

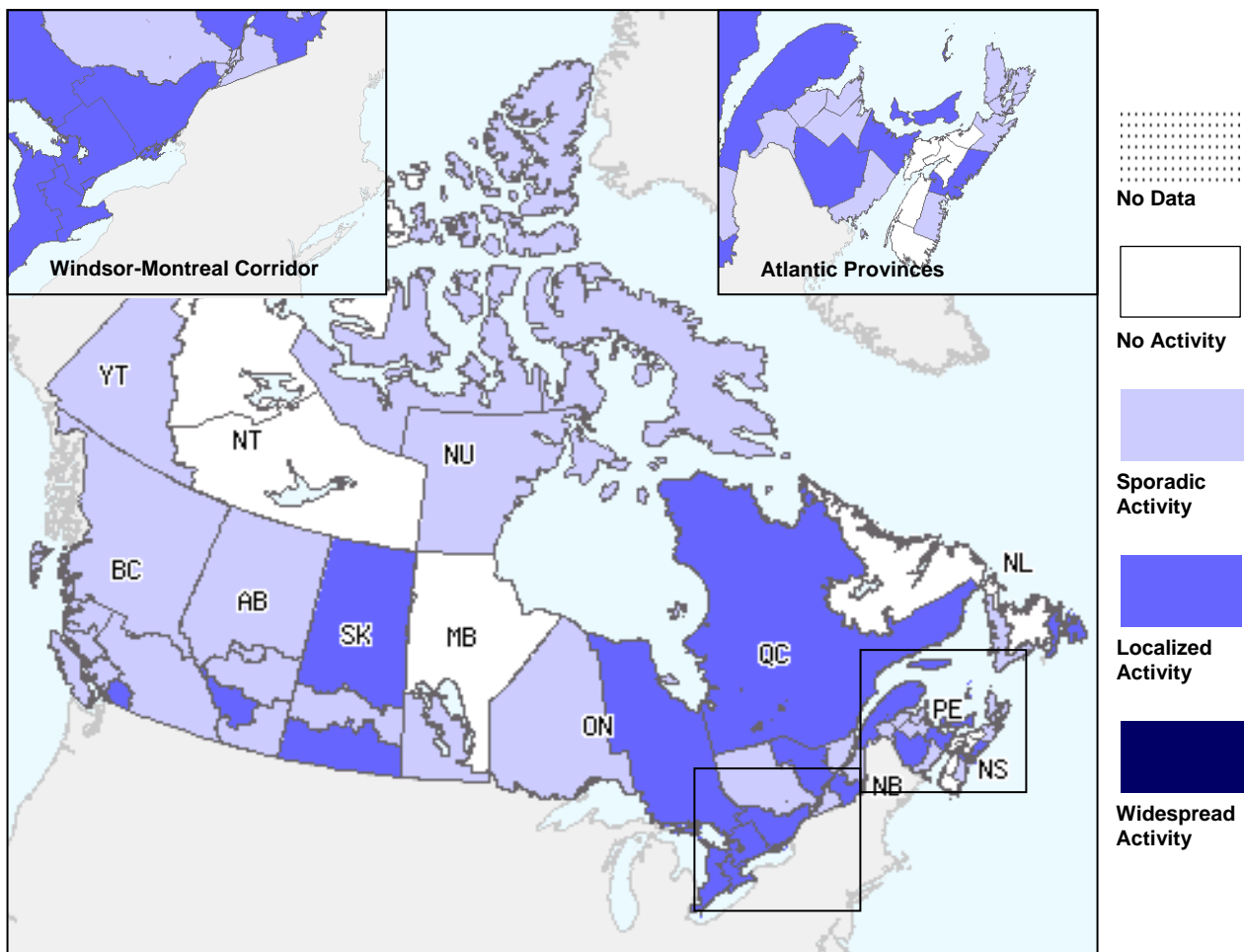
March 6 to 12, 2011 (Week 10)

- In week 10, overall influenza activity is on the decline in many parts of the country. All influenza indicators including the number of outbreaks, the proportion of positive influenza detections, adult and paediatric hospitalizations, and the ILI consultation rate have declined this week.
- Since the beginning of the season, 86% of the subtyped positive influenza A specimens have been influenza A/H3N2. Influenza B, circulating at low levels, has been slowly increasing since week 03 and now accounts for 24% of all influenza positive specimens. The percentage of positive RSV specimens has been decreasing over the last two weeks and appears to have peaked at week 07.

