

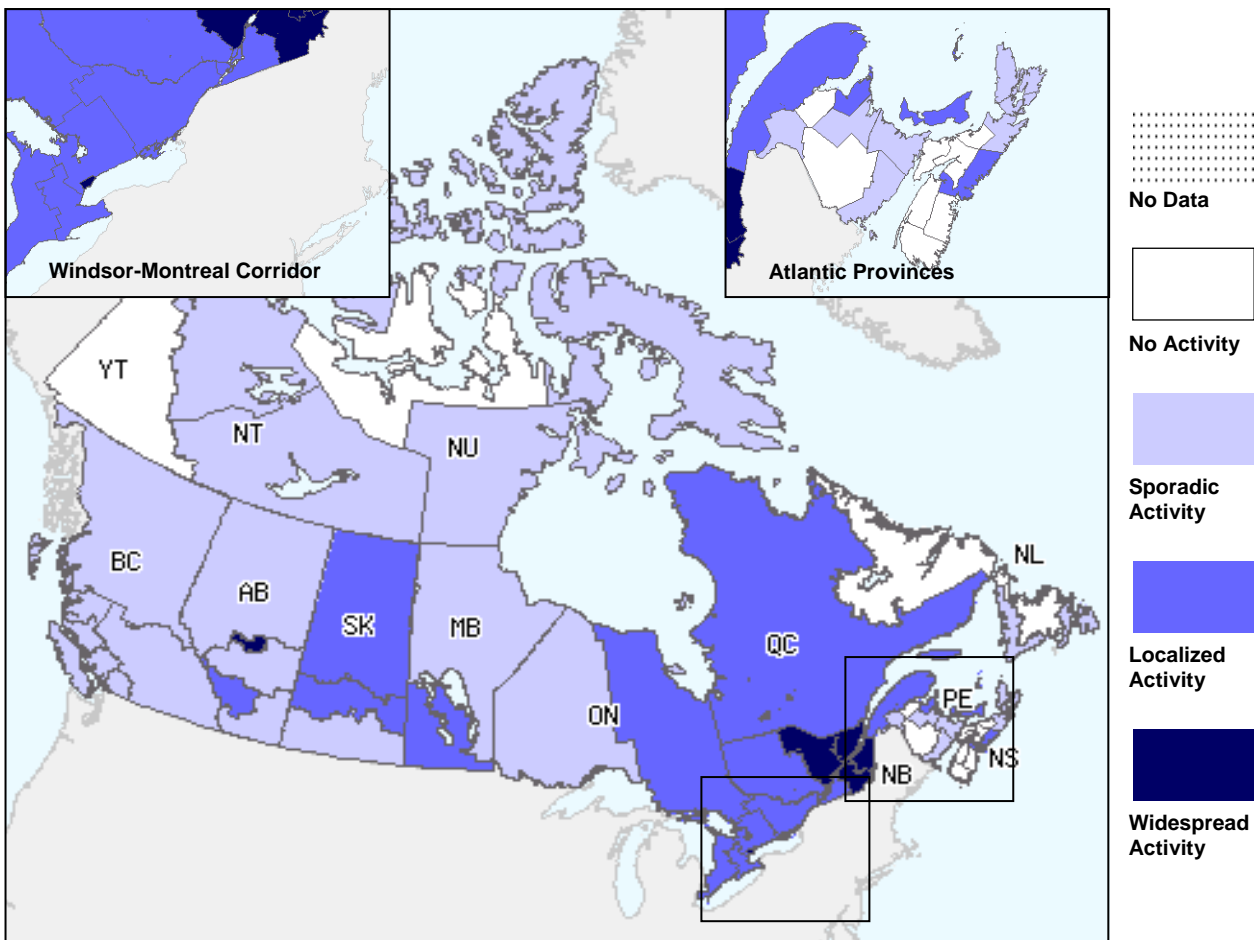
January 16 to January 22, 2011 (Week 03)

- Overall influenza detections appear to have peaked, with most regions across the country now showing a decline in the percentage of positive influenza detections, except BC and the Atlantic provinces. Paediatric and adult hospitalizations have decreased this week, however, some indicators have increased including the number of regions reporting widespread and localized influenza/ILI activity, the number of outbreaks, and the ILI consultation rate.
- Since the beginning of the season, 89.5% of the subtyped positive influenza A specimens were influenza A/H3N2. In week 03, detections of pandemic H1N1 2009 increased slightly to 16.9% of all subtyped influenza A specimens, compared to 15.5% in week 02. The overall proportion of positive tests for RSV has increased from 9.6% to 12.5% in week 03.

