



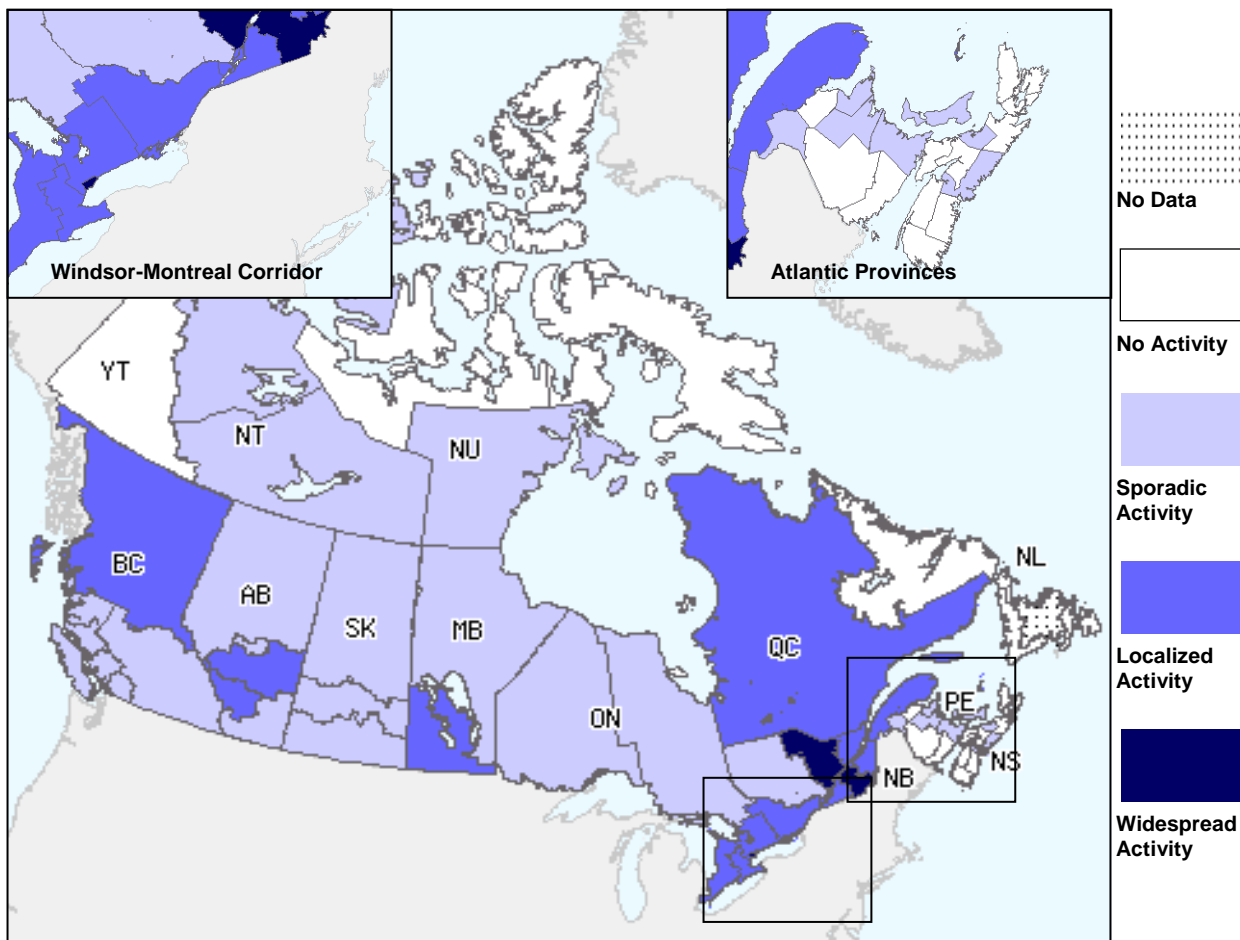
January 2 to January 8, 2011 (Week 01)

- During week 01 the number of regions reporting localized influenza activity has increased across the country.
- Although the percentage of specimens testing positive for influenza increased slightly in week 01, the national rate appears to be approaching the peak. The ILI consultation rate decreased slightly, but remained within the expected range.
- Influenza A/H3N2 was identified in 93% of positive influenza A tests subtyped this season, while pandemic H1N1 2009 accounted for 7%.
- Both the number of paediatric and adult hospitalizations with influenza reported through IMPACT and CNISP surveillance systems decreased during week 01 compared to the previous week.

