

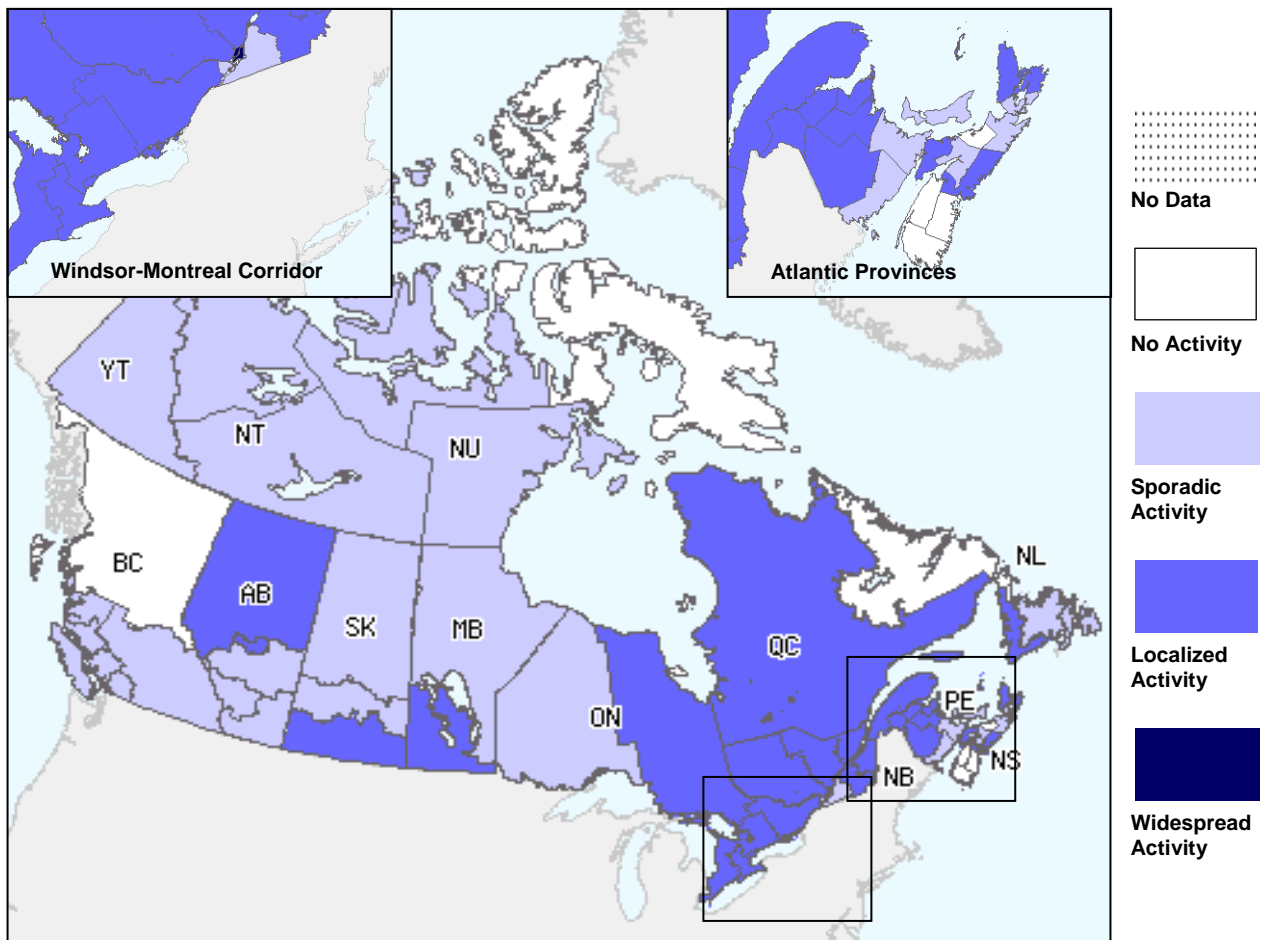
February 6 to 12, 2011 (Week 06)

- Influenza activity continues to increase in Quebec and the Atlantic provinces. Several regions across the country report localized influenza activity. The percentage of positive influenza detections overall increased slightly in week 06 compared to week 05, as did the proportion of tests positive for RSV. Several indicators have increased including the number of regions reporting widespread and localized influenza activity, the number of outbreaks, adult hospitalizations with influenza and the ILI consultation rate.
- Since the beginning of the season, 87.0% of the subtyped positive influenza A specimens were influenza A/H3N2. Influenza B detections continue to increase as a proportion of positive influenza detections.

