

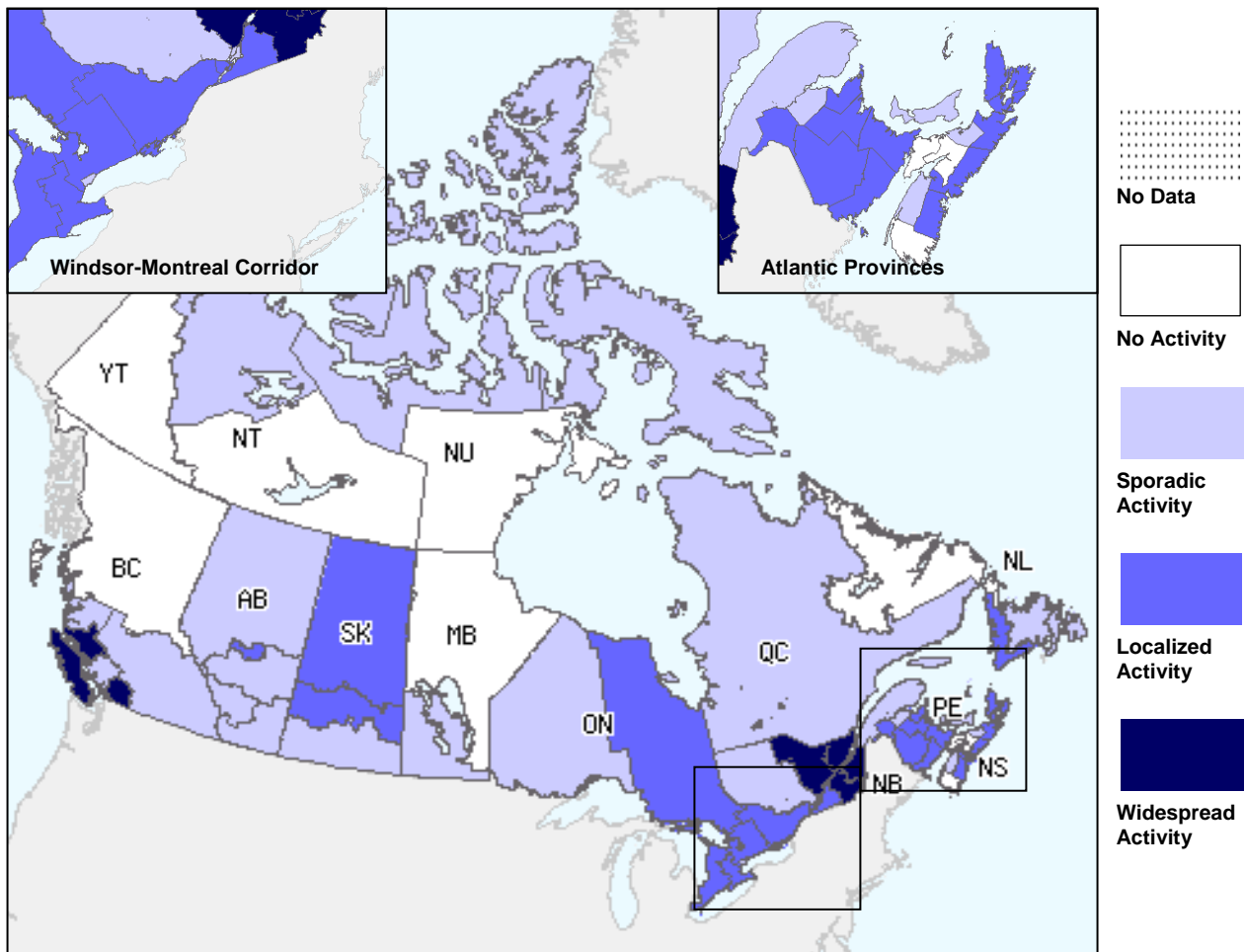
February 20 to 26, 2011 (Week 08)

- In week 08, regions in Quebec and BC reported increases in influenza activity, while other regions across the country reported decreased activity. Many school outbreaks of ILI continue to be reported in New Brunswick. The proportion of positive influenza detections overall continued to decline in week 08, although the ILI consultation rate increased slightly compared to the previous week.
- Since the beginning of the season, 86.1% of the subtyped positive influenza A specimens have been influenza A/H3N2. In week 08, pandemic H1N1 2009 detections decreased to 7% of positive influenza detections while the proportion of influenza B detections increased to 12%.