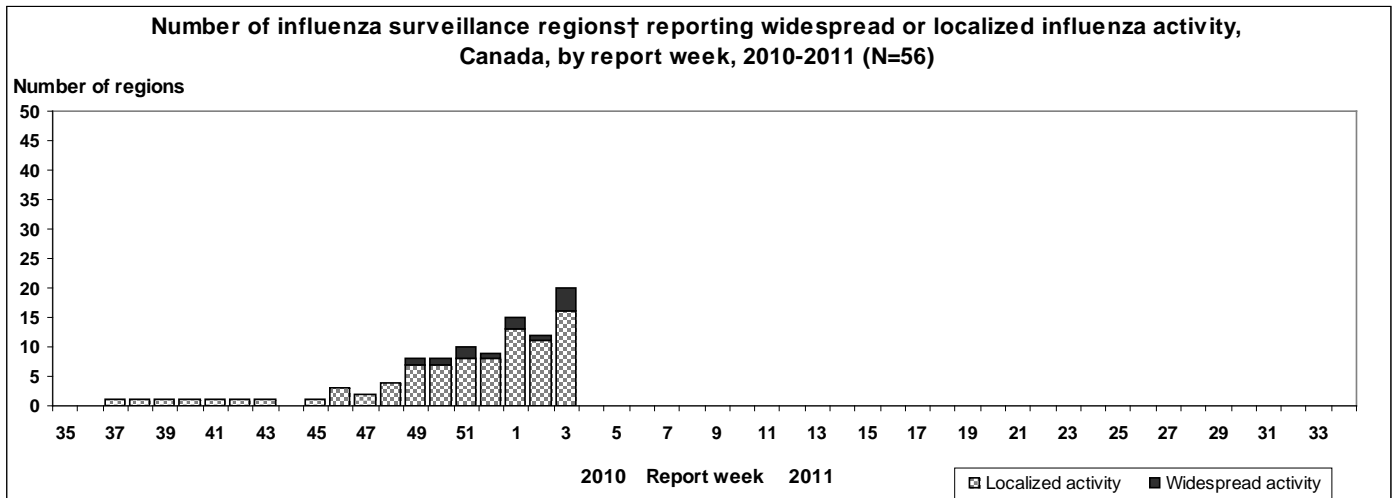
Overall Influenza Summary – Week 03 (January 16 to 22, 2011)

In week 03, 4 regions (in AB(1), ON(1) and QC(2)) reported widespread influenza activity, 16 regions reported localized activity (in AB(1), SK(2), MB(1), ON(5), QC(4), NS(1), NB(1) & PE(1)), 24 regions reported sporadic activity (in all provinces and territories except QC, YK and PE) and 12 regions presented no activity. (See Activity level Map). Compared to the previous 2 weeks (weeks 01 & 02), 14 regions reported increased influenza activity, two regions reported decreased activity, and 20 regions maintained a stable level of influenza activity (sporadic or higher). During week 03, 36 new ILI/influenza outbreaks were reported: 24 in long-term care facilities (LTCF) in AB(3), MB(1), ON(5), QC(15) and PE(1); 5 outbreaks in hospitals in AB(2) and ON(3); and 7 school outbreaks in AB(1), SK(3), NB(2) and NS(1).