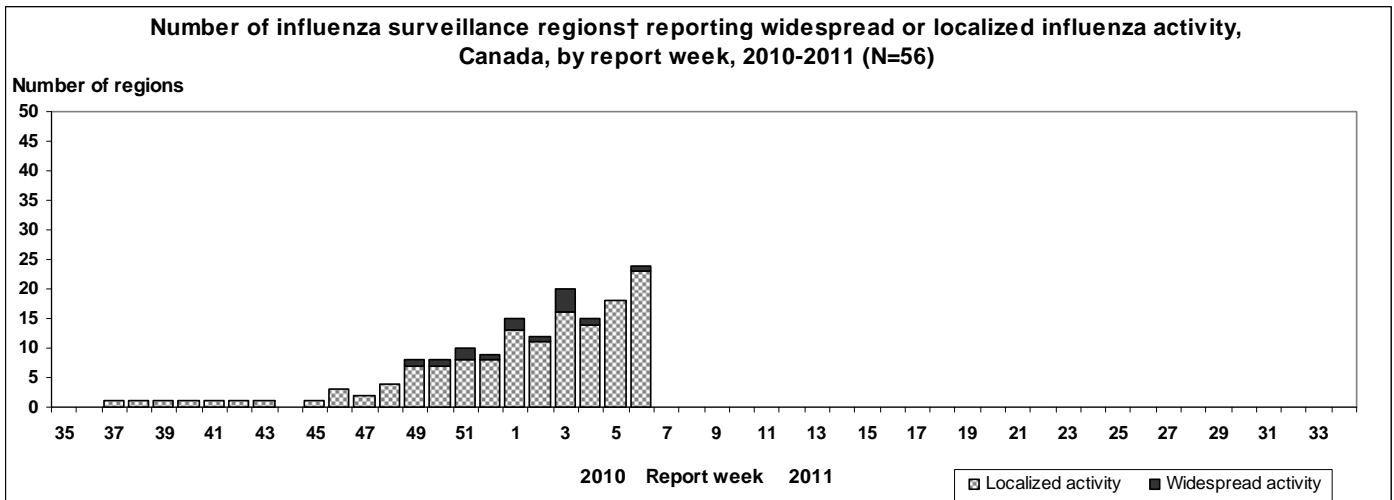
Overall Influenza Summary – Week 06 (February 6 to 12, 2011)

In week 06, one region in Quebec (Montreal/Laval) reported widespread influenza/ILI activity, 23 regions reported localized activity (in AB(2), SK(1), MB(1), ON(6), QC(4), NB(5), NS(3), and NL(1)), 25 regions reported sporadic activity (in all provinces and territories) and 7 regions presented no activity. (See Activity level Map). Compared to the previous week (week 05), 18 regions reported an increased level of influenza activity, 8 regions reported decreased activity, and 26 regions maintained a stable level of influenza activity (sporadic or higher). During week 06, 34 new ILI/influenza outbreaks were reported: 21 in long-term care facilities (LTCF) in MB(1), ON(8), QC(7), NB(1) and NS(4); 9 school outbreaks in AB(2), and NB(7); and 4 outbreaks in other facilities in AB(1) and ON(3).

