July 17 to 30, 2011 (Weeks 29 and 30)

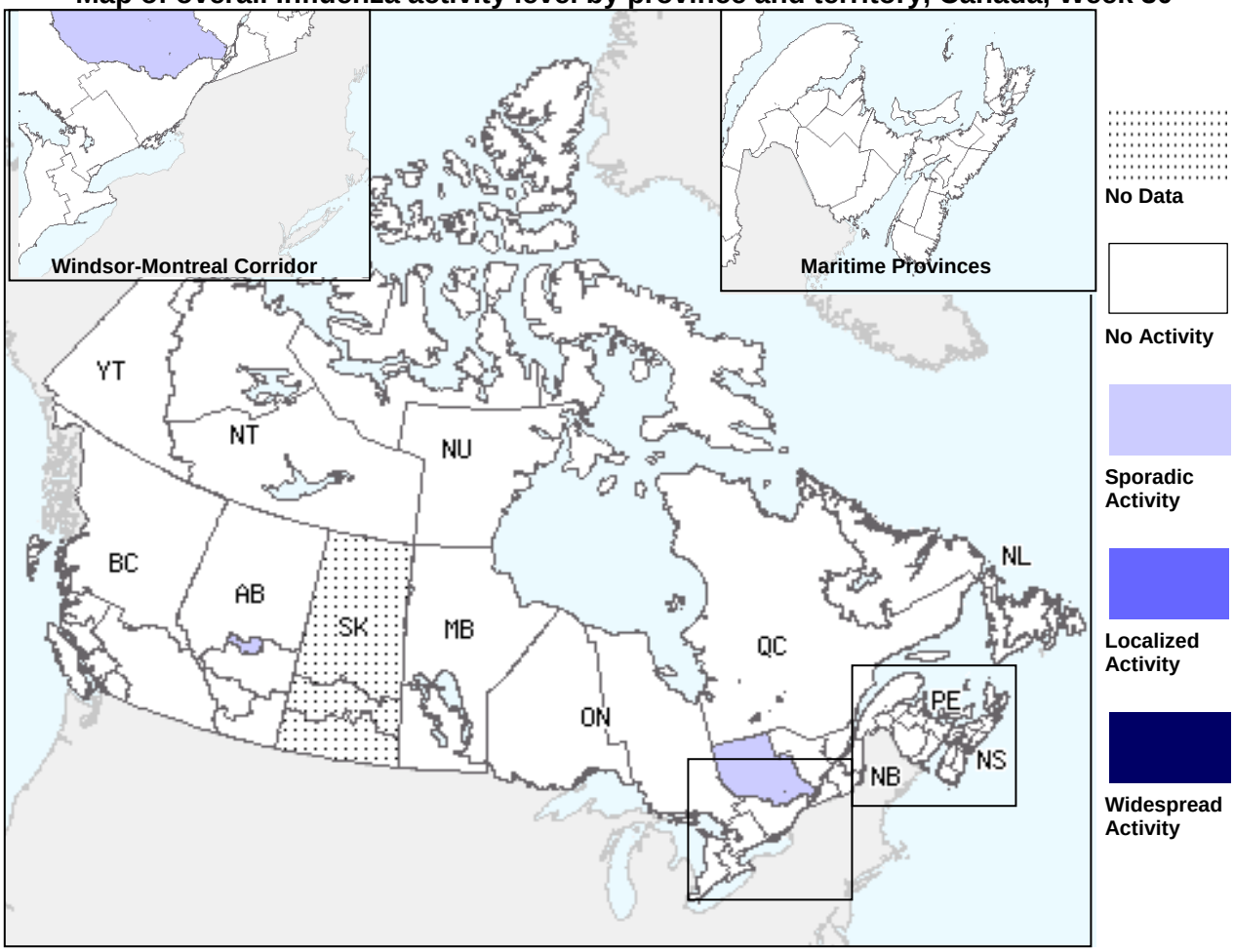
Overall Influenza Summary

- **Canada is experiencing baseline inter-seasonal levels of influenza activity. In weeks 29 and 30, only 4 laboratory detections of influenza were reported; one or two regions reported sporadic influenza activity; and the ILI consultation rate was low.**
- **Circulation of other respiratory viruses seems to have peaked, although there continues to be circulation of rhinovirus.**