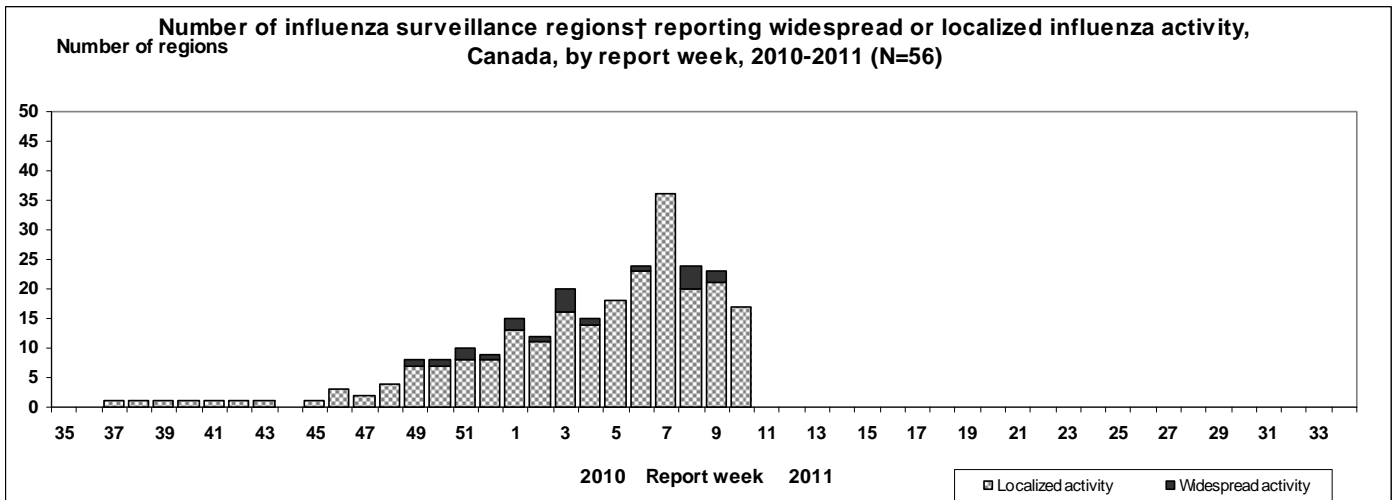
Overall Influenza Summary – Week 10 (March 6 to 12, 2011)

In week 10, 17 regions reported localized activity (in BC(1), AB(1), SK(2), ON(6), QC(2), NB(2), NS(1), NL(1), and PE(1)), 29 regions reported sporadic activity (in all provinces and territories except NT and PE) and 10 regions presented no activity (see Activity level Map). Compared to the previous week (week 09), 4 regions reported an increased level of influenza activity, 14 regions reported decreased activity, and 31 regions maintained a stable level of influenza activity (sporadic or higher). Twenty-one new outbreaks were reported: 10 outbreaks of influenza in long-term care facilities (LTCF) in ON(1), QC(2), NB (2), NS(4) and PE(1); 8 ILI outbreaks in schools in AB(2), ON(1), NS(4) and PE(1); 1 pandemic H1N1 2009 outbreak in an adult residential facility in BC, and 2 ILI outbreaks in other settings in NB(1) and NL(1).

