

December 5 to December 11, 2010 (Week 49)

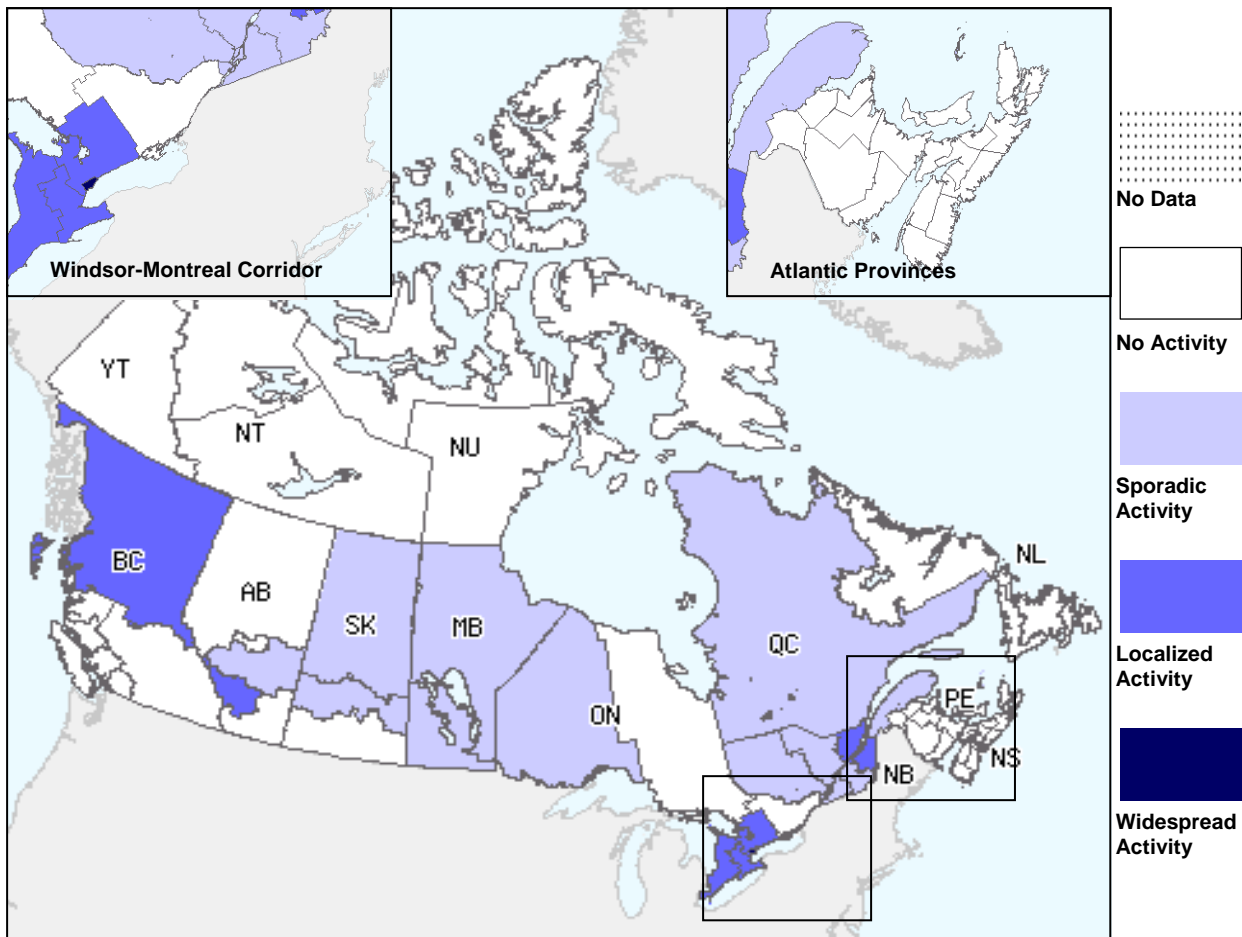
- During week 49, the overall influenza activity in Canada increased from the previous week, particularly in regions across the Prairies, Ontario and Quebec.
- The proportion of positive influenza specimens reported during week 49 has increased over last week with 323 specimens out of 3,000 (10.8%) testing positive of which 96.6% are influenza A and 3.4% influenza B. Of the positive influenza A tests subtyped, 94% are influenza A/H3N2 and 6% are pandemic H1N1 2009.
- Both the number of paediatric and adult hospitalizations with influenza reported through IMPACT and CNISP surveillance systems have increased during week 49 compared to the previous week.