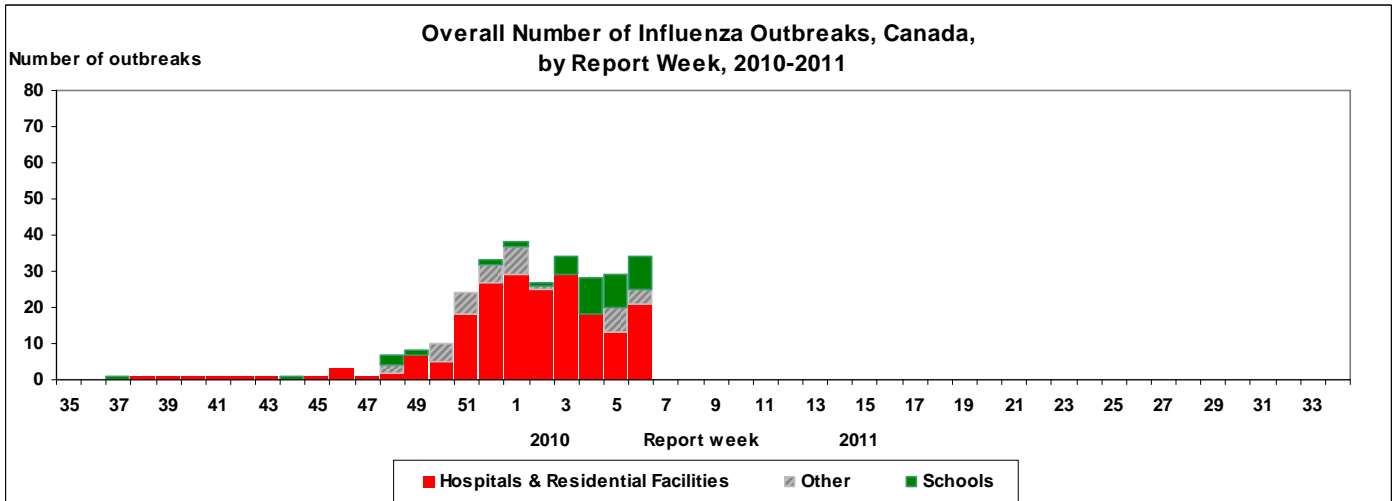
Map of overall Influenza activity level by province and territory, Canada, Week 06



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.



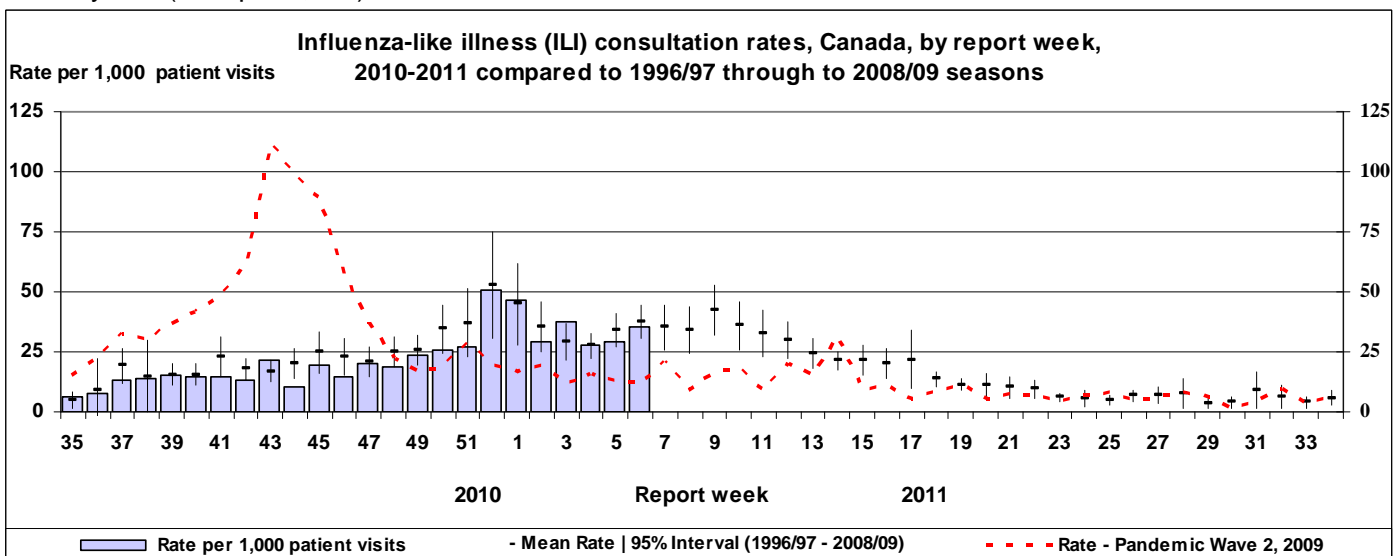
† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.