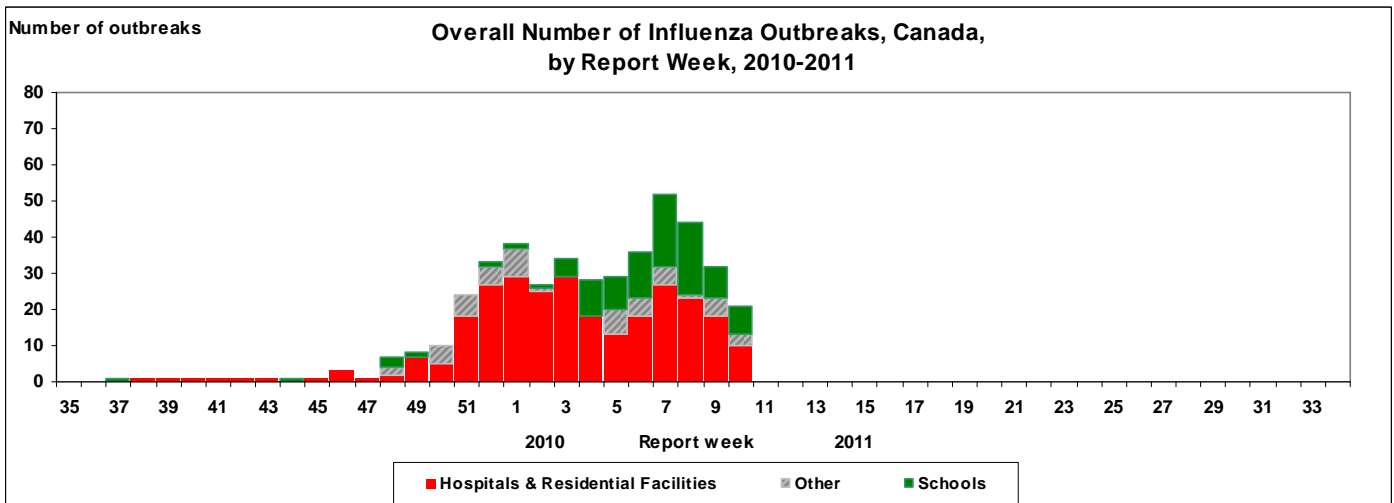
Map of overall Influenza activity level by province and territory, Canada, Week 10



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.

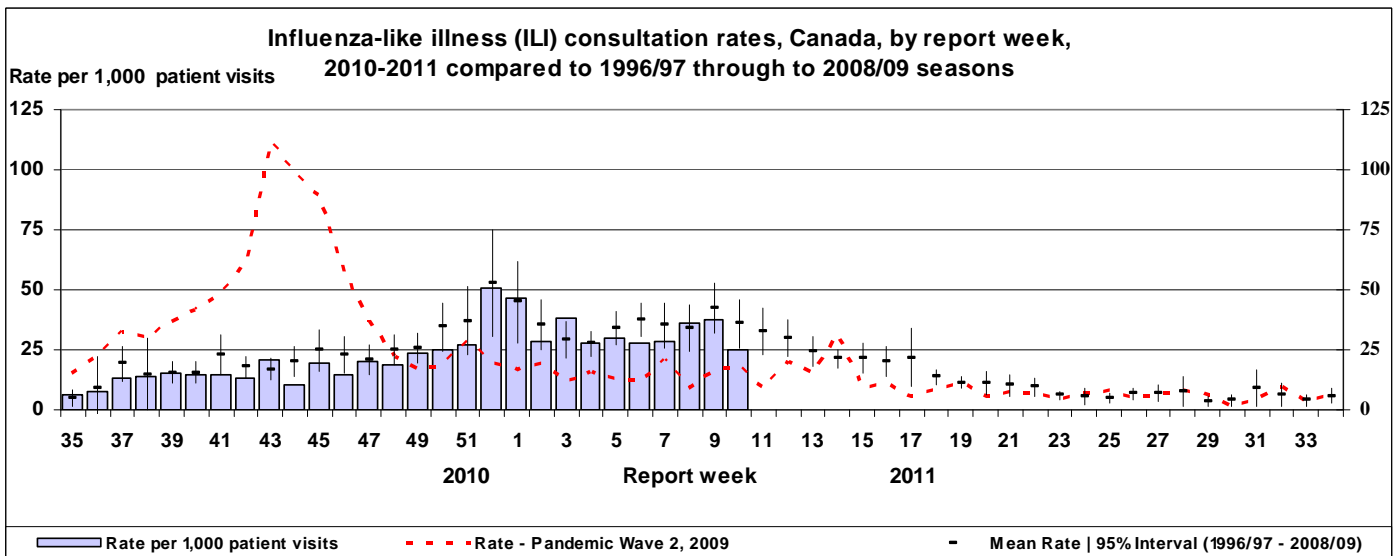


Note that this was the first year that all the provinces and territories were reporting on influenza outbreaks in schools (greater than 10% absenteeism on any day most likely due to ILI) which has increased considerably the total number of outbreaks reported compared to previous years.