Note: The last FluWatch report of 2010 will be published on December 24th for week 50. No report will be published on December 31st. The FluWatch report for weeks 51 and 52 (December 19th to January 1st) will be published on January 7th, 2011.

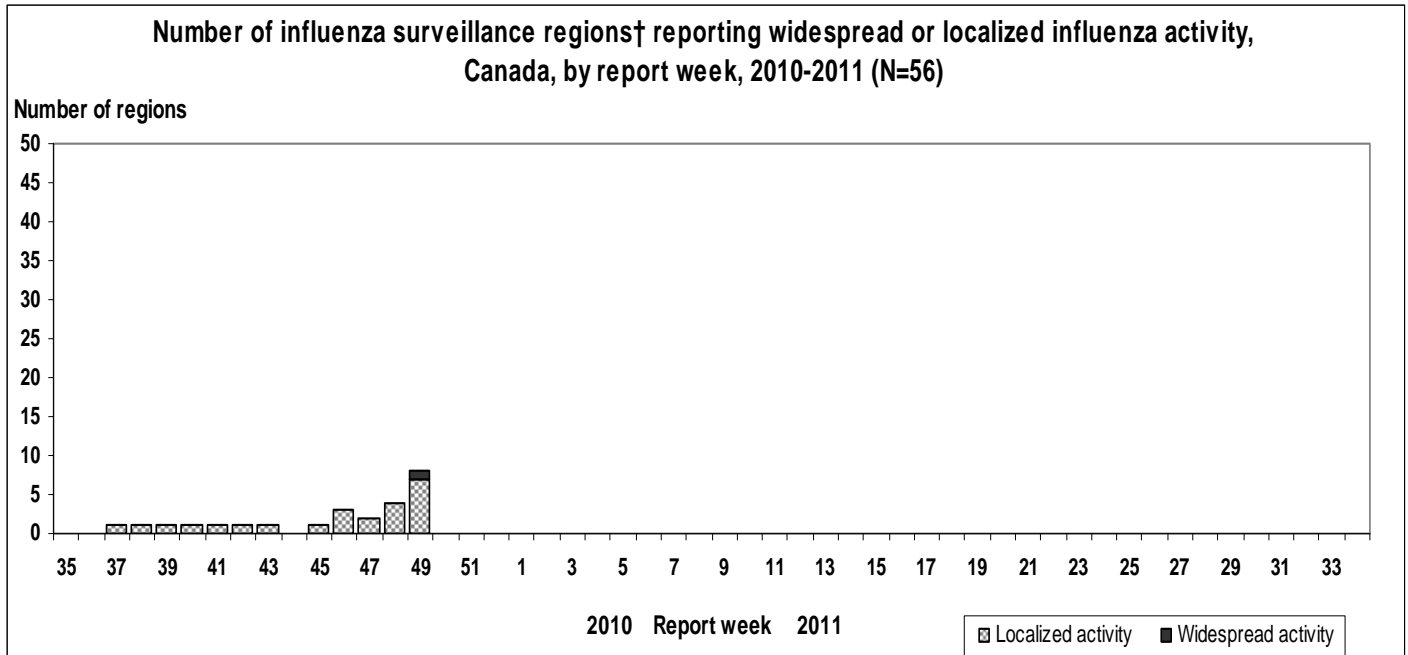
Overall Influenza Summary – Week 49 (December 5 to December 11, 2010)

In week 49, one region in ON reported widespread influenza activity, seven regions reported localized activity (BC, AB, MB, ON & QC), 11 regions reported sporadic activity (AB, SK, MB, ON & QC) and 37 regions presented no activity (See Activity level Map). Eight new ILI/influenza outbreaks were reported during week 49: two influenza A (unsubtyped) in long-term care facilities (LTCF) in MB and QC, five ILI outbreaks in LTCF in AB(1) and ON(4), as well as a school outbreak of ILI in NB.