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 06, the national ILI consultation rate was 35.7 consultations per 1,000 patient visits, an increase from week 05, however still within expected range for this time of year (see ILI graph). Children under 5 years of age had the highest consultation rates (84.2 per 1,000 consultations in week 06) followed by children between 5 and 19 years (65.4 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 06 was 20.2%. The proportion of positive tests has increased slightly in weeks 05 and 06, due to an increase in the proportion of positive tests in BC, QC, and the Atlantic provinces. Of the 1280 positive tests reported during week 06, 420 (33%) specimens were reported as influenza A/H3N2, 88 (7%) as pandemic H1N1 2009, 119 (9%) as influenza B and 653 (51%) as unsubtyped influenza A. The majority of influenza virus detections to date this season were influenza A viruses (96.1% or 11,575/12,044). Since the beginning of the season, 87.0% of the subtyped positive influenza A specimens were influenza A/H3N2. In week 06, detections of pandemic H1N1 2009 represented 17.3% of all subtyped influenza A specimens, which is similar to the proportion observed in week 05. Detections of influenza B increased slightly from 7.4% of all positive influenza specimens in week 05 to 9.3% in week 06. During week 06, 52.8% (57/108) of cases with A/H3N2 reported through the detailed case-based laboratory reporting were aged 65 years or older, while since August 29, 2010, the proportion was 49.4% (1499/3036) (see Tests detailed table). In week 06, the proportion of positive tests for respiratory syncytial virus detections (RSV) increased from 16.9% to 19.0% of specimens tested while low levels of parainfluenza (2.5%) and rhinovirus (5.7%) continue to be reported (see Respiratory viruses graph).

