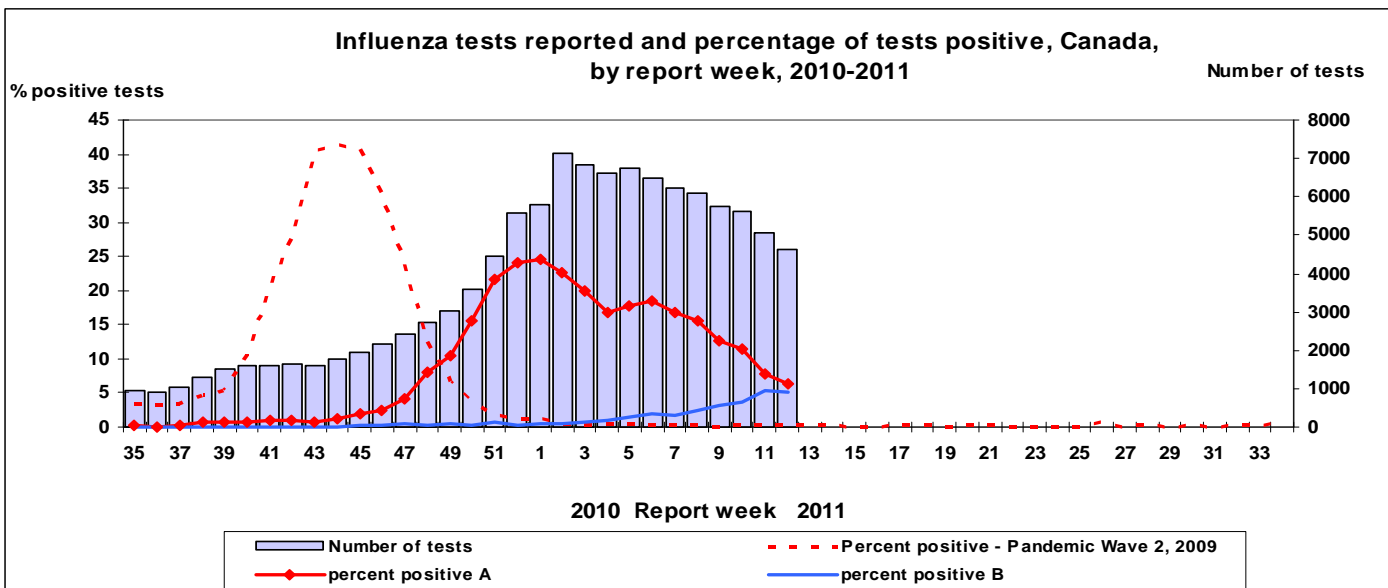
Reporting provinces	Weekly (March 20 to 26, 2011)						Cumulative (August 29, 2010 to March 26, 2011)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	29	0	12	9	8	16	444	0	180	153	111	158
AB	49	0	27	11	11	92	952	0	672	240	40	464
SK	12	0	4	6	2	10	290	0	196	30	64	45
MB	0	0	0	0	0	0	515	0	56	2	457	1
ON	53	0	5	1	47	74	6737	0	2400	264	4073	559
QC	69	0	14	0	55	31	5467	0	875	35	4557	338
NB	44	0	20	4	20	6	875	0	619	175	81	37
NS	7	0	3	1	3	0	186	0	41	10	135	3
PE	8	0	7	1	0	2	77	0	59	16	2	6
NL	18	0	18	0	0	0	117	0	103	4	10	1
Canada	289	0	110	33	146	231	15660	0	5201	929	9530	1612

*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. 20 to Mar. 26, 2011)					Cumulative (Aug. 29, 2010 to Mar. 26, 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	13	3	5	5	28	928	111	681	136	160
5-19	11	5	3	3	32	470	84	274	112	271
20-44	25	8	9	8	17	967	277	487	203	139
45-64	12	5	4	3	9	712	160	398	154	42
65+	15	0	9	6	10	2287	39	1927	321	70
Unknown	0	0	0	0	0	229	3	224	2	0
Total	76	21	30	25	96	5593	674	3991	928	682

*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 31, 2011, the National Microbiology Laboratory (NML) has antigenically characterized 493 influenza viruses that were received from provincial laboratories: 213 A/H3N2 from BC, AB, SK, MB, ON, QC, NB & NU, 95 pandemic H1N1 2009 from BC, AB, ON, QC, NB & NS and 185 B viruses from BC, AB, SK, ON, QC & NB. Of the 213 influenza A/H3N2 viruses characterized, 210 (98.6%) were antigenically related to A/Perth/16/2009, which is the influenza A/H3N2 component recommended for the 2010-11 influenza vaccine. Three viruses (1.4%) tested showed reduced titer with antiserum produced against A/Perth/16/2009. Of the 95 pandemic H1N1 2009 viruses characterized, 94 (98.9%) 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 (1.1%) tested showed reduced titer with antiserum produced against A/California/7/2009. Of the 185 influenza B viruses characterized, 176 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 176 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 455 influenza A isolates (358 A/H3N2 and 97 pandemic H1N1 2009) for amantadine resistance and found that 357 influenza A/H3N2 were resistant to amantadine and one was sensitive. All 97 influenza A/H1N1 viruses were resistant to amantadine. Of 442 influenza viruses (188 A/H3N2, 94 pandemic H1N1 2009, and 160 influenza B) tested for resistance to oseltamivir, 187 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 94 pandemic H1N1 2009 isolates tested, 93 were sensitive to oseltamivir and one was resistant to oseltamivir with the H275Y mutation. The resistant case was associated with oseltamivir treatment. All 160 B viruses were sensitive to oseltamivir. Of 435 influenza viruses (183 A/H3N2, 91 pandemic H1N1 2009, and 161 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 12, 17 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, 5 from AB, 4 from ON, 4 from QC, and 1 from NS. This number has decreased compared to the previous week (week 11) in which 30 paediatric hospitalizations were reported (note that numbers may fluctuate because of the delays in reporting). To date this season, four deaths in children have been reported, all in Ontario: two children were between 6 and 23 months old, one with pandemic H1N1 2009 and one with influenza B; one child was between 2 and 4 years old with influenza B; and one child was between 10 and 16 years old with unsubtype influenza A.