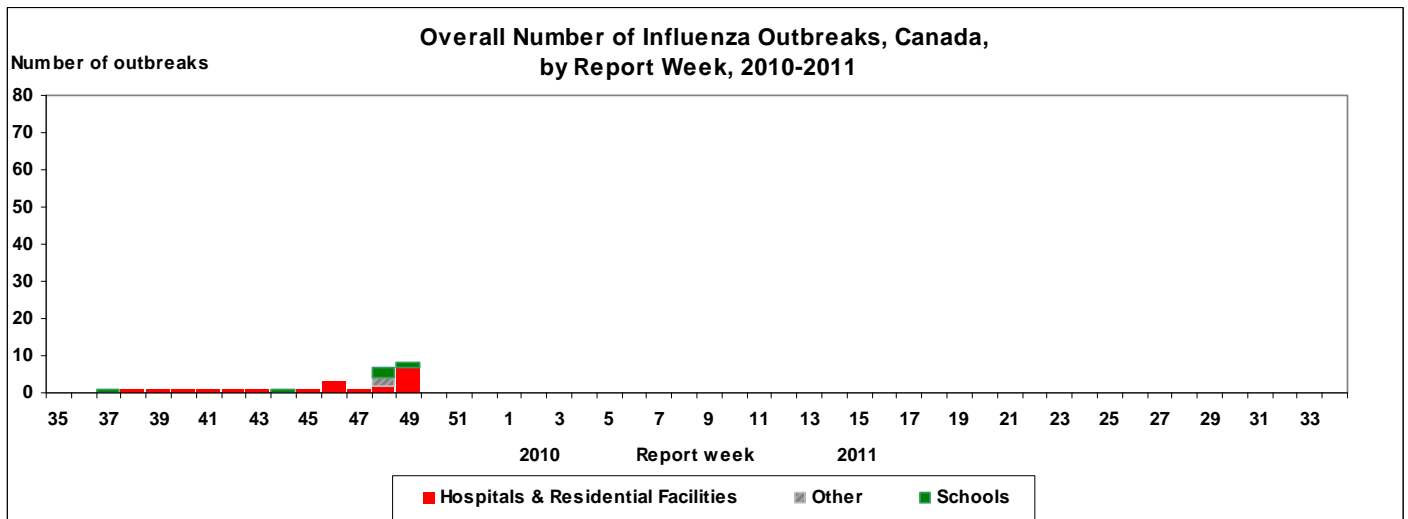
Map of overall Influenza activity level by province and territory, Canada, Week 49



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.



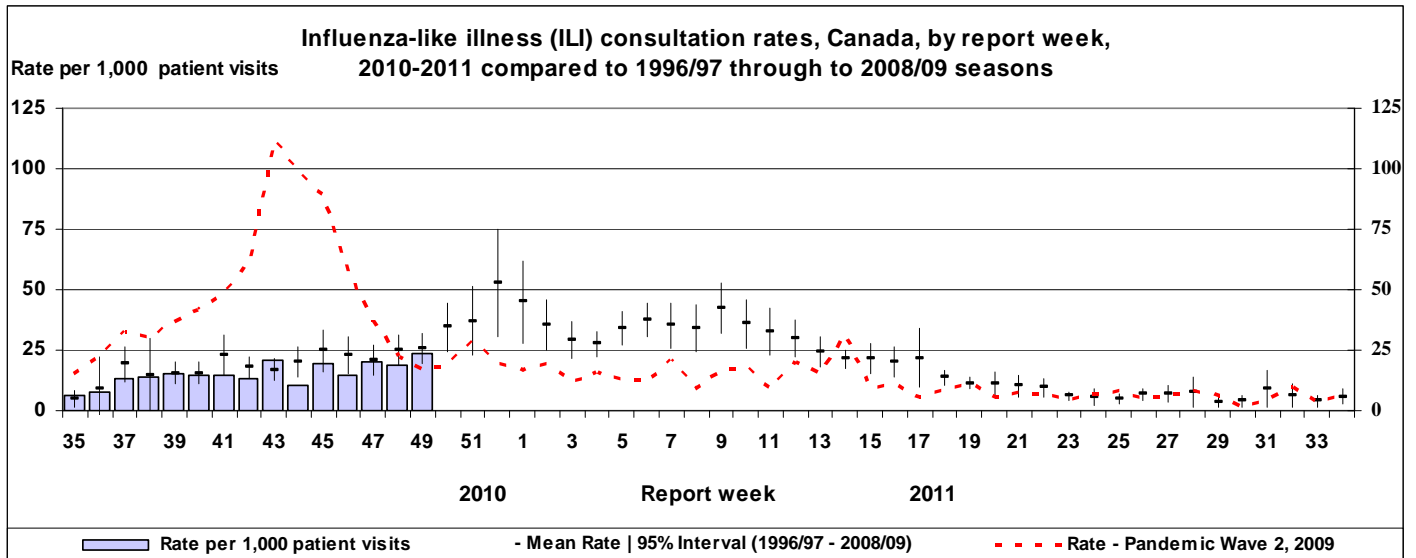
† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.