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

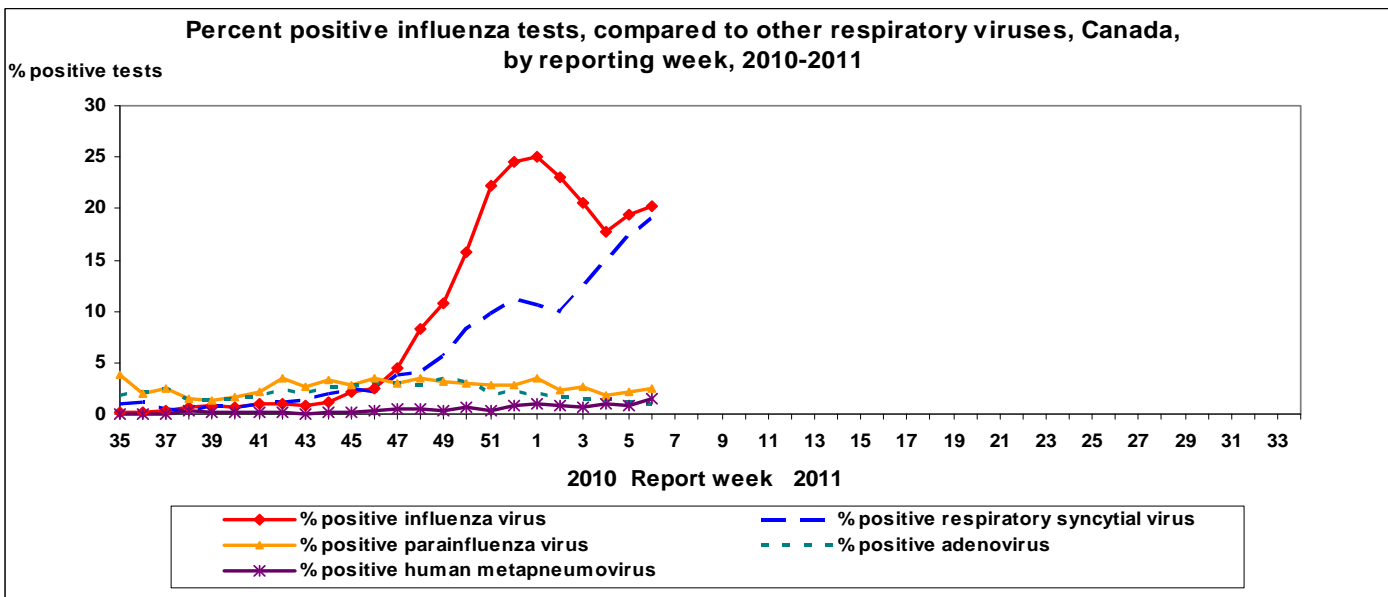
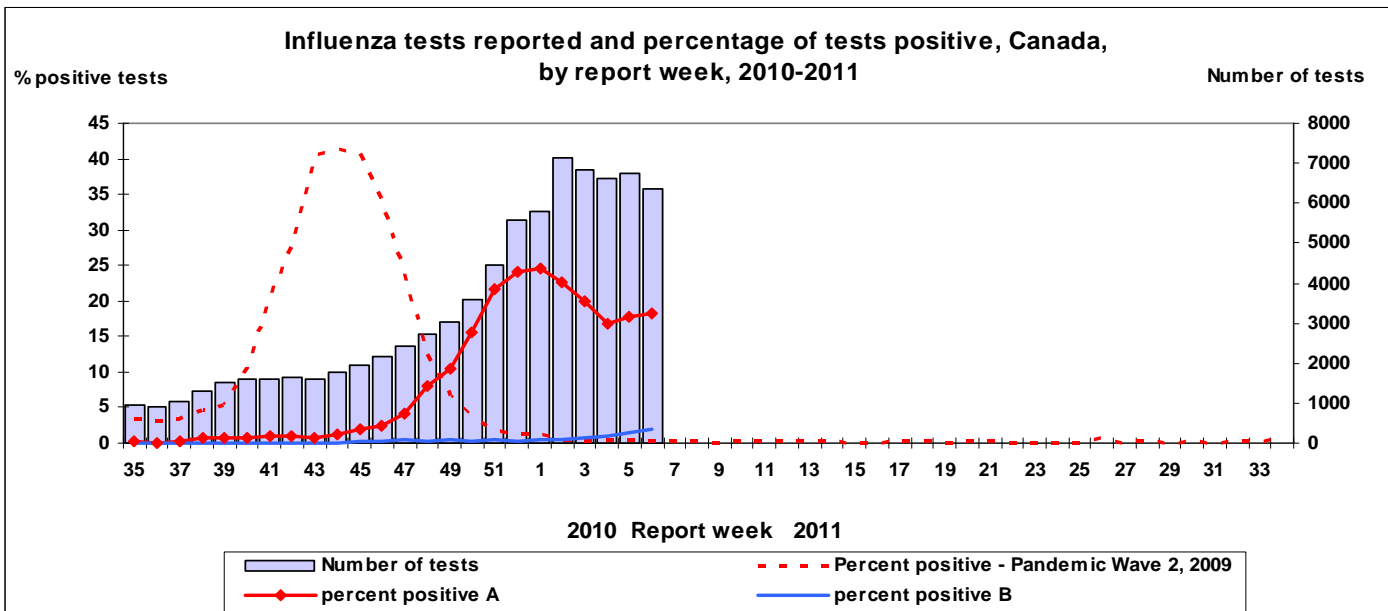
Reporting provinces	Weekly (February 6 to February 12, 2011)						Cumulative (August 29, 2010 to February 12, 2011)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	30	0	9	14	7	11	191	0	63	68	60	40
AB	69	0	38	15	16	35	527	0	397	99	31	86
SK	34	0	24	6	4	2	146	0	100	9	37	9
MB	11	0	0	0	11	0	491	0	56	1	434	0
ON	427	0	126	10	291	39	5507	0	2112	227	3168	222
QC	435	0	129	5	301	25	4333	0	627	27	3679	97
NB	121	0	81	37	3	6	296	0	191	80	25	13
NS	25	0	4	1	20	1	45	0	11	5	29	1
PE	2	0	2	0	0	0	23	0	16	7	0	0
NL	7	0	7	0	0	0	16	0	15	1	0	1
Canada	1161	0	420	88	653	119	11575	0	3588	524	7463	469

*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 (Feb. 6 to Feb. 12, 2011)					Cumulative (Aug. 29, 2010 to Feb. 12, 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	36	5	23	8	10	688	79	480	129	59
5-19	24	3	11	10	23	347	54	190	103	76
20-44	33	9	8	16	6	707	163	365	179	43
45-64	17	3	8	6	1	515	90	302	123	23
65+	81	2	57	22	3	1765	27	1499	239	29
Unknown	1	0	1	0	0	205	3	200	2	0
Total	192	22	108	62	43	4227	416	3036	775	230

*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 06, 33 new laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network: 2 from BC, 2 from AB, 15 from ON, and 14 from QC. This number is decreased compared to the previous week (week 05) in which 36 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, 372 hospitalizations with laboratory-confirmed influenza have been reported from all provinces except NB and PE; 61 (16.4%) as influenza A/H3N2, 11 (3.0%) pandemic H1N1 2009, 265 (71.2%) as unsubtyped influenza A, and 35 (9.4%) influenza B. The distribution of cases to date by age group was as follows: 18.5% among 0-5 month olds; 30.4% among 6-23 month olds; 26.6% among the 2-4 year-olds; 16.1% among 5-9 year-olds; and 8.3% among children 10-16 years old.