ILI consultation rate

During week 10, the national ILI consultation rate was 25.3 consultations per 1,000 patient visits, which is a decrease from 37.4 in week 09 and slightly below the expected rate for this time of year (see ILI graph). Children under 5 years of age had the highest consultation rates (52.2 per 1,000 consultations in week 10) followed by children between 5 and 19 years old (49.2 per 1,000).



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 proportion of tests that were positive for influenza during week 10 was 14.9%, a decrease from 15.9% in week 09. The proportion of positive tests peaked in week 52. Of the 833 positive tests reported during week 10, 282 (33.9%) specimens were reported as influenza A/H3N2, 66 (7.9%) as pandemic H1N1 2009, 284 (34.0%) as untyped influenza A and 201 (24.1%) as influenza B. Since the beginning of the season, the majority of influenza virus detections have been influenza A viruses (93.1% or 14,970/16,080), and among subtyped influenza A specimens 85.5% 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 24.1% in week 10. Through detailed case-based laboratory reporting where age data is provided, since August 29, 2010, 51.4% (1885/3666) of cases with A/H3N2 were aged 65 years or older. In contrast, the majority (94.2%, 604/641) of cases with pandemic H1N1 2009 were under 65 years of age (see Tests detailed table). In week 10, the proportion of positive tests for respiratory syncytial virus detections (RSV) decreased slightly to 17.9% 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