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 49, the national ILI consultation rate was 23.6 consultations per 1,000 patient visits which has increased from last week but still within the expected levels for this time of year (see ILI graph). Children between 5 and 19 years had the highest consultation rates (45.6 per 1,000 consultations) followed by children under 5 years of age (31.3 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 49 (10.8%, 323/3,000) continued to increase, and was higher than what is usually observed at this time of the year. Of the 323 positive tests, 79 specimens were reported as influenza A/H3N2 (BC, AB, SK, ON & QC), five as pandemic H1N1 2009 (AB, ON), 11 as influenza B (SK, ON & QC) and 228 as unsubtyped influenza A (BC, AB, SK, MB, ON & QC). Although the majority of influenza virus detections to date this season were influenza A viruses (96% or 826/863), detections for influenza B viruses are also increasing. Since the beginning of the season, 96% of the subtyped positive influenza A specimens were influenza A/H3N2. During week 49, 58.6% (17/29) of cases with A/H3N2 reported through the detailed case-based laboratory reporting were aged over 65 years, while since August 29, 2010, the proportion was 43.5% (91/209) (see Tests detailed table). In week 49, the proportion of respiratory syncytial virus detections (RSV) (5.40%) increased slightly in the last week while low levels of parainfluenza (2.86%) and adenovirus (3.42%) continue to be reported (see Respiratory viruses graph).