Adult Influenza Hospitalizations and Deaths

During week 06, 39 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 is increased compared to the 26 cases reported in week 05 and the same number of cases as were reported in week 04 (note that numbers may fluctuate because of the delays in reporting). Of the 39 new cases reported between February 6 and 12, 2011, 30 (76.9%) tested positive for unsubtyped influenza A, 6 (15.4%) as influenza A/H3N2, 2 (5.1%) as pandemic H1N1 2009, and 1 (2.6%) as influenza B. Since the beginning of the season, 733 hospitalized cases have been reported: 176 (24.0%) A/H3N2, 31

(4.2%) pandemic H1N1 2009, 513 (70.0%) influenza A untyped, and 13 (1.8%) influenza B, from all reporting provinces except NL. To date, 515 of the 733 (70.3%) cases were aged 65 years or older and 328 (44.7%) 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 06, ON reported 5 deaths, all among persons 65 years of age or older: 3 with A/H3N2, 1 with untyped influenza A, and 1 with influenza B (note that numbers may fluctuate because of the delays in reporting). Among the 122 fatal cases currently reported since the beginning of the influenza season, influenza A/H3N2 was identified in 63.9% (78/122), untyped influenza A in 27.9% (34/122), pandemic H1N1 2009 in 5.7% (7/122), and influenza B in 2.5% (3/122). Seventy-six percent (93/122) of these fatal cases were among persons 65 years of age or older, and another 13% (16/122) were between the ages of 45 and 64 years old, in keeping with the age-groups usually affected by A/H3N2.

Antigenic Characterization

Between September 1 and February 18, 2011, the National Microbiology Laboratory (NML) has antigenically characterized 273 influenza viruses that were received from provincial laboratories: 159 A/H3N2 from BC, AB, SK, MB, ON, QC & NB, 52 pandemic H1N1 2009 from BC, AB, ON, QC, NB & NS and 62 B viruses from BC, AB, SK, ON, QC & NB. All 159 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 52 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 62 influenza B viruses characterized, 61 were antigenically related to B/Brisbane/60/08 (Victoria lineage), which is the recommended influenza B component for the 2010-11 influenza vaccine. Four viruses tested showed reduced titer with antisera produced against B/Brisbane/60/08. One influenza B virus was characterized as B/Florida/04/2006-like, which belongs to the Yamagata lineage.

Antiviral Resistance

Since the beginning of the 2010-2011 season, NML has tested 285 influenza A isolates (234 A/H3N2 and 51 pandemic H1N1 2009) for amantadine resistance and found that 233 influenza A/H3N2 were resistant to amantadine and one was sensitive. All 51 influenza A/H1N1 viruses were resistant to amantadine. Of 240 influenza viruses (138 A/H3N2, 50 pandemic H1N1 2009, and 52 influenza B) tested for resistance to oseltamivir, all isolates were found to be sensitive to oseltamivir. Of 237 influenza viruses (137 A/H3N2, 47 pandemic H1N1 2009, and 53 influenza B) tested for resistance to zanamivir, all isolates were found to be sensitive to zanamivir.