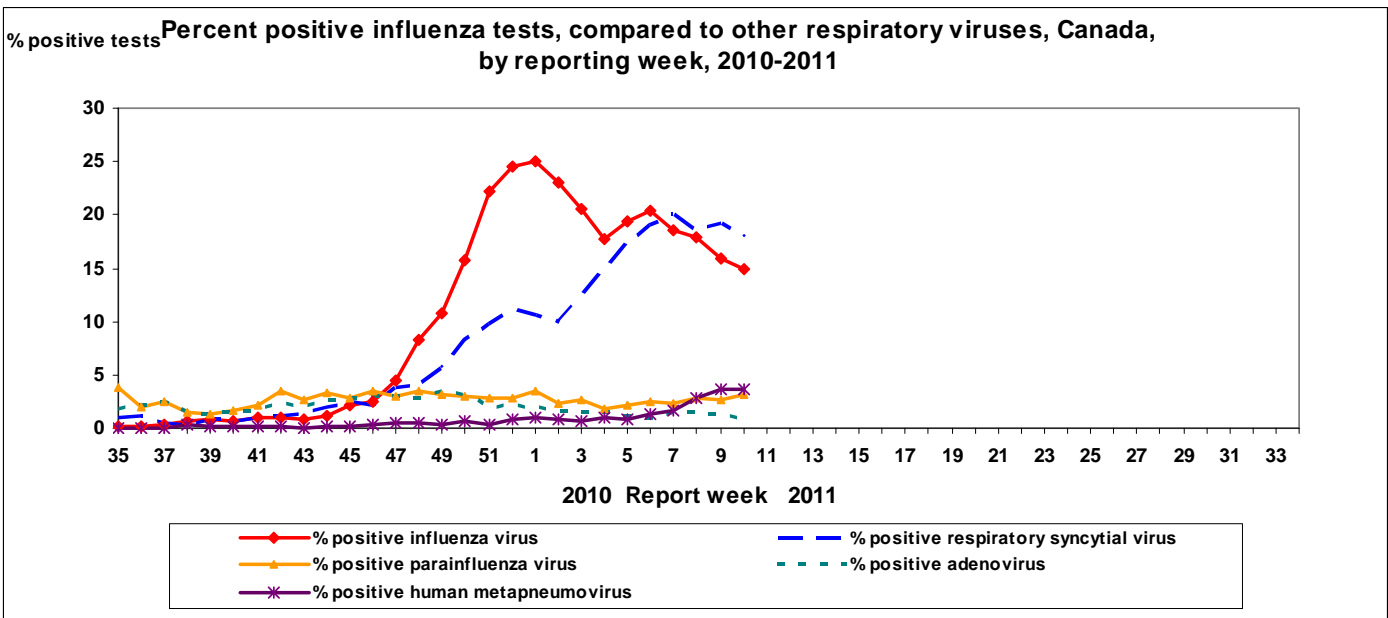
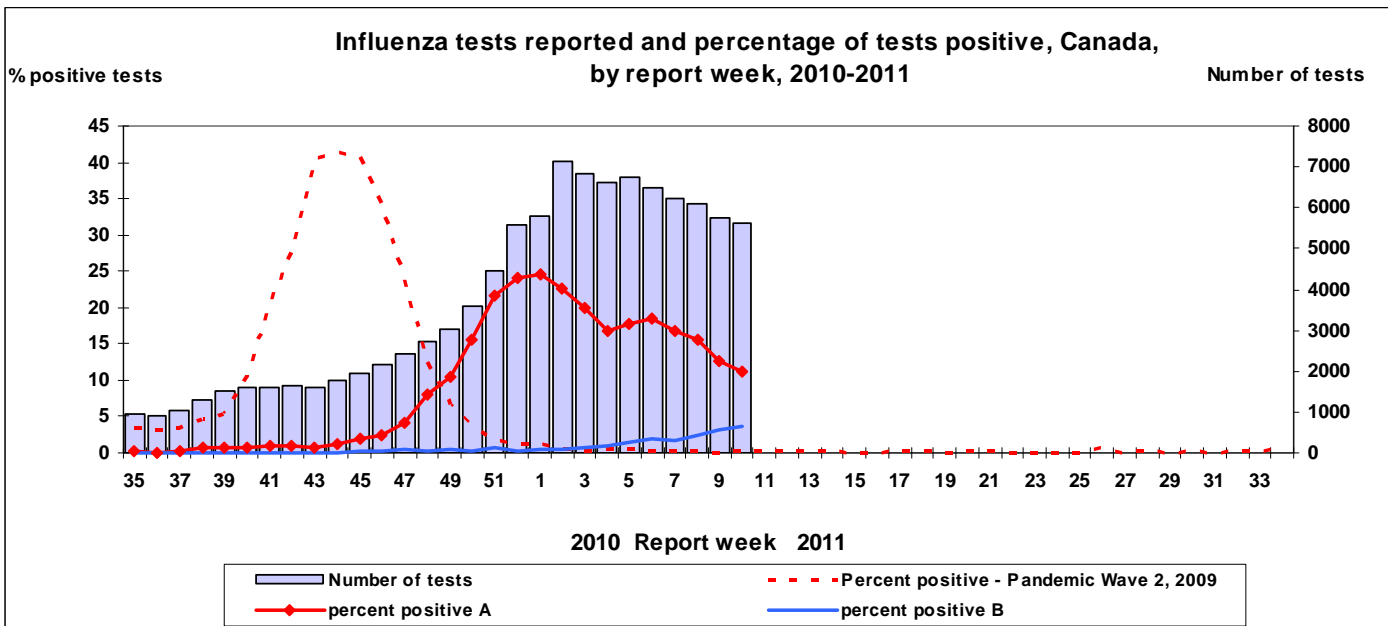
Reporting provinces	Weekly (March 6 to 12, 2011)						Cumulative (August 29, 2010 to March 12, 2011)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	55	0	19	28	8	19	378	0	149	131	98	104
AB	89	0	59	18	12	69	826	0	594	197	35	291
SK	13	0	8	1	4	7	272	0	190	24	58	21
MB	6	0	0	0	6	0	514	0	56	1	457	0
ON	165	0	29	5	131	56	6583	0	2379	262	3942	402
QC	141	0	32	1	108	47	5323	0	846	33	4444	255
NB	122	0	110	9	3	2	768	0	559	156	53	31
NS	24	0	11	1	12	0	166	0	38	9	119	2
PE	4	0	2	2	0	1	57	0	40	15	2	3
NL	13	0	12	1	0	0	83	0	70	4	9	1
Canada	632	0	282	66	284	201	14970	0	4921	832	9217	1110