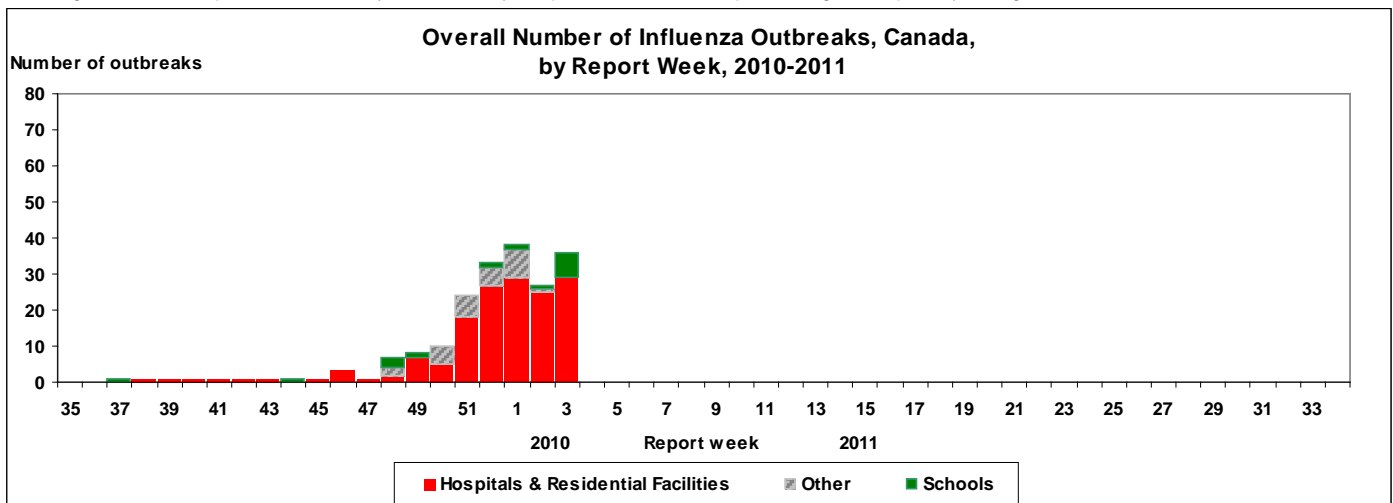
Map of overall Influenza activity level by province and territory, Canada, Week 03



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.



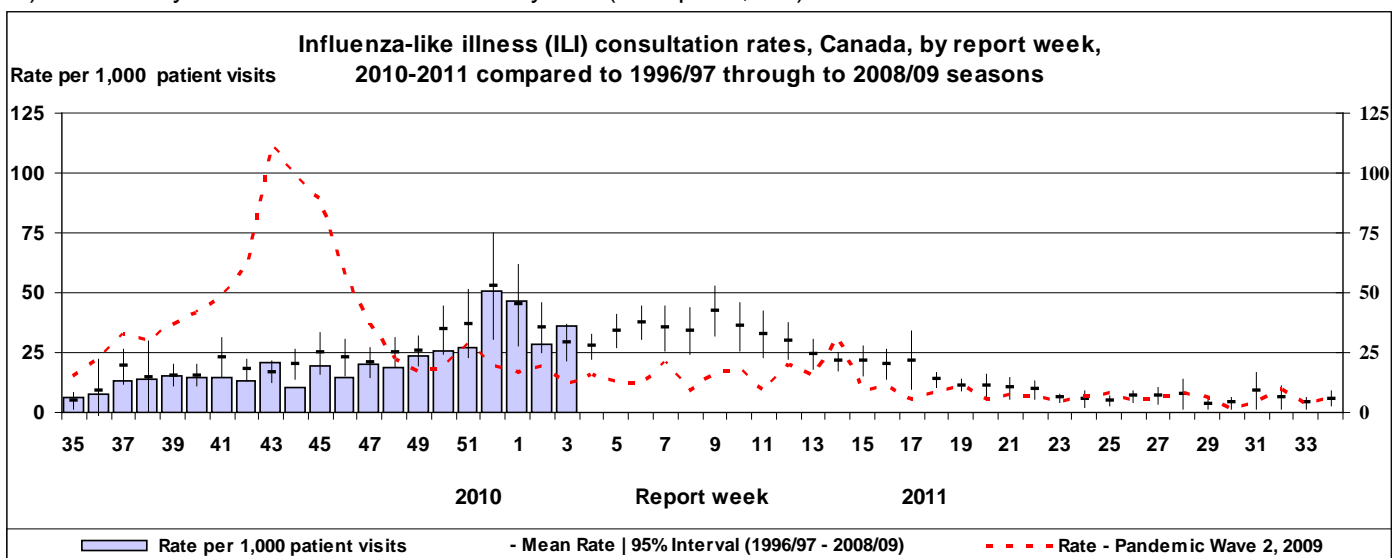
† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.