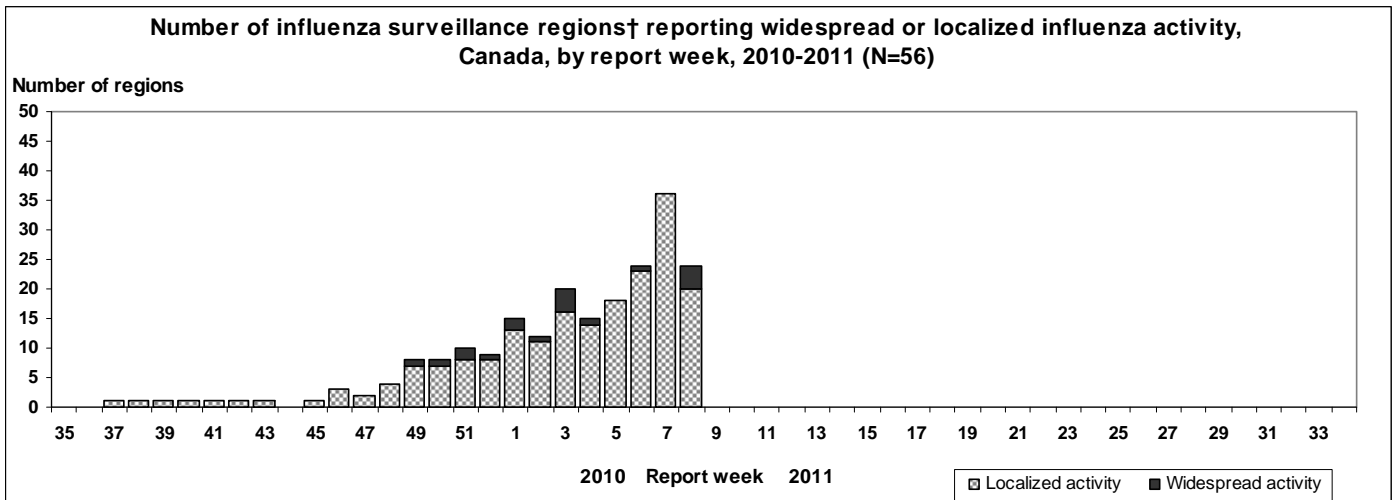
Overall Influenza Summary – Week 08 (February 20 to 26, 2011)

In week 08, 4 regions (in BC(2) and QC(2)) reported widespread activity, 20 regions reported localized activity (in AB(1), SK(2), ON(5), QC(1), NB(6), NS(4), and NL(1)), 23 regions reported sporadic activity (in all provinces and territories except YK) and 9 regions presented no activity (see Activity level Map). Compared to the previous week (week 07), 7 regions reported an increased level of influenza activity, 18 regions reported decreased activity, and 28 regions maintained a stable level of influenza activity (sporadic or higher). Forty-four new outbreaks were reported: 23 outbreaks of influenza in long-term care facilities (LTCF) in BC(5), SK (2), ON(2), QC(6), NB (6) and NS(2); 1 influenza B school outbreak in AB, 19 ILI outbreaks in schools in NB; and one ILI outbreak in a facility in AB.