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

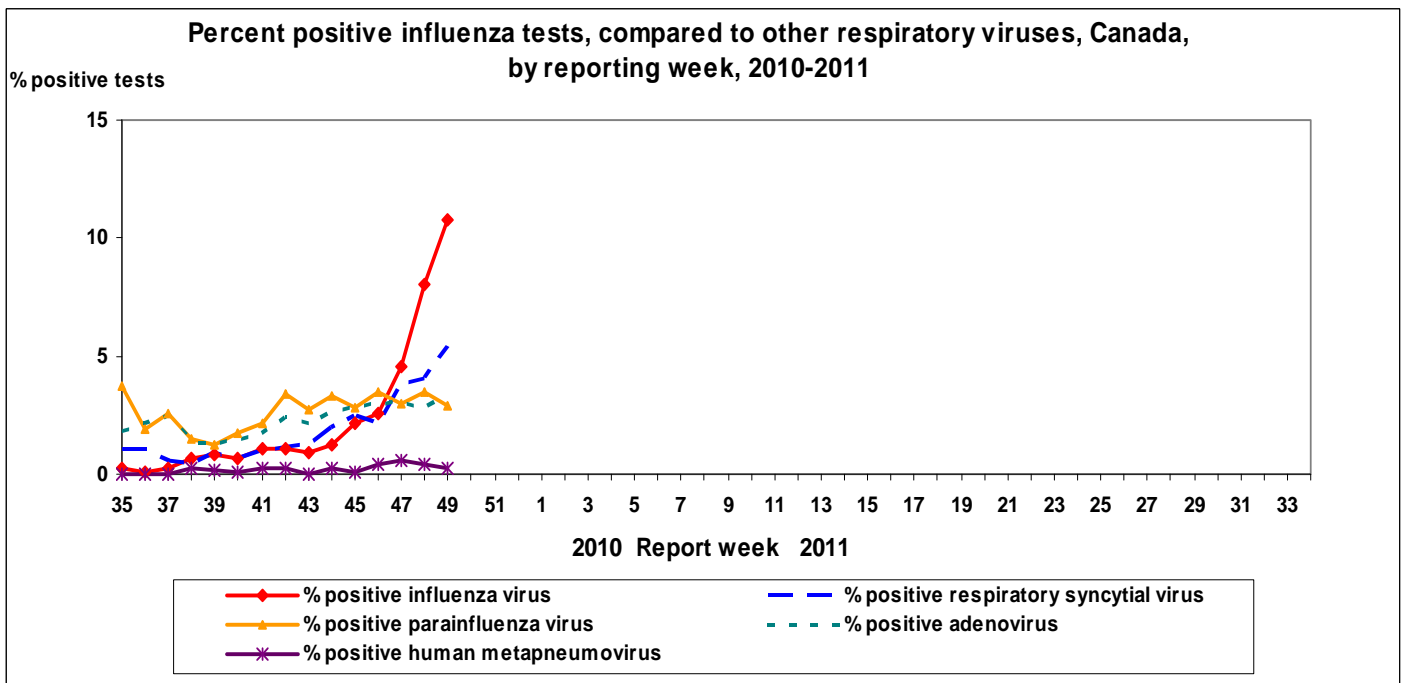
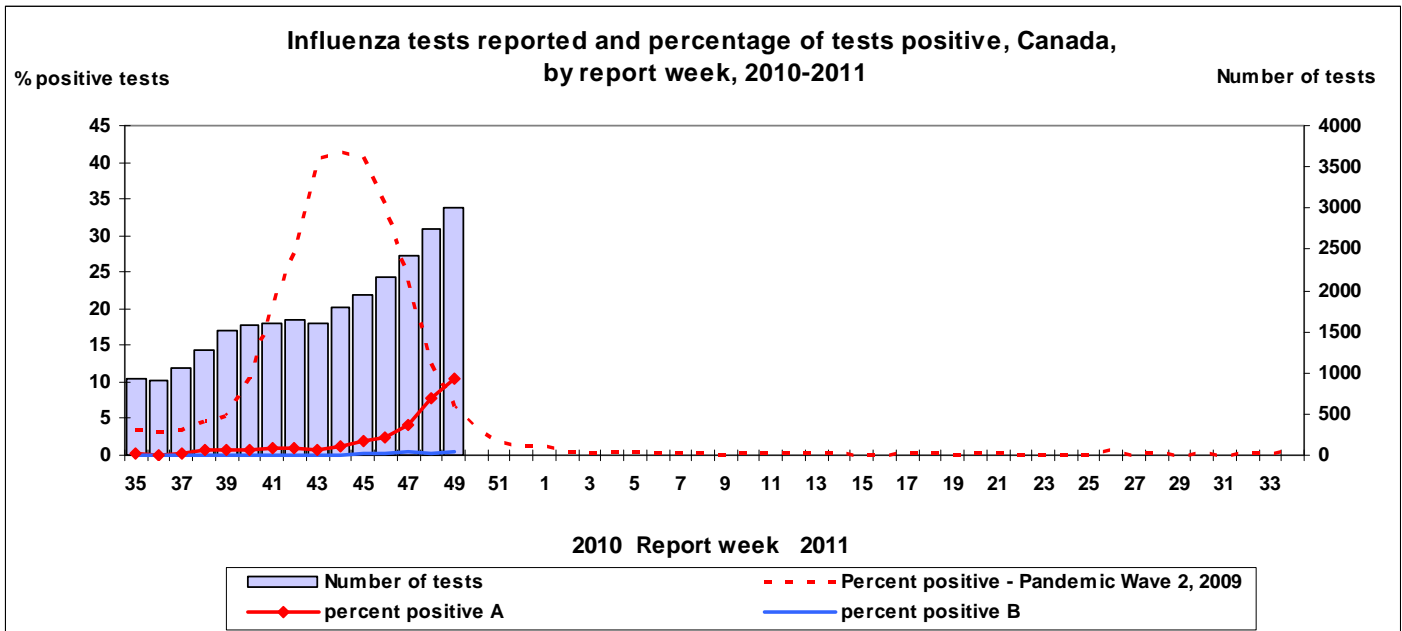
Reporting provinces	Weekly (December 5 to December 11, 2010)						Cumulative (August 29, 2010 to December 11, 2010)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	5	0	3	0	2	0	20	0	14	0	6	3
AB	11	0	7	1	3	0	30	0	24	1	5	1
SK	5	0	2	0	3	2	8	0	3	0	5	4
MB	57	0	0	0	57	0	111	0	53	0	58	0
ON	128	0	65	4	59	6	379	0	175	12	192	21
QC	106	0	2	0	104	3	278	0	29	0	249	8
NB	0	0	0	0	0	0	0	0	0	0	0	0
NS	0	0	0	0	0	0	0	0	0	0	0	0
PE	0	0	0	0	0	0	0	0	0	0	0	0
NL	0	0	0	0	0	0	0	0	0	0	0	0
Canada	312	0	79	5	228	11	826	0	298	13	515	37

