August 14 to 27, 2011 (Weeks 33 and 34)

Overall Influenza Summary

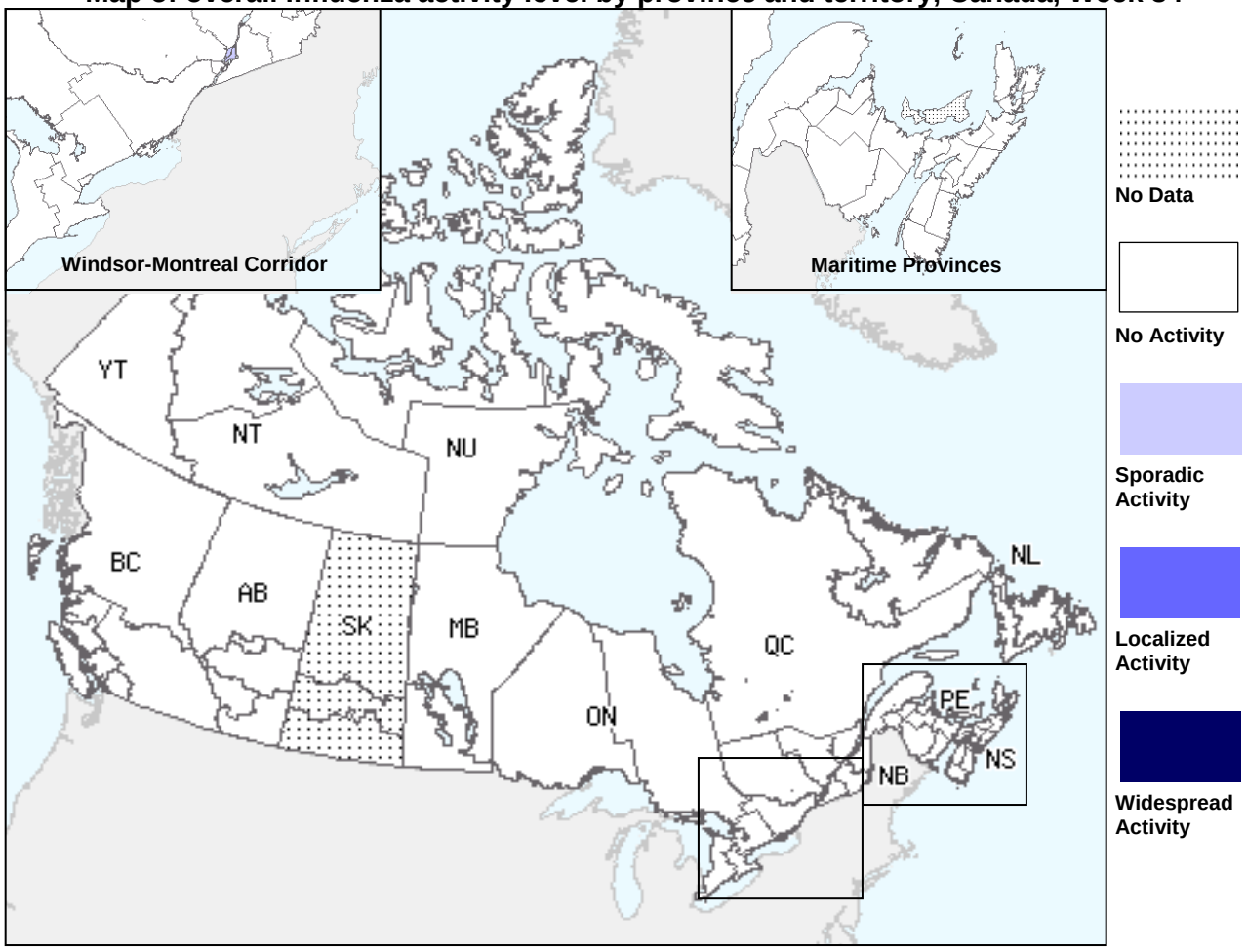
- **Canada is experiencing baseline inter-seasonal levels of influenza activity. In weeks 33 and 34, only 4 laboratory detections of influenza were reported; in each week one region reported sporadic influenza activity; and the ILI consultation rate remained low.**
- **Other respiratory viruses continue to circulate at low levels.**

Note: Publication of weekly Fluwatch reports for the 2011-12 season will resume on 21 October 2011 (week 41).