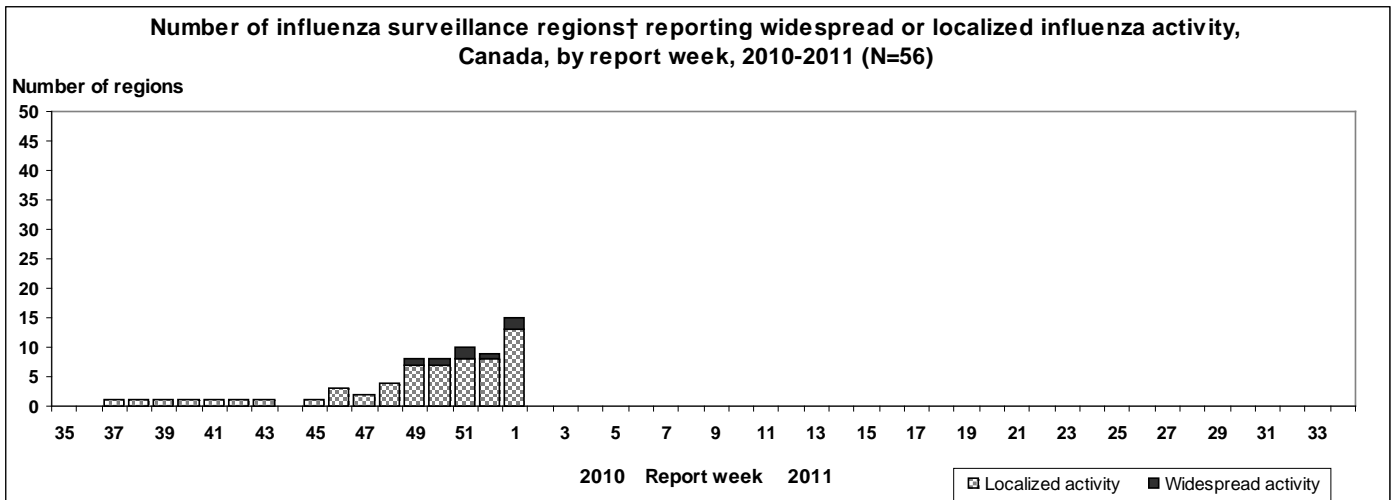
Overall Influenza Summary – Week 01 (January 2 to 8, 2011)

In week 01, two regions (in ON and QC) reported widespread influenza activity, 13 regions reported localized activity (in BC, AB, MB, ON & QC), 24 regions reported sporadic activity (in all provinces and territories except YK and NL) and 16 regions presented no activity (See Activity level Map). Compared to the previous 2 weeks (weeks 51 & 52), 19 regions reported increased influenza activity, 2 regions reported decreased activity, and 15 regions maintained a stable level of influenza activity (sporadic or higher). During week 01, 37 new ILI/influenza outbreaks were reported: 25 in long-term care facilities (LTCF) in MB(3), ON(12), and QC(10); 3 outbreaks in hospitals in AB(1) and ON(2); 8 outbreaks in other facilities/settings in AB(1), ON(6) and PE(1), and a school outbreak in BC.