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 03, the national ILI consultation rate was 36.1 consultations per 1,000 patient visits, which is up compared to 28.6 per 1,000 in week 02. This rate is still within the expected levels for this time of year (see ILI graph). Children under 5 years of age had the highest consultation rates (100.5 per 1,000 consultations in week 03) followed by children between 5 and 19 years (52.3 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 03 was 20.8%. The proportion of positive tests increased from week 45 to 52, and now appears to have peaked. Of the 1370 positive tests reported during week 03, 423 specimens were reported as influenza A/H3N2, 86 as pandemic H1N1 2009 (BC, AB, ON, QC, NS, PE), 46 as influenza B (BC, AB, SK, ON & QC) and 815 as untyped influenza A. The majority of influenza virus detections to date this season were influenza A viruses (97.7% or 8123/8314). Since the beginning of the season, 89.5% of the subtyped positive influenza A specimens were influenza A/H3N2. In week 03, detections of pandemic H1N1 2009 represented 16.9% of all subtyped influenza A specimens, a slight increase from 15.5% in week 02. During week 03, 34.8% (23/66) 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 50.7% (960/1895) (see Tests detailed table). In week 03, the proportion of positive tests for respiratory syncytial virus detections (RSV) increased slightly from at 9.6% to 12.5% of specimens tested while low levels of parainfluenza (2.6%) and adenovirus (1.4%) continue to be reported (see Respiratory viruses graph).