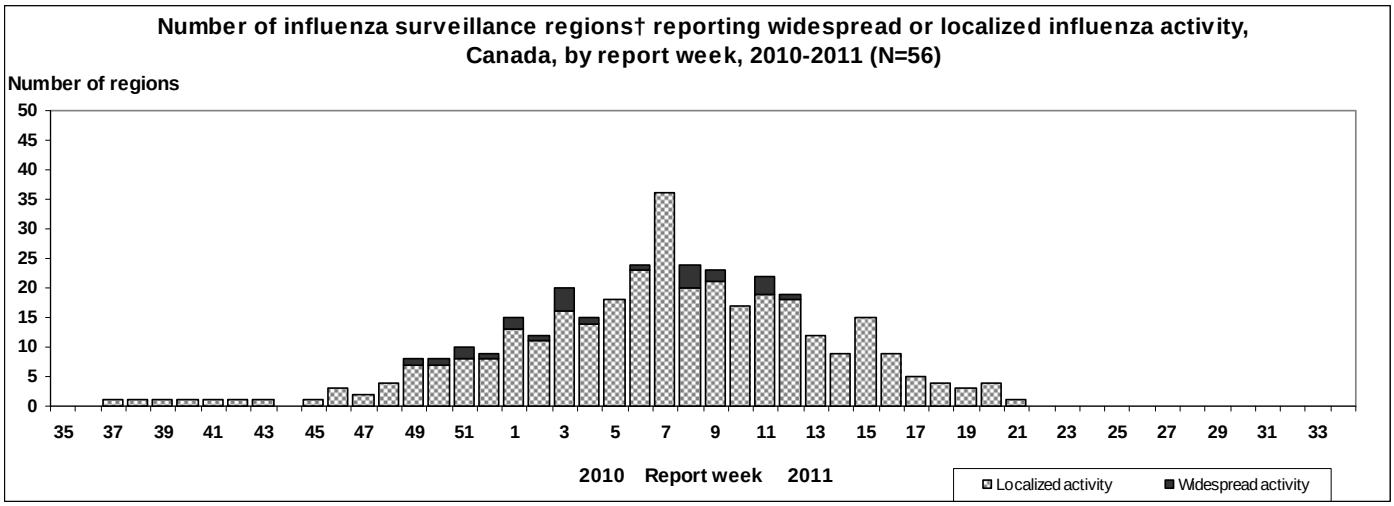
Influenza Activity and Outbreaks

One region in Ontario (in week 33) and one region in Quebec (in week 34) reported sporadic influenza activity. Saskatchewan and Prince Edward Island have stopped reporting for the season (see Activity level Map). No new outbreaks of influenza or ILI were reported in weeks 33 or 34.