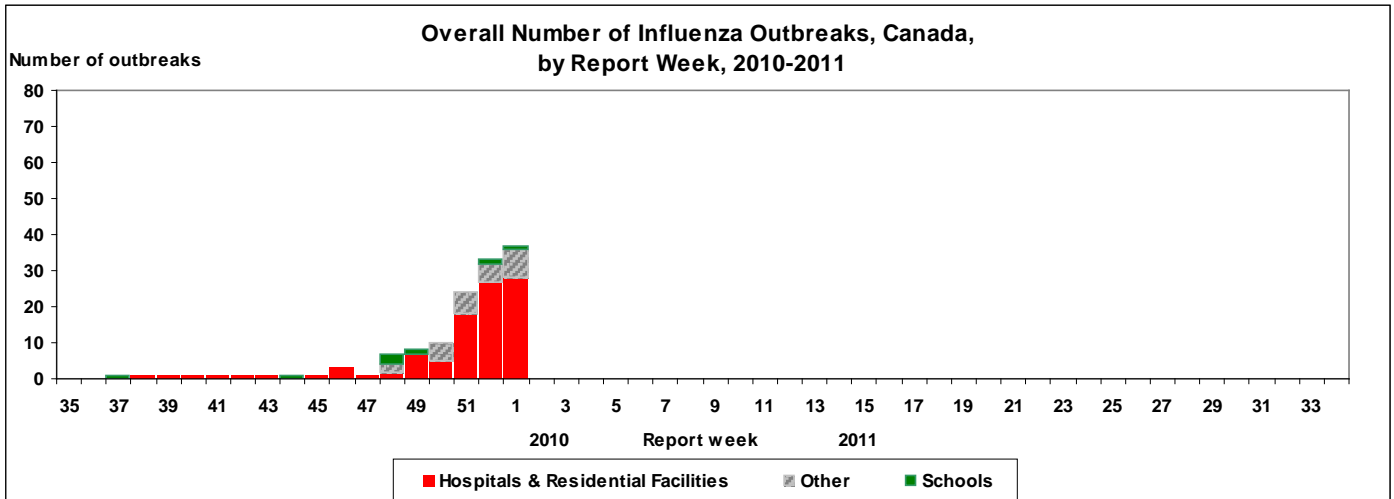
Map of overall Influenza activity level by province and territory, Canada, Week 01



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.



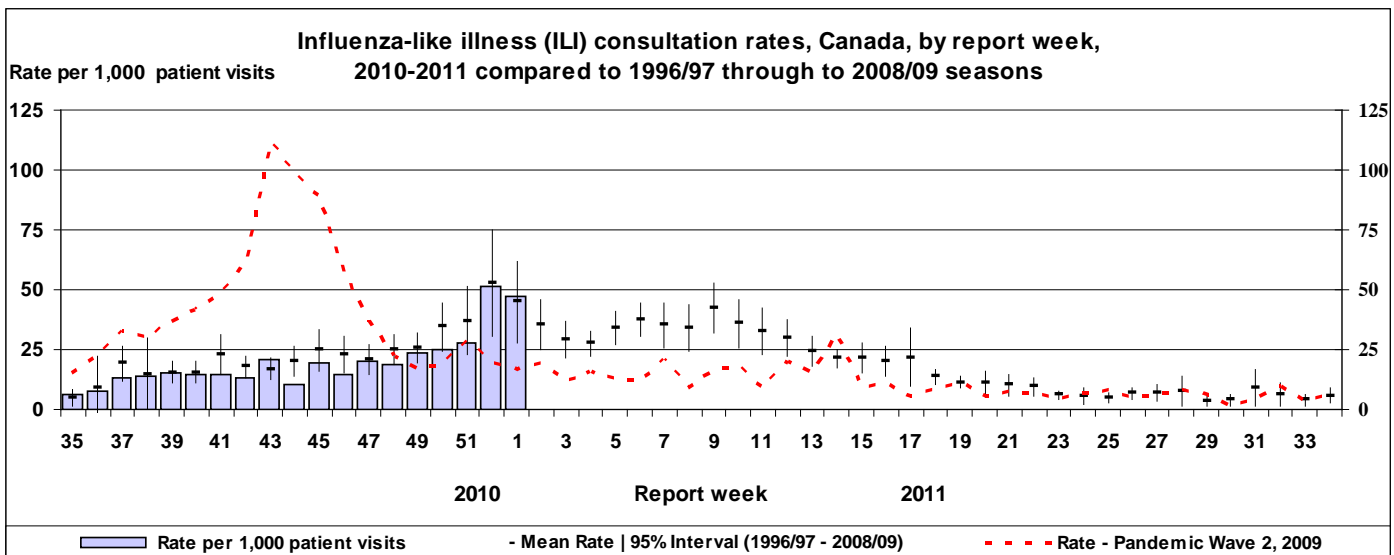
† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.