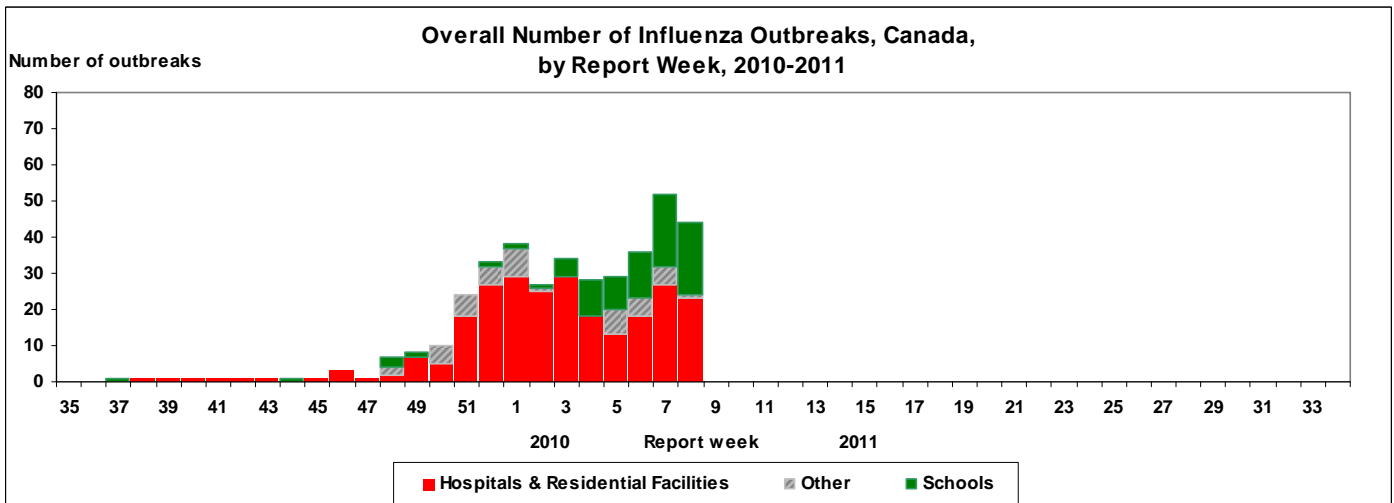
Map of overall Influenza activity level by province and territory, Canada, Week 08



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.

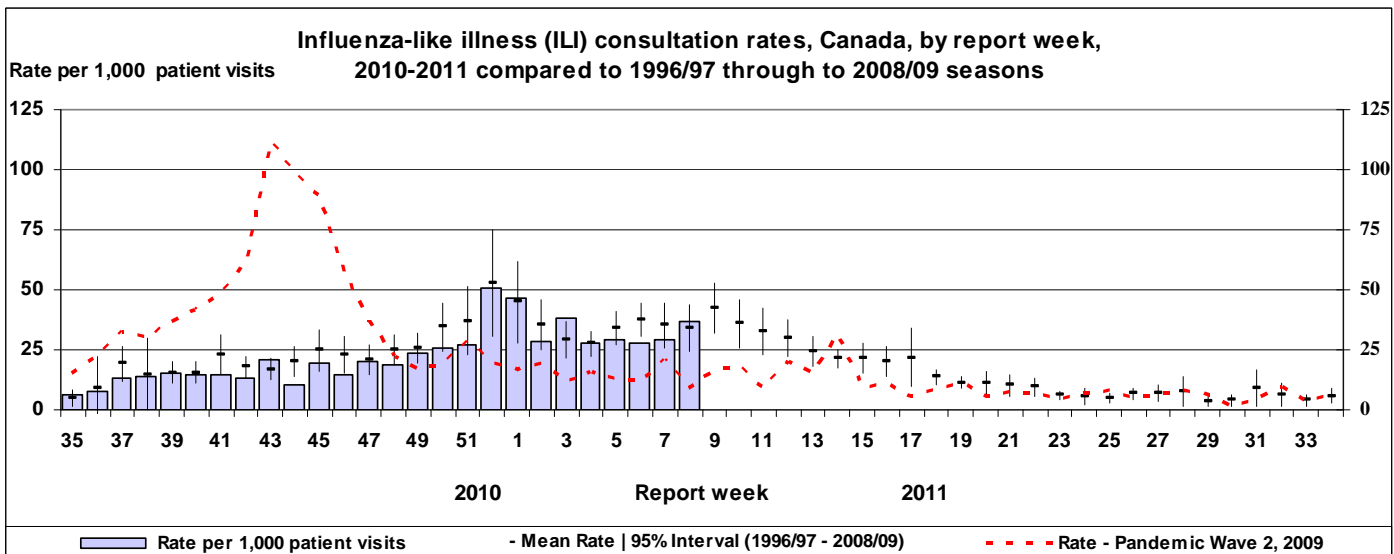


Note that this was the first year that all the provinces and territories were reporting on influenza outbreaks in schools (greater than 10% absenteeism on any day most likely due to ILI) which has increased considerably the total number of outbreaks reported compared to previous years.