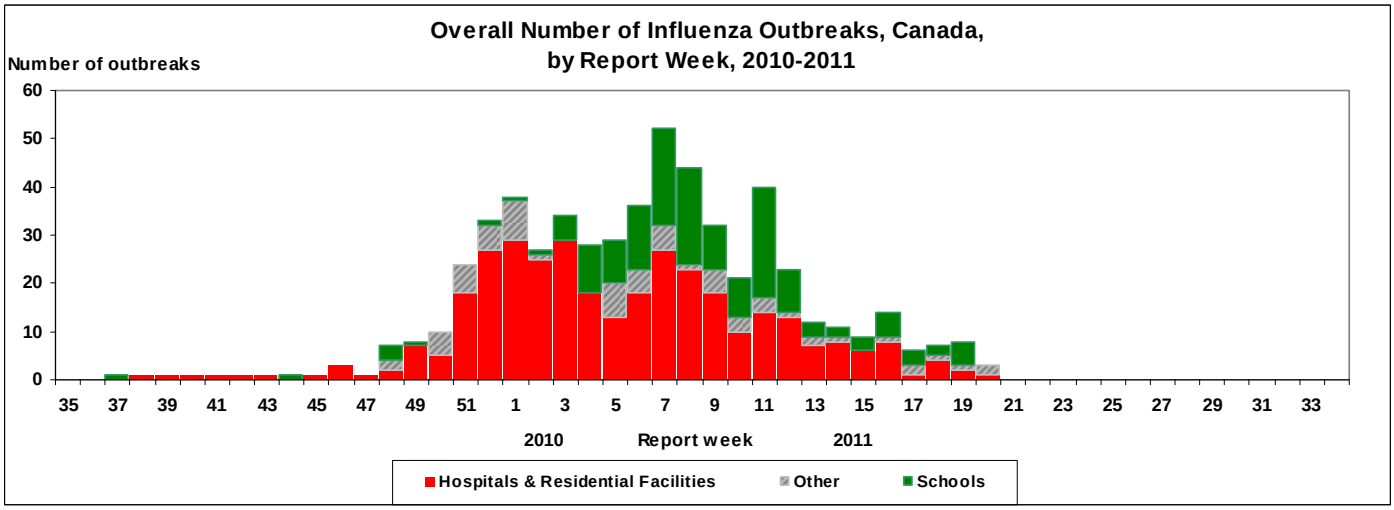
Map of overall Influenza activity level by province and territory, Canada, Week 34



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.



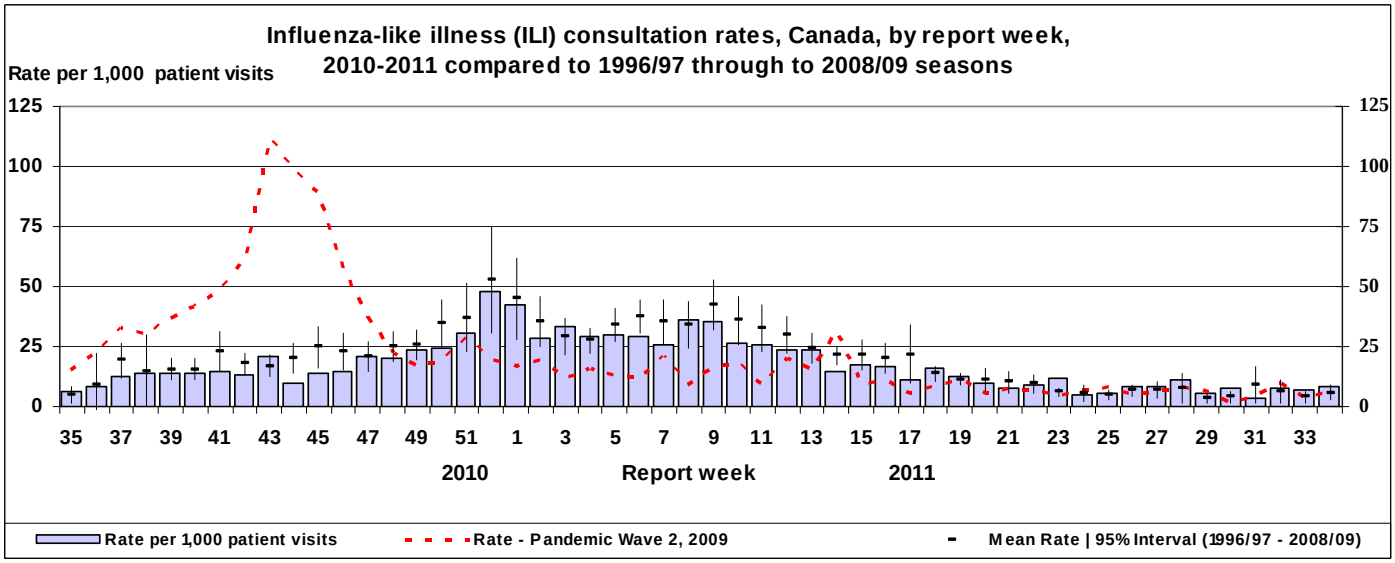
† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.