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 01, the national ILI consultation rate was 47.2 consultations per 1,000 patient visits, which is down slightly compared to 51.4 per 1,000 in week 52. 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 (100.7 per 1,000 consultations in week 01) followed by children between 5 and 19 years (90.9 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 01 was 25.5%. The proportion of positive tests has increased since week 45, and now appears to be approaching the peak. Of the 1879 positive tests reported during week 01, 473 specimens were reported as influenza A/H3N2, 44 as pandemic H1N1 2009 (AB, MB, ON, QC, NB, PE), 36 as influenza B (AB, ON & QC) and 1326 as unsubtype influenza A. Although the majority of influenza virus detections to date this season were influenza A viruses (97.9% or 5540/5661), detections for influenza B viruses continued to increase. Since the beginning of the season, 93.2% of the subtyped positive influenza A specimens were influenza A/H3N2. During week 01, 67.4% (149/221) 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 51.9% (700/1348) (see Tests detailed table). In week 01, the proportion of respiratory syncytial virus detections (RSV) decreased slightly to 9.5% of specimens tested while low levels of parainfluenza (2.7%) and adenovirus (1.7%) continue to be reported (see Respiratory viruses graph).

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

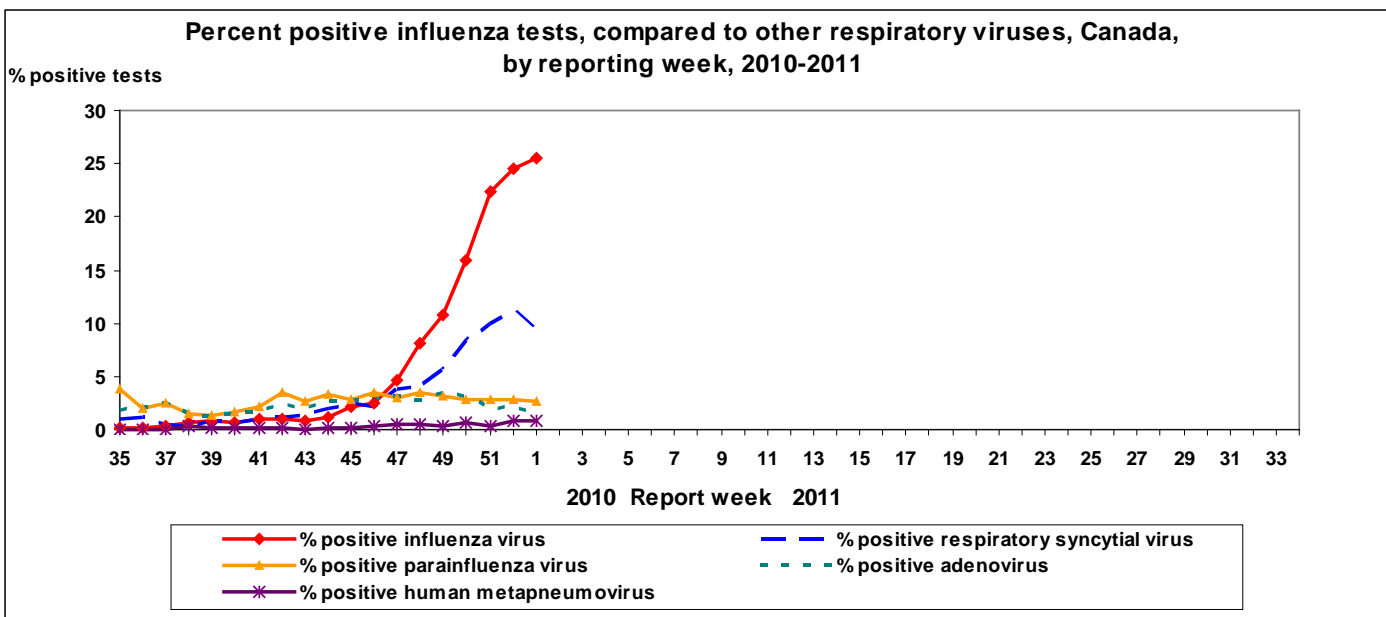
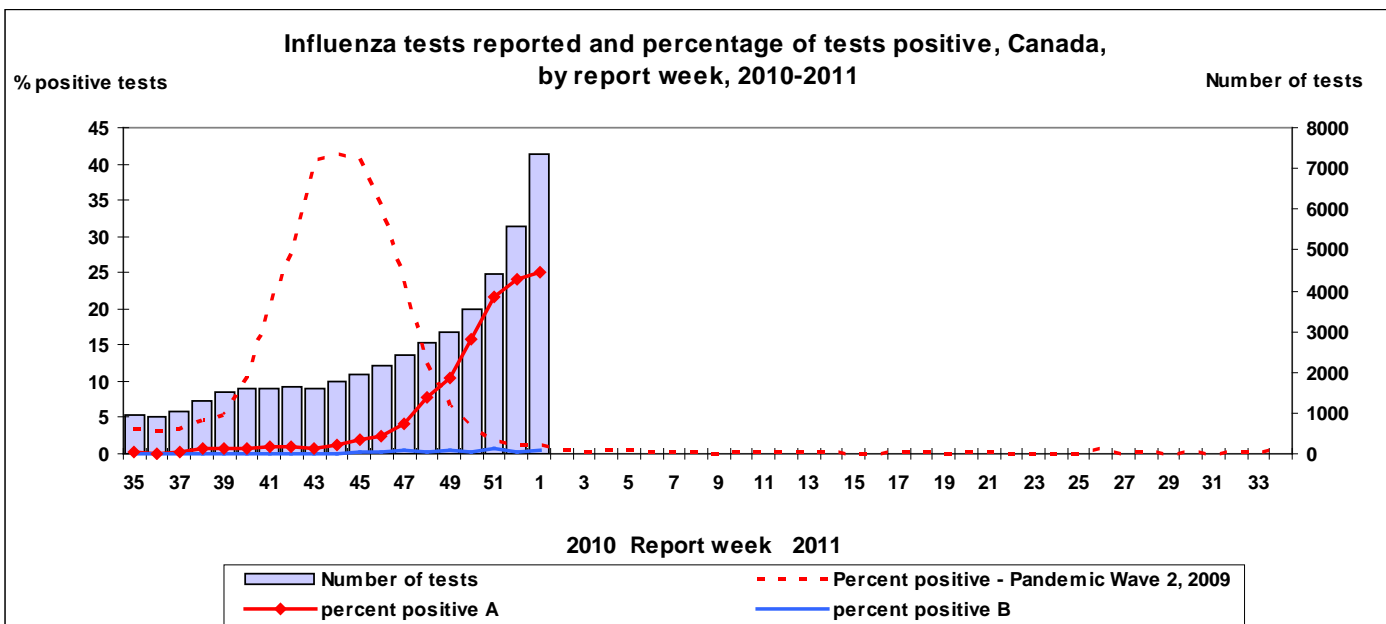
Reporting provinces	Weekly (January 2 to January 8, 2011)						Cumulative (August 29, 2010 to January 8, 2011)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	19	0**	3	0	16	0	62	0	25	6	31	4
AB	65	0	52	10	3	4	176	0	147	20	9	8
SK	7	0	0	0	7	0	22	0	5	0	17	4
MB	36	0	0	1	35	0	386	0	53	1	332	0
ON	1002	0	334	26	642	26	2701	0	1133	76	1492	79
QC	706	0	81	3	622	6	2181	0	220	8	1953	26
NB	3	0	2	1	0	0	5	0	3	1	1	0
NS	1	0	0	0	1	0	2	0	1	0	1	0
PE	3	0	0	3	0	0	4	0	0	4	0	0
NL	1	0	1	0	0	0	1	0	1	0	0	0
Canada	1843	0	473	44	1326	36	5540	0	1588	116	3836	121

*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. ** Note that the non-pandemic A/H1N1 specimen reported during week 52 from BC was subsequently confirmed as pandemic H1N1 2009.