ILI consultation rate

During week 08, the national ILI consultation rate was 36.5 consultations per 1,000 patient visits, an increase from 29.3 in week 07 but still within expected range for this time of year (see ILI graph). Children under 5 years of age had the highest consultation rates (87.1 per 1,000 consultations in week 08) followed by children between 5 and 19 years old (68.2 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 08 was 17.8%, which decreased slightly from 18.7% in week 07. The proportion of positive tests peaked in week 52. Of the 1055 positive tests reported during week 08, 363 (34.4%) specimens were reported as influenza A/H3N2, 73 (6.9%) as pandemic H1N1 2009, 130 (12.3%) as influenza B and 489 (46.4%) as untyped influenza A. Since the beginning of the season, the majority of influenza virus detections have been influenza A viruses (95.0% or 13,610/14,332), and among subtyped influenza A specimens 86.1% have been A/H3N2. In week 08, detections of pandemic H1N1 2009 represented 16.7% of all subtyped influenza A specimens, which is decreased from the proportion of 21.4% observed in week 07. Detections of influenza B increased to 12.3% of all positive influenza specimens in week 08 compared to 9.8% in week 07. Through detailed case-based laboratory reporting where age data is provided, since August 29, 2010, 52.0% (1723/3315) of cases with A/H3N2 were aged 65 years or older. In contrast, the majority (93.5%, 491/525) of cases with pandemic H1N1 2009 were under 65 years of age (see Tests detailed table). In week 08, the proportion of positive tests for respiratory syncytial virus detections (RSV) was stable at 18.3% of specimens tested (See Respiratory viruses graph).