*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. 6 to Mar. 12, 2011)					Cumulative (Aug. 29, 2010 to Mar. 12, 2011)				
	Influenza A				B	Influenza A				B
	A Total	Pandemic H1N1	A/H3N2	A untyped	Total	A Total	Pandemic H1N1	A/H3N2	A untyped	Total
<5	28	3	20	5	18	897	110	656	131	140
5-19	14	3	8	3	46	450	82	265	103	245
20-44	45	22	11	12	19	918	259	474	185	126
45-64	18	6	8	4	2	677	153	386	138	38
65+	40	0	35	5	7	2166	37	1885	244	57
Unknown	2	0	1	1	0	229	3	223	3	0
Total	147	34	83	30	92	5337	644	3889	804	606

*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.



Canadian situation

Paediatric Influenza Hospitalizations and Deaths

In week 10, 21 new laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network: 7 from BC, 2 from AB, 3 from SK, 2 from ON, 5 from QC, 1 from NS, and 1 from NL. This number has decreased compared to the previous week (week 09) in which 31 paediatric hospitalizations were reported (note that numbers may fluctuate because of the delays in reporting). So far this season, two deaths in children have been reported, both in Ontario. One, aged between 6 months and 23 months, who tested positive for pandemic H1N1 2009 was reported in week 48, and one aged 10-16 years, who tested positive for influenza A (unsubtyped), was reported in week 04.

Since the beginning of the season, 519 hospitalizations with laboratory-confirmed influenza have been reported from all provinces except NB and PE; 82 (15.8%) as influenza A/H3N2, 17 (3.3%) pandemic H1N1 2009, 328 (63.2%) as unsubtyped influenza A, and 92 (17.7%) influenza B. The distribution of cases to date by age group was as follows: 17.7% among 0-5 month olds; 28.5% among 6-23 month olds; 29.7% among the 2-4 year-olds; 14.8% among 5-9 year-olds; and 9.2% among children 10-16 years old.

Adult Influenza Hospitalizations and Deaths

During week 10, 11 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 17 cases reported in week 09 (note that numbers may fluctuate because of the delays in reporting). Of the 11 new cases reported between March 6 and 12, 2011, 5 (45.5%) tested positive for unsubtyped influenza A, 2 (18.2%) as A/H3N2, 1 (9.1%) as pandemic H1N1 2009, and 3 (27.3%) as influenza B. Since the beginning of the season, 849 hospitalized cases

have been reported: 190 (22.4%) A/H3N2, 37 (4.4%) pandemic H1N1 2009, 595 (70.1%) influenza A unsubtype, and 27 (3.2%) influenza B, from all reporting provinces except NL. To date, 583 of the 849 (68.7%) cases were aged 65 years or older and 383 (45.1%) were males.

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 10, one death with influenza was reported in Ontario, in a person 45 to 64 years of age with influenza A (unsubtype). Among the 185 fatal cases reported since the beginning of the influenza season, influenza A/H3N2 was identified in 62.2% (115/185), unsubtype influenza A in 29.2% (54/185), pandemic H1N1 2009 in 5.9% (11/185), and influenza B in 2.7% (5/185). Seventy-eight percent (145/185) of these fatal cases were among persons 65 years of age or older, and another 12% (22/185) 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).