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 33, the national ILI consultation rate was 7.2 per 1,000 patient visits, and 8.5 consultations per 1,000 patient visits in week 34. In both weeks 33 and 34, the highest consultation rate was observed among children between 5 and 19 years of age.



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

Only 4 detections of influenza were reported across Canada in weeks 33 and 34, 3 influenza B and one unsubtyped influenza A. The proportion of tests positive for influenza was 0.2% in week 33 and 0.2% in week 34 which is similar to the previous few weeks. The proportion of positive tests peaked in week 52 (see Influenza tests graph). Since the beginning of the season, 84.6% (14,828/17,535) of influenza virus detections have been influenza A viruses, of which 86.1% (6,364/7,388) of subtyped specimens have been A/H3N2. Detections of influenza B increased from week 03 to a peak in week 15. Through detailed case-based laboratory reporting where age data is provided, from August 29, 2010, to August 27, 2011, 48.0% (2,573/5,364) of cases with A/H3N2 were aged 65 years or older. In contrast, the majority of cases with pH1N1 2009 (94.5%, 818/866) and influenza B (90.4%, 2,094/2,316) were under 65 years of age (see Tests detailed table). The proportion of positive tests for RSV peaked in week 07 and has continued to decline since then. The proportion of positive tests for parainfluenza viruses peaked in week 19 although there has been a slight increase in weeks 33 and 34 (see Respiratory viruses graph). The proportion of late season tests positive for rhinovirus peaked at 25.8% in week 27 and has decreased to 16.5% in week 34. For more details of weekly respiratory virus detections in Canada, see http://www.phac-aspc.gc.ca/bid-bmi/dsd-dsm/rvdi-divr/index-eng.php.

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

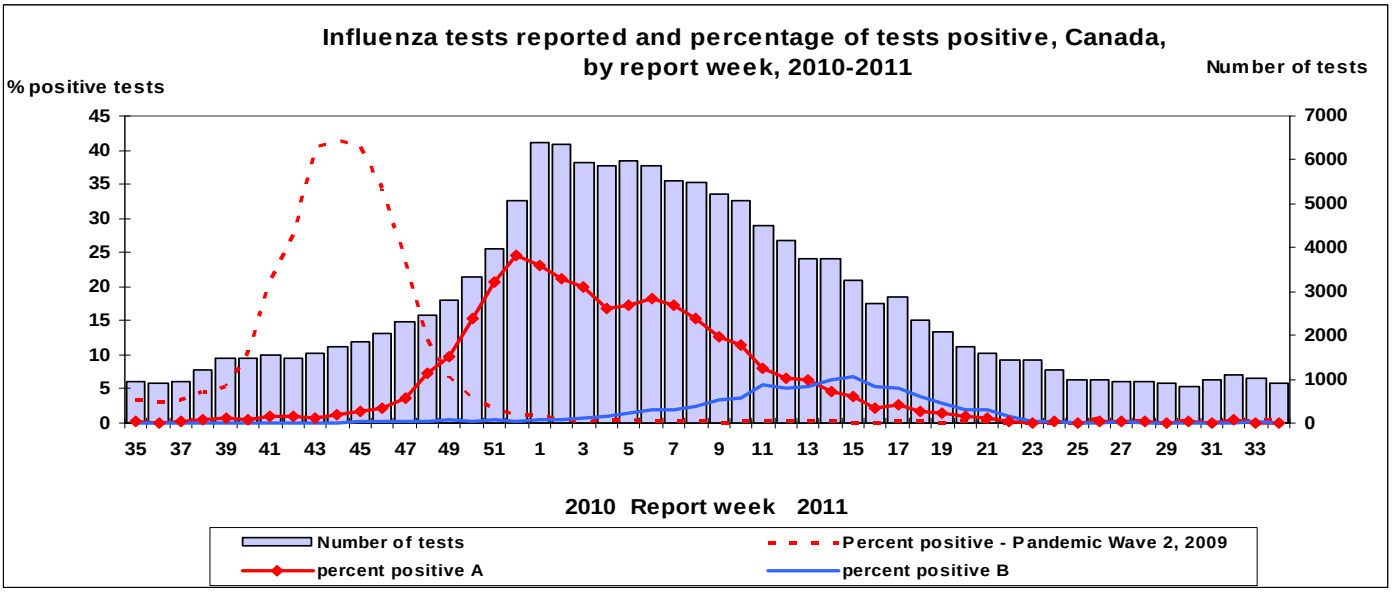
Reporting provinces	Weekly (August 14 to August 27, 2011)						Cumulative (August 29, 2010 to August 27, 2011)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	0	0	0	0	0	0	479	0	202	164	113	181
AB	0	0	0	0	0	0	1090	0	774	279	37	743
SK	0	0	0	0	0	1	321	0	213	31	77	180
MB	0	0	0	0	0	0	515	0	56	2	457	15
ON	0	0	0	0	0	1	4870	0	3225	298	1347	673
QC	1	0	0	0	1	1	6028	0	957	41	5030	760
NB	0	0	0	0	0	0	939	0	656	176	107	97
NS	0	0	0	0	0	0	272	0	80	11	181	7
PE	0	0	0	0	0	0	97	0	79	16	2	7
NL	0	0	0	0	0	0	217	0	122	6	89	44
Canada	**1**	**0**	**0**	**0**	**1**	**3**	**14828**	**0**	**6364**	**1024**	**7440**	**2707**