Weekly & Cumulative numbers of positive influenza specimens by age groups reported through case-based laboratory reporting, Canada, 2010-2011*

Age groups	Weekly (Jan. 2 to Jan. 8, 2011)					Cumulative (Aug. 29, 2010 to Jan. 8, 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	34	5	20	9	1	270	24	182	64	12
5-19	13	2	5	6	0	124	8	65	51	8
20-44	45	6	23	16	1	270	27	149	94	12
45-64	34	1	24	9	3	223	21	145	57	10
65+	202	4	149	49	1	860	7	700	153	5
Unknown	0	0	0	0	0	109	0	107	2	0
Total	328	18	221	89	6	1856	87	1348	421	47

*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 01, 23 new laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network: 1 from BC, 1 from AB, 13 from ON, and 8 from QC. This number decreased compared to weeks 51 & 52 in which 29 and 68 paediatric hospitalizations were reported, respectively (note that these numbers may fluctuate because of the delays in reporting). Since the beginning of the season, 193 hospitalizations with laboratory-confirmed influenza have been reported from BC, AB, SK, MB, ON & QC; 36 (18.6%) as influenza A/H3N2, 6 (3.1%) pandemic H1N1 2009, 144 (74.6%) as unsubtype influenza A, and 7 (3.6%) type B. The distribution of cases to date by age group was as follows: 15.5% among 0-5 month olds; 27.5% among 6-23 month olds; 32.1% among the 2-4 year-olds; 17.1% among 5-9 year-olds; and 7.8% among children 10-16 years old. This season, one death in a child aged between 6 months and 23 months, who tested positive for pandemic H1N1 2009 has been reported.

Adult Influenza Hospitalizations and Deaths

During week 01, 100 new laboratory-confirmed influenza-associated adult (16 years of age and older) hospitalizations were reported through the Canadian Nosocomial Infection Surveillance Program (CNISP) from 29 sites. This number is decreased compared to the previous week (week 52) when 115 adult hospitalizations were reported (note that these numbers may fluctuate because of the delays in reporting). New hospitalizations were reported from CNISP sites in AB, MB, ON & QC. Of these 100 hospitalized cases 89 (89%) tested positive for unsubtype influenza A, 2 as influenza A/H3N2, 4 as pandemic H1N1 2009, and 5 as influenza B. Since the beginning of the season, 411 hospitalized cases have been reported: 95 A/H3N2, 14 pandemic A/H1N1, 294 influenza A unsubtype, and 8 influenza B, from BC, AB, MB, ON and QC. 299 of the 411 (72.7%) cases were aged 65 years or older and 180 (43.8%) were males.

Among the ten provinces and territories conducting severe outcomes surveillance, since the beginning of the season 25 deaths have been reported among laboratory-confirmed influenza cases, 3 in MB and 22 in ON. Among these 25 fatal cases, influenza A/H3N2 was identified in 52% (13/25), and unsubtype influenza A in 40% (10/25). Pandemic H1N1 2009 was identified in 2 cases (8%). Seventy-two percent (18/25) of these fatal cases were among persons 65 years of age or older, and another 20% (5/25) 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 13, 2011, the National Microbiology Laboratory (NML) has antigenically characterized 121 influenza viruses that were received from provincial laboratories: 79 A/H3N2 from BC, AB, SK, MB, ON & QC, 21 pandemic H1N1 2009 from BC, AB & ON, and 21 B viruses from BC, AB, SK, ON & QC. All 79 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 21 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 21 influenza B viruses characterized, 20 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 107 influenza A isolates (99 H3N2 and 8 pandemic H1N1) for amantadine resistance and found that 98 influenza A/H3N2 were resistant to amantadine and one was sensitive. All 8 influenza A/H1N1 viruses were resistant to amantadine. 105 influenza viruses (64 H3N2, 20 H1N1, and 21 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