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

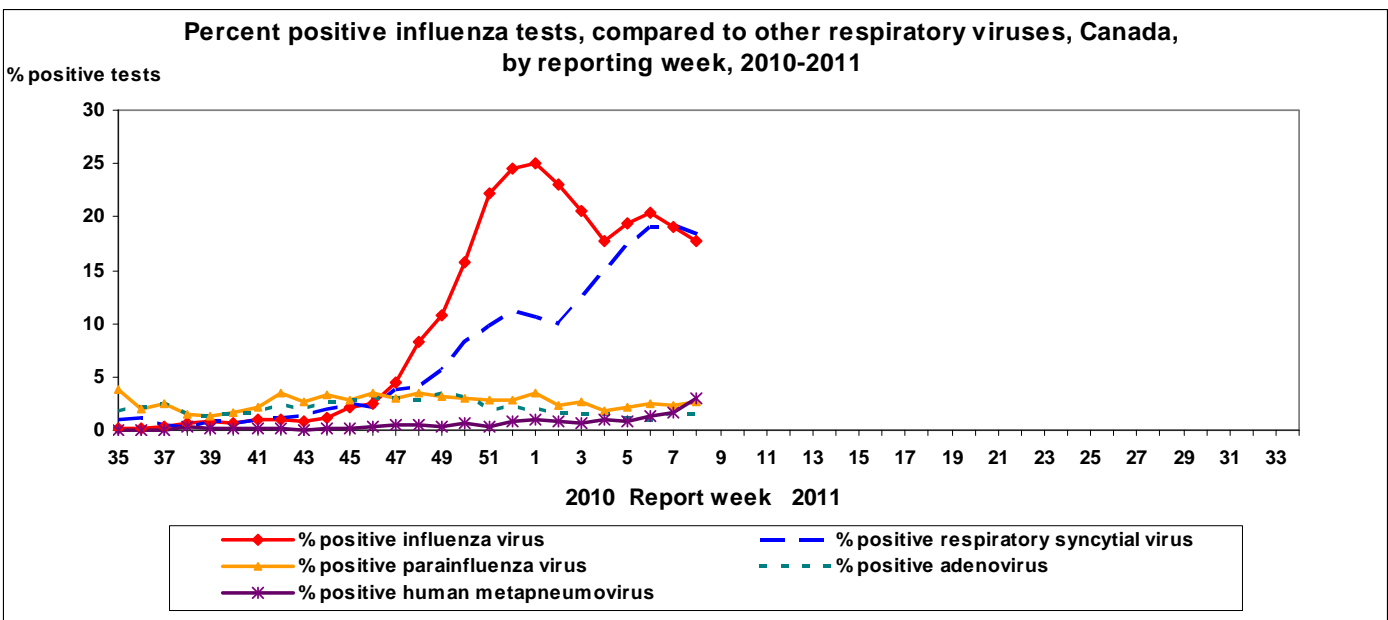
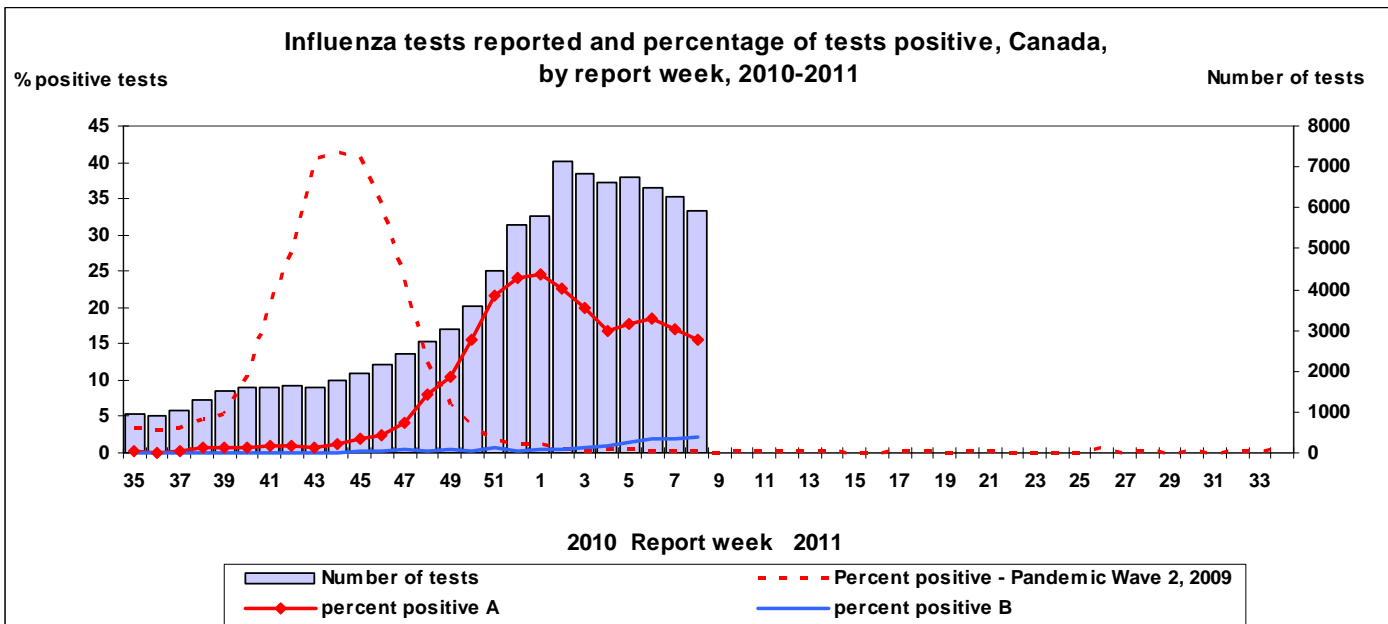
Reporting provinces	Weekly (February 20 to February 26, 2011)						Cumulative (August 29, 2010 to February 26, 2011)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	46	0	23	8	15	13	270	0	98	95	77	65
AB	51	0	28	19	4	27	672	0	499	150	23	164
SK	32	0	20	2	10	3	221	0	148	23	50	12
MB	3	0	0	0	3	0	505	0	56	1	448	0
ON	295	0	92	6	197	39	6207	0	2277	240	3690	297
QC	292	0	72	2	218	38	4985	0	774	31	4180	156
NB	138	0	99	31	8	9	554	0	368	138	48	24
NS	41	0	6	1	34	0	115	0	27	7	81	1
PE	7	0	5	2	0	1	36	0	25	9	2	2
NL	20	0	18	2	0	0	45	0	42	3	0	1
Canada	925	0	363	73	489	130	13610	0	4314	697	8599	722