*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 (Dec. 5 to Dec. 11, 2010) (77/323)					Cumulative (Aug. 29, 2010 to Dec. 11, 2010) (314/863)				
	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	12	0	4	8	0	55	2	36	17	6
5-19	10	0	1	9	0	28	1	14	13	2
20-44	13	0	3	10	1	64	1	44	19	4
45-64	13	0	3	10	0	39	3	24	12	5
65+	27	0	17	10	0	110	0	91	19	0
Unknown	1	0	1	0	0	1	0	0	1	0
Total	76	0	29	47	1	297	7	209	81	17

*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 49, 13 new laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network; one from SK, 4 from MB, 5 from ON and 2 from QC. This season, one death in a child aged between 6 months and 23 months, who tested positive for pandemic H1N1 2009 has been reported. Since the beginning of the season, 40 hospitalizations have been reported from BC, AB, SK, MB, ON & QC; 6 (15%) as influenza A/H3N2, two (5%) pandemic H1N1 2009, 29 (72.5%) as unsubtype influenza A, and three (7.5%) type B. The distribution of cases to date by age group was as follows: 27.5% among 0-5 month olds; 35% among 6-23 month olds; 15% among the 2-4 year-olds; 20% among 5-9 year-olds; and 2.5% among children 10-16 years old.

Adult Influenza Hospitalizations and Deaths

During week 49, 16 new laboratory-confirmed influenza-associated adult (16 years of age and older) hospitalizations were reported through the Canadian Nosocomial Infection Surveillance Program (CNISP) from 24 sites. Of the 16 hospitalized cases reported, 10 (62.5%) tested positive for influenza A unsubtype, 5 (31.2%) as influenza A/H3N2 and 1 (6.3%) as pandemic H1N1 2009. Since the beginning of the season, 55 hospitalized cases have been reported (15 A/H3N2, 4 pandemic H1N1 and 36 influenza A unsubtype from BC, MB, AB, ON and QC). 37 of the 55 (67.3%) cases were aged 60 years or older and 28 (50.9%) were males.

Among the ten provinces and territories conducting severe outcomes surveillance, since the beginning of the season four deaths have been reported among laboratory-confirmed influenza cases. There were two deaths with influenza A/H3N2 in MB in persons aged between 20 and 44 years and between 45 and 64 years (reported on week 47 and 48, respectively) and two deaths with influenza A among people aged 65 years of age or older in ON (reported on week 40 and 45, respectively).