Global information

WHO: The winter influenza season is now underway in parts of the Northern Hemisphere, in particular in Canada, the United States, and the United Kingdom. Canada and the US reported primarily A/H3N2 and influenza B and the UK reported predominantly pandemic H1N1 2009. In tropical regions, Sri Lanka has reported a marked increase in the number of both mild and severe cases related to H1N1 (2009) virus, including 22 deaths. As in the UK, the deaths in Sri Lanka have been predominantly in people under the age of 60 years and most have had preexisting medical conditions. Notably, the large majority of viruses that have been characterized from North America and the UK have been antigenically similar to those contained in the current trivalent influenza vaccine.

<http://www.who.int/csr/disease/influenza/2010_12_30_GIP_surveillance/en/index.html>

Geographic update

Northern hemisphere

United States: During week 52 (December 26, 2010 to January 1, 2011), influenza activity decreased slightly; 995 (20.3%) specimens tested positive for influenza of which 65.9% were influenza A and 34.1% were influenza B. Of the influenza A positive specimens, 41.0% were influenza A/H3, 6.7% pandemic H1N1 2009 and the rest were untyped. The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold. One influenza-associated paediatric death associated with influenza B infection was reported. The proportion of outpatient visits for influenza-like illness (ILI) was 2.6%, which is above the national baseline of 2.5%. Four of the 10 national regions reported ILI above region-specific baseline levels. Six states, mainly in the southeast, and New York City experienced high ILI activity. The geographic spread of influenza in eight states was reported as widespread, and Puerto Rico and 16 states reported regional activity.

<<http://www.cdc.gov/flu/weekly/index.htm>>

United Kingdom

Although GP consultation rates remain above baseline levels in all four countries, several indicators have plateaued. Pandemic H1N1 2009 and influenza B remain the predominant circulating viruses with few, sporadic A/H3N2 viruses detected. The pandemic H1N1 2009 virus strain is virologically and epidemiologically similar to that seen during the pandemic. This season, the total number of outbreaks reported is 146; 116 (79.5%) from schools, 10 from care homes, four from hospitals, one from a military base, one from a nursery and 16 from prisons. Up to 12 January 2011, 112 fatal cases from across the UK have been reported to the HPA and confirmed to be associated with influenza infection. Ninety-five of these cases were associated with pandemic H1N1 2009 infection, and five with influenza B infection. The deaths have been mainly in younger adults and children. Among the 101 cases with information on age: 6% have been less than 5 years; 9% from 5 to 14 years; 69% from 15 to 64 years, and 16% older than 64 years. Among cases with available information, 78% (63/81) 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/1294739353955>

Europe: Despite reduced reporting over the holiday season, in week 52, high or medium influenza activity was reported by 11 countries and widespread activity was reported by eight countries. Increasing trends of influenza activity were reported by 15 countries. The percentage of sentinel specimens that tested positive for influenza rose to 46% in week 52, indicating rising intensity. For combined sentinel and non-sentinel influenza positive specimens, 73% were type A and 27% were type B.

Ninety-eight percent of sub-typed influenza A viruses were A(H1N1) 2009. <http://ecdc.europa.eu/en/publications/Publications/110107_SUR_Weekly_Influenza_Surveillance_Overview.pdf>

Asia: ILI rates are beginning to increase in the temperate countries of Asia as well. Mongolia has noted a sharp increase in the proportion of outpatients with ILI and China has noted slight increases recently in the northern part of the country. In both countries, influenza A/H3N2 has been the predominant virus detected. The Republic of Korea and Japan have also noted low level but increasing rates of ILI. H1N1 (2009) is the predominant virus circulating in both countries although in Japan this represents a shift from recent weeks in which A/H3N2 virus was more commonly detected.

<http://www.who.int/csr/disease/influenza/2010_12_30_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.