*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. 20 to Feb. 26, 2011)					Cumulative (Aug. 29, 2010 to Feb. 26, 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	25	3	15	7	11	791	91	565	135	98
5-19	18	5	9	4	21	422	70	245	107	150
20-44	30	5	13	12	8	825	208	428	189	72
45-64	26	6	8	12	1	625	122	354	149	30
65+	63	1	32	30	3	2058	34	1723	301	38
Unknown	3	0	3	0	0	224	3	219	2	0
Total	165	20	80	65	44	4945	528	3534	883	388

*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 08, 39 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, 11 from AB, 2 from SK, 5 from ON, 16 from QC, 1 from NS, and 2 from NL. This number is increased compared to the previous week (week 07) in which 25 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, 458 hospitalizations with laboratory-confirmed influenza have been reported from all provinces except NB and PE; 74 (16.2%) as influenza A/H3N2, 15 (3.3%) pandemic H1N1 2009, 306 (66.8%) as unsubtyped influenza A, and 63 (13.8%) influenza B. The distribution of cases to date by age group was as follows: 18.1% among 0-5 month olds; 28.4% among 6-23 month olds; 29.3% among the 2-4 year-olds; 15.3% among 5-9 year-olds; and 9.0% among children 10-16 years old.

Adult Influenza Hospitalizations and Deaths

During week 08, 21 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 decreased compared to the 27 cases reported in week 07 (note that numbers may fluctuate because of the delays in reporting). Of the 21 new cases reported between February 20 and 26, 2011, 17 (81.0%) tested positive for unsubtyped influenza A, 1 (4.8%) as pandemic

H1N1 2009, and 3 (14.3%) as influenza B. Since the beginning of the season, 821 hospitalized cases have been reported: 185 (22.5%) A/H3N2, 34 (4.1%) pandemic H1N1 2009, 581 (70.8%) influenza A unsubtype, and 21 (2.6%) influenza B, from all reporting provinces except NL. To date, 570 of the 821 (69.4%) cases were aged 65 years or older and 370 (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 08, 1 death was reported in ON of a person >65 years old with A/H3N2. Among the 150 fatal cases reported since the beginning of the influenza season, influenza A/H3N2 was identified in 64.0% (96/150), unsubtype influenza A in 28.7% (43/150), pandemic H1N1 2009 in 5.3% (8/150), and influenza B in 2.0% (3/150). Seventy-seven percent (115/150) of these fatal cases were among persons 65 years of age or older, and another 12% (18/150) 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 3, 2011, the National Microbiology Laboratory (NML) has antigenically characterized 352 influenza viruses that were received from provincial laboratories: 180 A/H3N2 from BC, AB, SK, MB, ON, QC & NB, 74 pandemic H1N1 2009 from BC, AB, ON, QC, NB & NS and 98 B viruses from BC, AB, SK, ON, QC & NB. All 180 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 74 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 98 influenza B viruses characterized, 91 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. Seven 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 329 influenza A isolates (265 A/H3N2 and 64 pandemic H1N1 2009) for amantadine resistance and found that 264 influenza A/H3N2 were resistant to amantadine and one was sensitive. All 64 influenza A/H1N1 viruses were resistant to amantadine. Of 300 influenza viruses (153 A/H3N2, 63 pandemic H1N1 2009, and 84 influenza B) tested for resistance to oseltamivir, all isolates were found to be sensitive to oseltamivir. Of 298 influenza viruses (152 A/H3N2, 61 pandemic H1N1 2009, and 85 influenza B) tested for resistance to zanamivir, all isolates were found to be sensitive to zanamivir.