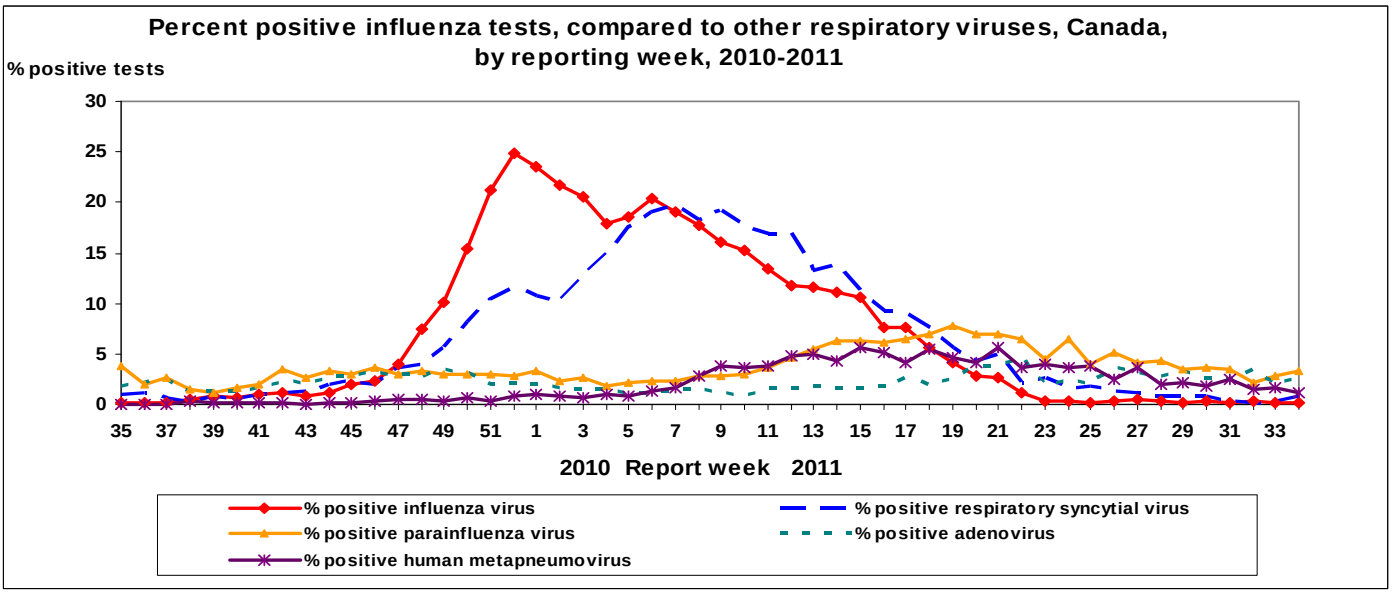
*Unsubtyped: The specimen was typed as influenza A, but no test for subtyping was performed. Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Note: Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add 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 (Aug 14 to Aug.27, 2011)					Cumulative (Aug. 29, 2010 to Aug. 27, 2011)				
	Influenza A				B	Influenza A				B
	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total
<5	0	0	0	0	0	2851	141	983	1072	653
5-19	0	0	0	0	0	1829	109	393	510	817
20-44	0	0	0	0	0	2757	357	804	1141	455
45-64	0	0	0	0	0	1893	211	611	902	169
65+	0	0	0	0	0	5201	48	2573	2358	222
Unknown	0	0	0	0	0	234	3	225	5	1
Total	**0**	**0**	**0**	**0**	**0**	**14765**	**869**	**5589**	**5988**	**2317**