Antigenic Characterization

Between September 1 and March 17, 2011, the National Microbiology Laboratory (NML) has antigenically characterized 396 influenza viruses that were received from provincial laboratories: 189 A/H3N2 from BC, AB, SK, MB, ON, QC & NB, 86 pandemic H1N1 2009 from BC, AB, ON, QC, NB & NS and 121 B viruses from BC, AB, SK, ON, QC & NB. All 189 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 86 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 121 influenza B viruses characterized, 113 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 113 viruses tested showed reduced titer with antisera produced against B/Brisbane/60/08. Eight 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 401 influenza A isolates (318 A/H3N2 and 83 pandemic H1N1 2009) for amantadine resistance and found that 317 influenza A/H3N2 were resistant to amantadine and one was sensitive. All 83 influenza A/H1N1 viruses were resistant to amantadine. Of 358 influenza viruses (167 A/H3N2, 80 pandemic H1N1 2009, and 111 influenza B) tested for resistance to oseltamivir, all A/H3N2 and B virus isolates were found to be sensitive to oseltamivir. Of the 80 pandemic H1N1 2009 isolates tested, 79 were sensitive to oseltamivir and one was resistant to oseltamivir with the H275Y mutation. The resistant case was associated with oseltamivir treatment. Of 354 influenza viruses (165 A/H3N2, 77 pandemic H1N1 2009, and 112 influenza B) tested for resistance to zanamivir, all isolates were found to be sensitive to zanamivir.

International influenza update

Northern hemisphere

United States: During week 09 (February 27 to March 5, 2011), influenza activity decreased. Twenty-five percent (1,869/7,556) of specimens tested were positive for influenza, of which 75.1% were influenza A and 24.9% were influenza B. Among influenza A specimens, the proportion of A/H3 (35.4%) was greater than the proportion of pandemic H1N1 2009 (28.2%). The proportion of deaths attributed to pneumonia and influenza (P&I) was above the epidemic threshold (8.0%), marking the sixth consecutive week that this indicator is at or above threshold. Five influenza-associated paediatric deaths were reported for a total of 60 this season, of which 23 were associated with influenza B, 12 with A/H3, 13 with pandemic H1N1 2009, and 12 with unsubtype influenza A. The proportion of outpatient visits for influenza-like illness (ILI) was 3.1%, which is above the national baseline of 2.5%. The geographic spread of influenza in 39 states was reported as widespread, and 9 states reported regional influenza activity. <http://www.cdc.gov/flu/weekly/index.htm>

United Kingdom

In week 09 (ending March 6, 2011) influenza activity continues to decline in the UK, GP consultation rates are low, and no acute respiratory outbreaks were reported. All influenza types are decreasing, influenza B and pandemic H1N1 2009 continue to be detected at reduced levels, with very few, sporadic influenza A/H3N2 virus detections. Up to 9 March 2011, 546 fatal influenza cases from across the UK have been reported to the HPA. Further epidemiological information on cases is available on 522 of these cases, of which 482 (92%) were associated with pandemic H1N1 2009, six with unsubtype influenza A and 34 (7%) with influenza B infection. Reported deaths have been mainly in middle-aged and younger adults. 70% of the fatal cases with available information were in one of the CMO-defined clinical risk groups for vaccination. Seven cases have been reported to be pregnant to date. Of cases with available information on immunisation history, 128 of 178 (72%) cases had not received the 2010/11 trivalent influenza vaccine this season. Forty-one of 44 (93%) of cases with available information had not received the monovalent pandemic influenza vaccine last season. http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1296682596600

Europe

In week 09 (28 February to 6 March 2011), most European countries are reporting regional or widespread influenza activity, with medium influenza-like illness (ILI)/acute respiratory infection (ARI) consultation rates. Decreasing ILI/ARI trends were reported by the majority of countries. The proportion of influenza virus-positive sentinel specimens has gradually increased slightly over week 08 to 40%, after peaking in week 52/2010 at around 56%. An increasing proportion of B viruses has been reported. In week 09/2011, 55.3% of influenza virus detections were type A, and 44.7% were type B. The latter are reported to be dominant now in a number of countries. Of the 784 subtype influenza A viruses, 97.2% were A(H1N1)2009. Since

week 40/2010, ten countries have reported 4 288 all-cause Severe Acute Respiratory Infection (SARI) and hospitalised confirmed cases of influenza virus infection, including 349 deaths. The epidemic curve peaked in week 52/2010. Overall, ICU admission was reported for 1 765 patients, 941 (53.3%) of whom were known to have required ventilation. In patients for whom information was available, obesity was the most frequent underlying condition, but 1 237 (40.2%) of 3 075 all-cause SARI and hospitalised confirmed influenza cases had no known prior underlying condition.

http://ecdc.europa.eu/en/publications/Publications/110311_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 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.