International influenza update

Geographic update

Northern hemisphere

United States: During week 07 (February 13-19, 2011), influenza activity remained elevated. Thirty one percent (2,866/9,154) of specimens tested were positive for influenza, of which 77.6% were influenza A and 22.4% were influenza B. Among influenza A specimens, the proportion of A/H3 (33.3%) was greater than the proportion of pandemic H1N1 2009 (26.3%) in week 07. The proportion of deaths attributed to pneumonia and influenza (P&I) was above the epidemic threshold for the fourth consecutive week. Six influenza-associated paediatric deaths were reported for a total of 41 this season, of which 16 were associated with influenza B, 10 with A/H3, 8 with pandemic H1N1 2009, and 7 with unsubtype influenza A. The proportion of outpatient visits for influenza-like illness (ILI) was 4.9%, which is above the national baseline of 2.5%. All 10 national regions reported ILI at or above region-specific baseline levels. Twenty-one states experienced high ILI activity, and 6 states experienced moderate ILI activity. The geographic spread of influenza in 44 states was reported as widespread, and 4 states reported regional influenza activity. <http://www.cdc.gov/flu/weekly/index.htm>

United Kingdom

Influenza activity continues to decline in the UK and GP consultation rates are below baseline levels. All influenza types are reducing, with influenza B remaining the predominant virus; influenza A H1N1 (2009) continues to circulate, with very few, sporadic influenza A (H3N2) virus detections. Eighteen percent (10/55) of specimens from patients with ILI presenting to sentinel GPs in England in week 7 (ending 20 Feb 2011), were reported as positive for influenza. The proportion of samples positive decreased for rhinovirus (15.2%) and remained stable for parainfluenza (1.5%). Slight increases in positivity were seen for RSV (10.6%), HMPV (5.3%) and adenovirus (9.8%). Since week 36, 523 UK deaths associated with influenza infection have been reported, with 92% of the 499 cases with available information associated with pandemic H1N1 2009 infection, 6 with unsubtype influenza A and 32 (6%) with influenza B infection. Reported deaths have been mainly in middle-aged and younger adults, with 72% of cases between 15 and 64 years. By week 7, the proportion of people in England aged over 65 years who had received the 2010/11 influenza vaccine was 72.9%. For those in a risk group aged under 65 years it was 50.3%. http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1296681716703

Europe

Most European countries reported medium influenza-like illness /acute respiratory infection consultation rates and widespread activity. During week 07/2011, five countries (Greece, Italy, Lithuania, Romania and Sweden) observed high intensity levels of ILI/ARI and 17 countries reported medium intensity. Increasing trends were reported by only 3 countries (Austria, Iceland and Romania), and 17 countries reported decreasing trends. Numbers of influenza infections with severe outcome have decreased in western European Union countries (Denmark, France, the Netherlands, Ireland, Spain and the UK). However, numbers have risen considerably in Greece in recent weeks and there is considerable uncertainty about severe cases in a number of other countries in central and eastern European countries because of limited hospital surveillance for influenza-associated cases. The proportion of influenza virus-positive sentinel specimens has gradually decreased to 40% after peaking in week 52/2010 at 57%. Sixty-seven percent of influenza virus detections in week 7/2011 were type A, 33% were type B. Six countries reported B virus as dominant and seven countries as co-dominant. Of the 2 039 influenza A viruses that were subtyped in week 07/2011, 99% were pandemic H1N1 and 1% were A/H3. Among specimens from Ireland, Italy, Norway, Spain and the UK tested for susceptibility to neuraminidase inhibitors, 4.0% (30/743) of pandemic H1N1 2009 viruses tested were resistant to oseltamivir, but remained sensitive to zanamivir. All the resistant viruses carried the neuraminidase H275Y substitution. Eight of 24 resistant viruses, from patients for which exposure to antivirals was known, were from patients that had not been treated with oseltamivir.

http://ecdc.europa.eu/en/publications/Publications/110225_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.