*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.





Antigenic Characterization

Between September 1 and August 27, 2011, the National Microbiology Laboratory (NML) has antigenically characterized 1021 influenza viruses that were received from provincial laboratories: 284 A/H3N2, 151 pH1N1 2009 and 586 B viruses. Of the 284 influenza A/H3N2 viruses characterized, 281 (99.0%) were antigenically related to A/Perth/16/2009, which is the influenza A/H3N2 component recommended for the 2010-11 influenza vaccine. Three viruses (1.0%) tested showed reduced titer with antiserum produced against A/Perth/16/2009. Of the 151 pH1N1 2009 viruses characterized, 149 (98.7%) were antigenically related to the pandemic vaccine virus A/California/7/2009, which is the recommended H1N1 component for the 2010-11 influenza vaccine. Two viruses (1.3%) tested showed reduced titer with antiserum produced against A/California/7/2009. Of the 586 influenza B viruses characterized, 557 (95.1%) were antigenically related to B/Brisbane/60/08 (Victoria lineage), which is the recommended influenza B component for the 2010-11 influenza vaccine. Four of the 557 viruses tested showed reduced titer with antisera produced against B/Brisbane/60/08. Twenty-nine (4.9%) 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 667 influenza A isolates (497 A/H3N2 and 170 pH1N1 2009) for amantadine resistance and found that 496 influenza A/H3N2 were resistant and one was sensitive. All 170 influenza A/H1N1 viruses were resistant to amantadine. Of 993 influenza viruses (259 A/H3N2, 154 pH1N1 2009, and 580 influenza B) tested for resistance to oseltamivir, 258 A/H3N2 viruses were sensitive and one was resistant with the E119V mutation. The resistant case was associated with oseltamivir prophylaxis/treatment. Of the 154 pH1N1 2009 isolates tested for oseltamivir resistance, 153 were sensitive and one was resistant with the H275Y mutation. The resistant case was associated with oseltamivir treatment. Of the 580 B virus isolates tested, 579 were sensitive to oseltamivir and one was resistant with the D198N mutation. Of 985 influenza viruses (255 A/H3N2, 151 pH1N1 2009, and 579 influenza B) tested for zanamivir resistance all 255 A/H3N2 and 151 pH1N1 2009 isolates were found to be sensitive. Of the 579 B virus isolates tested, 578 were sensitive to zanamivir and one was resistant with the D198N mutation.

Severe Illness Surveillance

Adult hospitalizations and deaths reported through the Canadian Nosocomial Infection Surveillance Program (CNISP) as well as aggregate reporting of severe cases of influenza from several provinces and territories were reported for the 2010-11 season up to week 22. Paediatric (16 years of age and under) influenza-associated hospitalizations and deaths were reported through the Immunization Monitoring Program Active (IMPACT) network up to 2 July 2011. See http://www.phac-aspc.gc.ca/fluwatch/10-11/index-eng.php for previous weekly reports.