Antigenic Characterization

Between September 1 and December 16, 2010, National Microbiology Laboratory (NML) has antigenically characterized 66 influenza viruses (50 A/H3N2 from BC, AB, MB, ON & QC, 3 pandemic H1N1 2009 from ON and 13 B viruses from BC, AB, SK, ON & QC) that were received from provincial laboratories. The 50 influenza A/H3N2 viruses characterized were related to A/Perth/6/2009, which is the influenza A/H3N2 component recommended for the 2010-11 influenza vaccine. The three pandemic H1N1 2009 virus characterized were antigenically related to the pandemic vaccine virus A/California/7/2009, which is the recommended H1N1 component for the 2010-11 Northern Hemisphere influenza vaccine. Of the 13 influenza B viruses characterized, nine 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.

Antiviral Resistance

Since the beginning of the 2010-2011 season, NML has tested 62 influenza A/H3N2 and three pandemic H1N1 isolates for amantadine resistance and found that all isolates were resistant to amantadine. 53 influenza isolates (39 A/H3N2, 3 pandemic H1N1 and 11 B) were tested for oseltamivir resistance and found that all isolates were sensitive to oseltamivir. 48 influenza isolates (34 A/H3N2, 3 pandemic H1N1 and 11 B) were tested for zanamivir resistance and found that all isolates were sensitive to zanamivir.

International influenza update

Global information

WHO: Worldwide, influenza activity remained low, except in areas of South Asia and central and western Africa, which have seen recent surges in pandemic H1N1 2009 virus detections. As the northern hemisphere winter approaches, with few exceptions, most countries in the temperate zone of the northern hemisphere continued to report low levels of ILI and influenza virus detections. Except for a few countries in Southeast Asia, most countries in the tropics of the Americas and Asia have recently reported low levels of influenza activity. Globally, there continued to be co-circulation of pandemic H1N1 2009, A/H3N2, B viruses, with the latter two being predominant. <http://www.who.int/csr/disease/influenza/2010_12_03_GIP_surveillance/en/index.html>

Geographic update

Northern hemisphere

United States: During week 48, influenza activity remained relatively low overall; 386 (10.8%) specimens tested positive for influenza of which 57.8% were influenza A and 42.2% were influenza B. Of the influenza A positive specimens, 43.0% were influenza A/H3, 9.4% pandemic H1N1 2009 and the rest were unsubtype. The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold. The proportion of outpatient visits for influenza-like illness (ILI) was 1.5%, which is below the national baseline of 2.5%. No influenza-associated paediatric deaths were reported. <<http://www.cdc.gov/flu/weekly/index.htm>>

Latin America: As of December 3rd, 2010, in the tropical zone of the Americas, overall influenza activity remained low to sporadic in most areas. Some countries continue to report circulation of A(H3N2) and influenza B. Columbia reports small numbers of pandemic H1N1 2009. <http://www.who.int/csr/disease/influenza/2010_12_03_GIP_surveillance/en/index.html>

Europe: During week 49, 24 of 25 reporting countries experienced low intensity influenza activity. An increase in the percentage of sentinel specimens positive for influenza (22%) was reported compared with previous week. Of the 347 influenza viruses detected, 234 (67%) were type A, the majority of which were A/H1N1 2009 and 113 (33%) were type B. The UK (England) reported medium intensity with influenza activity increasing and above baseline levels. Outbreaks and severe cases, mainly in people aged under 65 years, continue to be reported in England. Scotland is also reporting a few severe cases of respiratory infections with confirmed influenza A/H1N1 2009 virus. <http://ecdc.europa.eu/en/publications/Publications/101217_SUR_Weekly_Influenza_Surveillance_Overview.pdf>

Asia: As of December 3rd, 2010, overall influenza activity remained low across China, Japan, and the Republic of Korea. In South Asia, only Sri Lanka reported a recent surge of pandemic H1N1 2009 virus detections during mid-October through late November 2010, however, to date there have not been reports of unusual clinical severity of cases. Several countries of Southeast Asia continued to report low to moderate levels of influenza A/H3N2 virus detections. <http://www.who.int/csr/disease/influenza/2010_12_03_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.