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

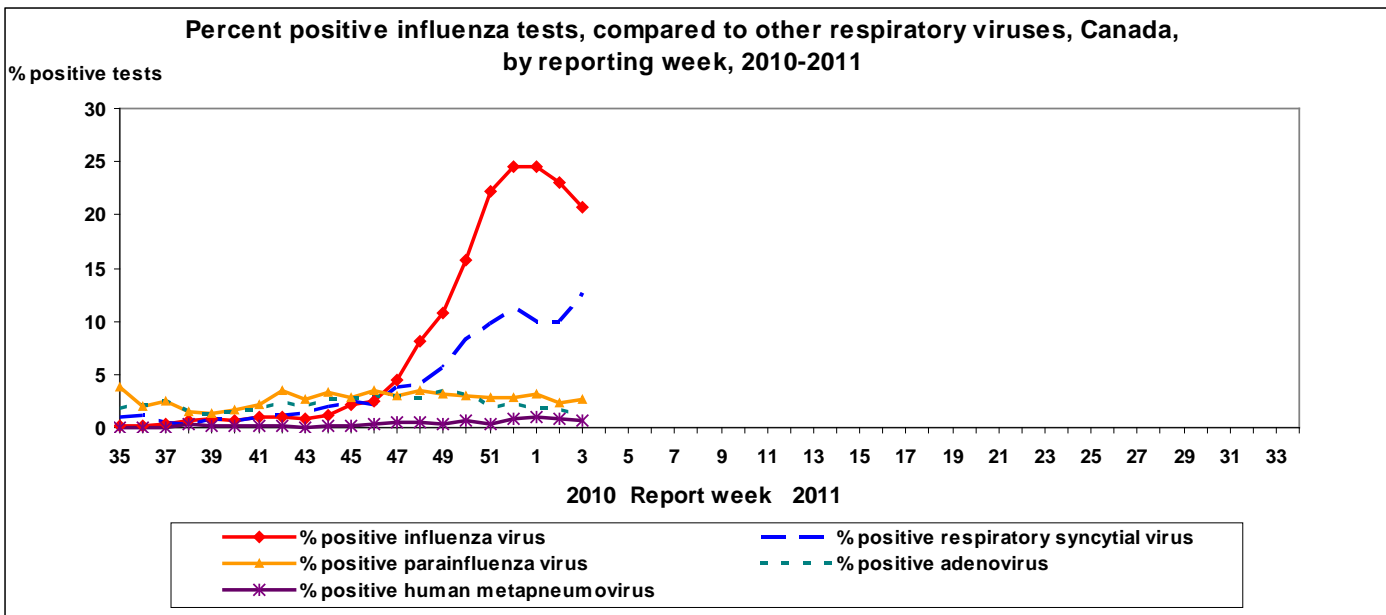
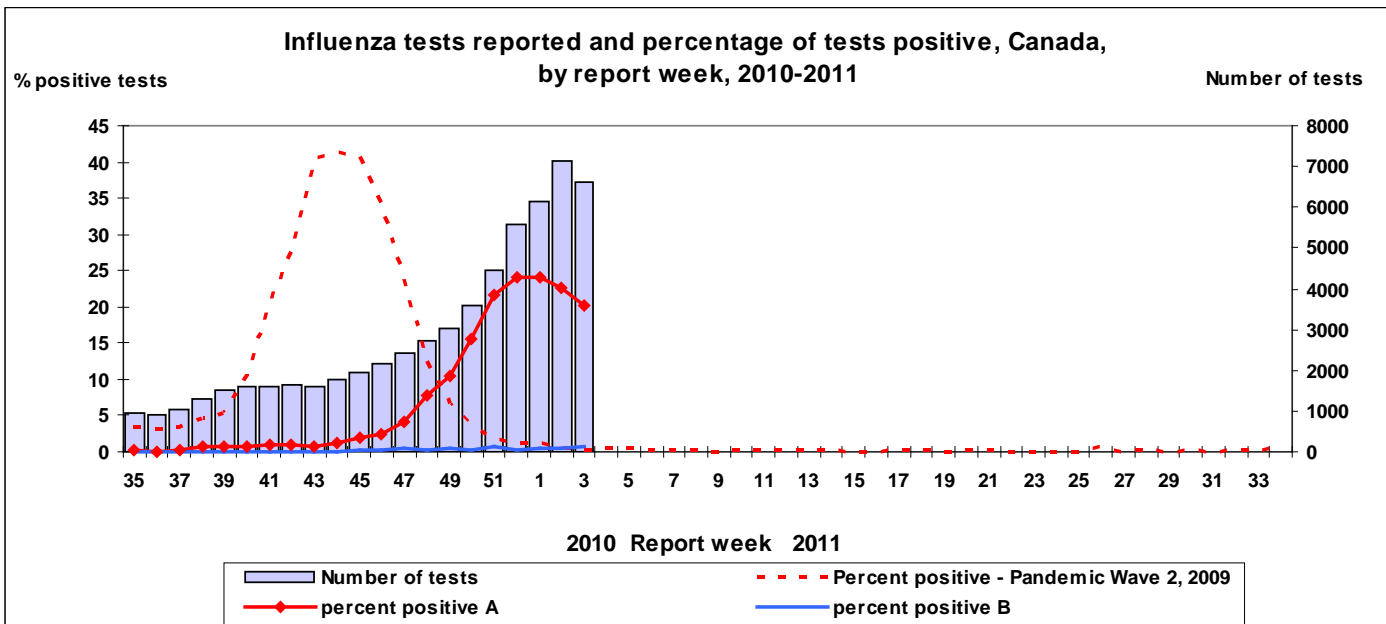
Reporting provinces	Weekly (January 16 to January 22, 2011)						Cumulative (August 29, 2010 to January 22, 2011)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	33	0	13	12	8	4	119	0	44	31	44	13
AB	83	0	62	16	5	12	319	0	259	47	13	22
SK	8	0	0	0	8	1	35	0	7	0	28	6
MB	33	0	0	0	33	0	449	0	56	1	392	0
ON	613	0	275	52	286	21	4163	0	1693	176	2294	114
QC	538	0	61	4	473	8	2999	0	270	11	2718	36
NB	0	0	0	0	0	0	10	0	3	1	6	0
NS	4	0	1	1	2	0	9	0	4	1	4	0
PE	7	0	6	1	0	0	12	0	6	6	0	0
NL	5	0	5	0	0	0	8	0	7	1	0	0
Canada	1324	0	423	86	815	46	8123	0	2349	275	5499	191