Since the beginning of the season, 576 hospitalizations with laboratory-confirmed influenza have been reported from all participating provinces; 84 (14.6%) as influenza A/H3N2, 18 (3.1%) pandemic H1N1 2009, 349 (60.6%) as unsubtype influenza A, and 125 (21.7%) influenza B. The distribution of cases to date by age group was as follows: 17.4% among 0-5 month olds; 28.6% among 6-23 month olds; 29.0% among the 2-4 year-olds; 14.4% among 5-9 year-olds; and 10.6% among children 10-16 years old.

Adult Influenza Hospitalizations and Deaths

During week 12, 12 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 18 cases reported in week 11 (note that numbers may fluctuate because of the delays in reporting). Of the 12 new cases reported between March 20 and 26, 2011, 4 (33.3%) tested positive for unsubtype influenza A, 1 (8.3%) as pandemic H1N1 2009, 2 (16.7%) as A/H3N2, and 5 (41.7%) as influenza B. Since the beginning of the season, 918 hospitalized cases have been reported: 199 (21.7%) A/H3N2, 41 (4.5%) pandemic H1N1 2009, 630 (68.6%) influenza A unsubtype, and 48 (5.2%) influenza B, from all reporting provinces except NL. To date, 624 of the 918 (68.0%) cases were aged 65 years or older and 416 (45.3%) 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 12, four deaths with influenza were reported, one in Ontario in a person over 65 years of age with influenza B, one in Nova Scotia in a person over 65 years of age with influenza A/H3N2, and the 2 others in PEI both in persons over 65 years of age with A/H3N2. Among the 196 fatal cases reported since the beginning of the influenza season, influenza A/H3N2 was identified in 60.7% (119/196), unsubtype influenza A in 28.1% (55/196), pandemic H1N1 2009 in 6.1% (12/196), and influenza B in 5.1% (10/196). Seventy-nine percent (154/196) of these fatal cases were among persons 65 years of age or older, and another 12% (23/196) 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 11 (March 13-19, 2011), influenza activity decreased. Nineteen percent (1,158/6,144) of specimens tested were positive for influenza, of which 72.1% were influenza A and 27.9% were influenza B. Among influenza A specimens, the proportion of A/H3 (37.8%) was greater than the proportion of pandemic H1N1 2009 (28.4%). The proportion of deaths attributed to pneumonia and influenza (P&I) was 8.6%, above the epidemic threshold of 8.0%, and marking the eighth consecutive week that this indicator is at or above threshold. Six influenza-associated paediatric deaths were reported for a total of 77 this season, of which 27 were associated with influenza B, 16 with A/H3, 17 with pandemic H1N1 2009, and 15 with unsubtype influenza A. The proportion of outpatient visits for influenza-like illness (ILI) was at the national baseline of 2.5%. The geographic spread of influenza in 18 states was reported as widespread, and 22 states reported regional influenza activity. <http://www.cdc.gov/flu/weekly/index.htm>

Europe: In week 11 (14 to 20 March 2011), most European countries reported low or medium influenza activity, with stable or decreasing trends in influenza-like illness (ILI)/acute respiratory infection (ARI). Influenza activity continues to be higher in eastern European countries compared to western Europe. The proportion of influenza virus-positive sentinel specimens increased to 43.4% in week 11 compared to 33.6% in week 10. In week 11, 46.1% of influenza virus detections were type A, and 53.9% were type B. Influenza B virus was reported as dominant by six countries and the UK (Northern Ireland and Scotland) and co-dominant with pandemic H1N1 2009 by five countries. It was the first week of this season that the proportion of influenza B viruses was overall higher than that of influenza A viruses. Sixty-four (3.3%) of pandemic H1N1 2009 viruses tested for susceptibility were resistant to oseltamivir but remained sensitive for zanamivir. All the resistant viruses carried the H275Y mutation. Sixteen of 53 resistant viruses, from patients for whom exposure to antivirals was known, were from patients who had not been treated with oseltamivir. http://ecdc.europa.eu/en/publications/Publications/110325_SUR_Weekly_Influenza_Surveillance_Overview.pdf

Tropical Zone – Venezuela: On 30 March, 2011, the Ministry of Health in Venezuela reported 482 cases of A/H1N1 in the country, with 189 (39.2%) identified in Mérida state and the majority of other cases in neighbouring states and the capital region. Vaccination and public health measures have been instituted. It is not uncommon for countries in tropical areas to experience influenza circulation throughout the year, and the Venezuelan Ministry of Health states that the current volume of

cases does not constitute an outbreak in any of the affected regions.
<http://www.mpps.qob.vt/modules.php?name=News&file=article&sid=2528>

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.