International influenza update

Northern Hemisphere

The 2010-11 influenza season has ended in the temperate regions of the northern hemisphere, and all countries report little or no influenza activity.
http://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html

Tropical Zone

In week 32, many countries in Central America and the Caribbean reported declining respiratory virus activity while RSV continued to be the primary virus in circulation. Cuba, Dominican Republic and Honduras have reported influenza circulation in recent weeks, due to both influenza A (pH1N1 2009 and A/H3N2) and influenza B. In Andean and tropical South America, declining levels of influenza activity were reported in Columbia, Brazil, Peru and Bolivia, with variations in the regional proportion of influenza (sub)types.
http://new.paho.org/hq/index.php?option=com_content&task=view&id=3352&Itemid=2469&to=2246

In West Africa as of August 26th, Ghana and Cameroon both reported a predominance of influenza B with decreasing and increasing trends, respectively. In East Africa, Kenya reported continued mixed transmission of influenza B, A/H3N2 and pH1N1 2009 following peak transmission in March. In tropical Asia, most areas reported low influenza activity although Bangladesh, India and Thailand report moderate transmission, predominantly A/H3N2. Viet Nam reported sustained transmission of pH1N1 2009.
http://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html

Southern Hemisphere

South America: In the Southern Cone, RSV circulation continued to decrease with fewer cases of ILI and Severe Acute Respiratory Illness compared to the 2010 season. Among influenza viruses, circulation of influenza pH1N1 2009 and A/H3 have been reported in Argentina, Chile, Paraguay and Uruguay, but with decreasing trends in week 32.
http://new.paho.org/hq/index.php?option=com_content&task=view&id=3352&Itemid=2469&to=2246

South Africa: In week 33, the detection rate of influenza is declining in South Africa, having peaked in week 24. pH1N1 2009 has been the predominant influenza virus detected this season, representing 83% of positive specimens from sentinel physicians, followed by smaller numbers of detections of A/H3N2 (11%) and influenza B (5%). Among hospitalized patients from 4 sentinel sites in 3 provinces, pH1N1 2009 was detected in 73% of specimens, and influenza B in 19%. http://www.nicd.ac.za/?page=seasonal_influenza&id=72

Australia: From August 6 to 19, 2011, levels of ILI in the community continued to increase as reported by sentinel physician surveillance and ILI presentations to emergency departments. The majority of states and territories have reported a predominance of pH1N1 2009 with co-circulation of influenza B. Notifications of influenza have decreased in areas affected in recent weeks such as South Australia, Queensland and New South Wales, although they continue to increase in other regions. Nationally, the number of weekly notifications exceeds peak frequency observed in previous years, except 2009. A high proportion (72%) of presentations to emergency departments in New South Wales were among people 5-44 years of age, although the rate is within the expected range compared to the 2008 and 2010 influenza seasons. Among the 16,990 notifications to date this year, 35% were influenza A unsubtyped, 32% pH1N1 2009, 27% influenza B, and 5% A/H3N2. http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-ozflu-flucurr.htm.

A cluster of 25 oseltamivir-resistant pH1N1 2009 cases has been reported in the Hunter New England health region of New South Wales. None of the 16 cases interviewed to date had received oseltamivir treatment or prophylaxis, none were immunosuppressed and 3 were pregnant. All 25 virus isolates contained the H275Y mutation. No ICU admissions or deaths have been reported related to this cluster. http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-ozflu-flucurr.htm, http://www.promedmail.org (archive # 20110825.2594)

New Zealand: In week 33 (15-21 Aug 2011), the average consultation rate for ILI was 44.6 cases per 100,000, which is below the baseline rate. Among the 653 detections of influenza to date (week 1 to 33), influenza B predominates (60%) followed by A/H3N2 (20%). http://www.surv.esr.cri.nz/PDF_surveillance/Virology/FluWeekRpt/2011/FluWeekRpt201132.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.