*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 (Jan. 16 to Jan. 22, 2011)					Cumulative (Aug. 29, 2010 to Jan. 22, 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	21	1	12	8	2	405	37	284	84	18
5-19	25	7	15	3	8	185	23	94	68	19
20-44	27	10	9	8	2	391	66	220	105	16
45-64	17	5	7	5	1	318	48	198	72	13
65+	27	2	23	2	2	1128	12	960	156	14
Unknown	0	0	0	0	0	145	3	139	3	0
Total	117	25	66	26	15	2572	189	1895	488	80

*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 03 (ending Jan. 22, 2011), 24 new laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network: 12 from ON, and 12 from QC. This number decreased compared to the previous week (week 02) in which 30 paediatric hospitalizations were reported (note that numbers may fluctuate because of the delays in reporting). A new paediatric death was reported this week (week 04) in ON, of a child between 10 and 16 years old with unsubtype influenza A who also had an underlying condition. This is the second paediatric death reported by IMPACT this season, the first being a child between 6 months and 23 months of age, who tested positive for pandemic H1N1 2009 in ON in week 48.

Since the beginning of the season, 258 hospitalizations with laboratory-confirmed influenza have been reported from BC, AB, SK, MB, ON & QC; 48 (18.6%) as influenza A/H3N2, 7 (2.7%) pandemic H1N1 2009, 191 (74.0%) as unsubtype influenza A, and 12 (4.7%) influenza B. The distribution of cases to date by age group was as follows: 18.6% among 0-5 month olds; 28.3% among 6-23 month olds; 28.7% among the 2-4 year-olds; 15.5% among 5-9 year-olds; and 8.9% among children 10-16 years old.

Adult Influenza Hospitalizations and Deaths

During week three (week ending Jan.22, 2011) 51 new laboratory-confirmed influenza- adult (16 years of age and older) hospitalizations were reported through the Canadian Nosocomial Infection Surveillance Program (CNISP). This number decreased for the second week in a row, compared to 86 adult hospitalizations in week 02 and 124 in week 01 (note that numbers may fluctuate because of the delays in reporting). Of the total 51 new hospitalized cases reported between January

16th, 2011 and January 22nd, 2011, 40 (78.40%) tested positive for unsubtype influenza A, 6 (11.8%) as influenza A/H3N2, 4 (7.8%) as pandemic H1N1 2009, and 1 (2.0) as influenza B. Since the beginning of the season, 538 hospitalized cases have been reported: 116 (21.6%) A/H3N2, 25 (4.6%) pandemic H1N1, 387 (71.9%) influenza A unsubtype, and 10 (1.9%) influenza B, from BC, AB, MB, ON and QC. To-date, 382 of the 538 (71.0%) cases were aged 65 years or older and 230 (42.8%) were males.

Ten provinces and territories currently conduct severe outcomes surveillance and report weekly numbers of hospitalizations, ICU admissions and deaths with laboratory-confirmed influenza. In week 03, ON reported 5 deaths, all in adults, 3 with A/H3N2 and 2 with unsubtype influenza A (note that numbers may fluctuate because of the delays in reporting). Among the 67 fatal cases currently reported since the beginning of the influenza season, 5 deaths were reported from MB and 62 from ON; influenza A/H3N2 was identified in 60% (40/67), unsubtype influenza A in 34% (23/67), pandemic H1N1 2009 in 3 cases (4.5%), and influenza B in one case (1.5%). Seventy-three percent (49/67) of these fatal cases were among persons 65 years of age or older, and another 16% (11/67) 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 January 27, 2011, the National Microbiology Laboratory (NML) has antigenically characterized 149 influenza viruses that were received from provincial laboratories: 100 A/H3N2 from BC, AB, SK, MB, ON & QC, 23 pandemic H1N1 2009 from BC, AB, ON & QC, and 26 B viruses from BC, AB, SK, ON & QC. All 100 influenza A/H3N2 viruses characterized were antigenically related to A/Perth/6/2009, which is the influenza A/H3N2 component recommended for the 2010-11 influenza vaccine. The 23 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 26 influenza B viruses characterized, 25 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 155 influenza A isolates (133 H3N2 and 22 pandemic H1N1) for amantadine resistance and found that 132 influenza A/H3N2 were resistant to amantadine and one was sensitive. All 22 influenza A/H1N1 viruses were resistant to amantadine. 128 influenza viruses (82 H3N2, 21 H1N1, and 25 B) were tested for resistance to both oseltamivir and zanamivir and it was found that all isolates were sensitive to both antivirals.