International influenza update

WHO recommended composition of influenza vaccines for 2011-2012 (northern hemisphere)

Following consultations of the WHO Global Influenza Surveillance Network (GISN) on 14-17 February 2011, the WHO recommends that influenza virus vaccines for use in the 2011-2012 northern hemisphere influenza season contain the following: an A/California/7/2009 (H1N1)-like virus; an A/Perth/16/2009 (H3N2)-like virus; a B/Brisbane/60/2008-like virus. These are the same virus strains currently included in the 2010-11 influenza vaccines for the northern hemisphere, as well as recommended for vaccines in the 2011 southern hemisphere influenza season.

http://www.who.int/csr/disease/influenza/recommendations_2011_12north/en/index.html

Geographic update

Northern hemisphere

United States: During week 05 (January 30 to February 5, 2011), influenza activity increased. Thirty two percent (2377/7511) of specimens tested were positive for influenza, of which 77.6% were influenza A and 22.4% were influenza B. The proportion of deaths attributed to pneumonia and influenza (P&I) was at the epidemic threshold. Eleven influenza-associated paediatric deaths were reported for a total of 30 this season, of which 12 were associated with influenza B, 9 with A/H3, 3 with pandemic H1N1 2009, and 6 with untyped influenza A. The proportion of outpatient visits for influenza-like illness (ILI) was 4.6%, which is above the national baseline of 2.5%. Nine of the 10 national regions reported ILI at or above region-specific baseline levels. Nineteen states across the South and East of the country, from New Mexico to New York, experienced high ILI activity, and 9 states experienced moderate ILI activity. The geographic spread of influenza in 37 states was reported as widespread, and 9 states reported regional influenza activity. <http://www.cdc.gov/flu/weekly/index.htm>

United Kingdom

Influenza activity continues to decline in the UK. GP consultation rates are below baseline levels in England, Wales, Scotland and Northern Ireland. All influenza types are reducing, with influenza B now the predominant virus; influenza A H1N1 (2009) continues to circulate, with very few, sporadic influenza A (H3N2) virus detections. The virus strains circulating are overall well matched to the current influenza vaccine. Twenty percent of specimens from patients with ILI presenting to sentinel GPs in England in week 5 (ending 6 Feb 2011), were reported as positive for influenza. The proportion of samples positive for RSV remained stable, and the proportion positive for rhinovirus increased. Since week 36, 439 UK deaths associated with influenza infection have been reported, with 93% of the 391 cases with available information associated with pandemic H1N1 2009 infection, 5 with untyped influenza A and 24 (6%) with influenza B infection. Reported deaths have been mainly in middle-aged and younger adults. By week 5, the proportion of people in England aged over 65 years who had received the 2010/11 influenza vaccine was 72.2%. For those in a risk group aged under 65 years it was 50.0%. http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1296680872991

Europe

Most European countries continue to report medium to high influenza-like illness/acute respiratory infection consultation rates and widespread activity. Increasing trends are mainly observed in central, eastern and southern Europe whereas countries in western and northern Europe are reporting unchanging or declining trends. The proportion of influenza-positive sentinel specimens has decreased for the fourth consecutive week, dropping from 54% in peak week 52/2010 to 46% in week 5/2011. 67% of influenza virus detections in week 5/2011 were type A, 33% were type B. In nine countries, type B detections exceeded those of type A. More than 98% of subtyped influenza A viruses were A(H1N1)2009. Since week 40/2010, ten countries have reported 3053 all-cause severe acute respiratory infections and hospitalised confirmed influenza-infected cases, including 224 fatalities. Overall, ICU admission was reported for 1300 patients, and 665 (51.2%) were known to have required ventilation. Numbers of influenza infections with severe outcome have declined in western European countries (Denmark, France, the Netherlands, Ireland and the UK). However, there is now considerable uncertainty on information concerning severe cases in central and eastern European countries.

http://ecdc.europa.eu/en/publications/Publications/110211_SUR_Weekly_Influenza_Surveillance_Overview.pdf

Other regions of the northern hemisphere

Influenza transmission in North Africa and the Middle East appears to have peaked overall, though Algeria is showing an increase. In Pakistan, Iran and Oman the percentage of samples tested positive for influenza was still high. Pandemic H1N1 2009 and type B viruses are co-circulating in nearly equal distribution. The influenza-like illness activity has been variable in the different countries in northern Asia. A number of countries already went through a peak of influenza activity, and most of these were predominated by A/H3N2, notably northern China and Mongolia, while the Republic of Korea has had a pandemic H1N1 2009 season which peaked around week 52 of 2010. In recent weeks, however, Mongolia and northern China are reporting an increase in pandemic H1N1 2009 detections, although without a significant increase in ILI. Japan is reporting a sharp increase of ILI activity, but does not report as many positive detections of influenza viruses as in previous weeks.

http://www.who.int/csr/disease/influenza/2011_02_11_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.