International influenza update

Geographic update

Northern hemisphere

United States: During week 02 (January 9 to 15, 2011), influenza activity decreased several indicators, but it is unlikely that influenza activity for this season has peaked; 1288 (25.9%) specimens tested positive for influenza of which 84.8% were influenza A and 15.2% were influenza B. Of the influenza A positive specimens, 44.6% were influenza A/H3 (up from 31.5% in week 01), 15.8% pandemic H1N1 2009 (up from 7.7% in week 01) and the rest were unsubtype. The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold. Two influenza-associated paediatric deaths were reported, for a total of 10 this season. One of the deaths reported in week 02 was associated with an influenza A/H3 virus and one was associated with an unsubtype influenza A virus. The proportion of outpatient visits for influenza-like illness (ILI) was 2.9%, which is above the national baseline of 2.5%. Three of the 10 national regions reported ILI above region-specific baseline levels. Four states, mainly in the southeast, experienced high ILI activity; New York City and 9 states experienced moderate ILI activity. The geographic spread of influenza in 17 states was reported as widespread, and 15 states reported regional influenza activity. <http://www.cdc.gov/flu/weekly/index.htm>

United Kingdom

Influenza activity is declining in the UK. GP consultation rates remain above baseline levels in England, Wales and Northern Ireland. The predominant influenza virus is now influenza B; pandemic H1N1 2009 continues to be detected, with very few, sporadic influenza A (H3N2) virus detections. The virus strains circulating are overall well matched to the current influenza vaccine. The proportion of specimens reported as positive for influenza (in England) decreased to 13.5% (267/1,942) in week 03. The proportion of samples positive for RSV and rhinovirus increased and was low for parainfluenza, adenovirus and HMPV. Analysis of surveillance data has identified increases for a number of invasive bacterial pathogens amongst influenza cases in December 2010 and January 2011 compared to the previous season. To date in 2010-11, the total number of influenza outbreaks reported is 165 of which the majority were in schools (77%). Up to 26 January 2011, 338 fatal cases from across the UK have been reported, of which 273 (92%) of the 297 cases with available data were associated with pandemic H1N1 2009 infection, and 19 (6%) with influenza B infection. Reported deaths have been mainly in younger adults and children. Among cases with available information, 73% (184/252) of fatal cases were in one of the clinical risk groups for vaccination, although the majority had not been vaccinated.

http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1294740643915

Europe

Most countries are now reporting regional or widespread influenza activity, with medium to very high influenza-like illness/acute respiratory infection (ILI/ARI) consultation rates and increasing trends. This is more prominent in Western European countries. Forty-three per cent of sentinel swabs tested positive for influenza: 74% were type A, and of the type A viruses subtyped, 99% were pandemic H1N1 2009. The number of severe influenza cases in hospital requiring intensive care is now declining in the UK but are increasing in some other countries.

http://ecdc.europa.eu/en/publications/Publications/110121_SUR_Weekly_Influenza_Surveillance_Overview.pdf

The pattern seen in severe cases in continental Europe is similar to that seen in the U.K. primarily affecting adults between the ages of 15 and 64 years with 60 - 80% reporting a history of underlying risk factors. In areas where pandemic H1N1 2009 and type B viruses are co-circulating in the community, pandemic H1N1 2009 appears to be disproportionately detected in the severe cases. http://www.who.int/csr/disease/influenza/2011_01_14_GIP_surveillance/en/index.html

North Africa and the Middle East

Several countries of North Africa and the Middle East are also experiencing increases in influenza activity. Morocco, Algeria, and Tunisia have had modestly increased levels of influenza detections in the last 2 to 3 weeks. Influenza type B has been the predominant virus reported with lesser amounts of pandemic H1N1 2009. Limited data suggests that pandemic H1N1 2009 is circulating in Egypt where 122 pH1N1-related deaths have been reported since October 2010. Iran and Pakistan have also had a steady increase in influenza detection in the same period of time with the majority of viruses being pandemic H1N1 2009. http://www.who.int/csr/disease/influenza/2011_01_14_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.