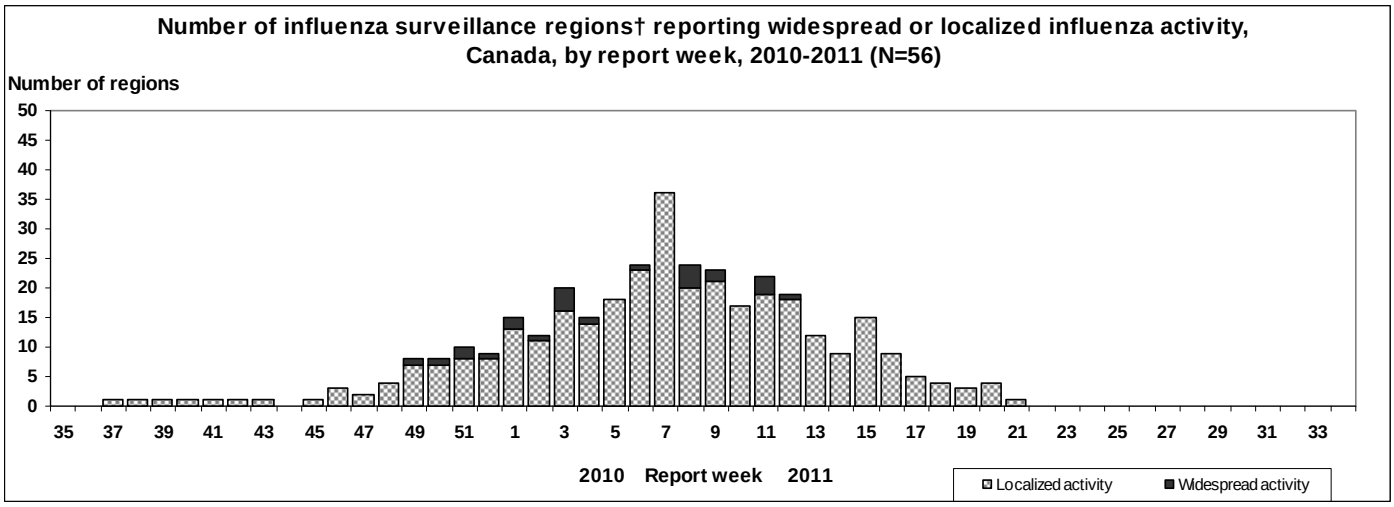
Influenza Activity and Outbreaks

In week 29 one region in New Brunswick reported sporadic activity. In week 30, two regions (one in each of Alberta and Quebec) 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 29 or 30.

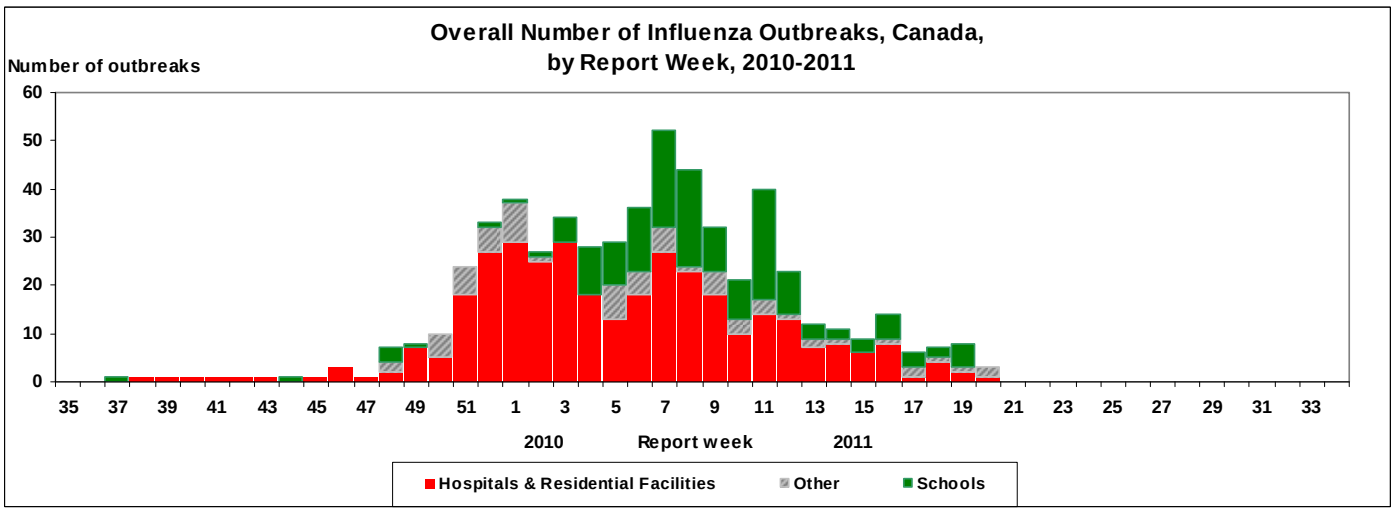
Map of overall Influenza activity level by province and territory, Canada, Week 30



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.

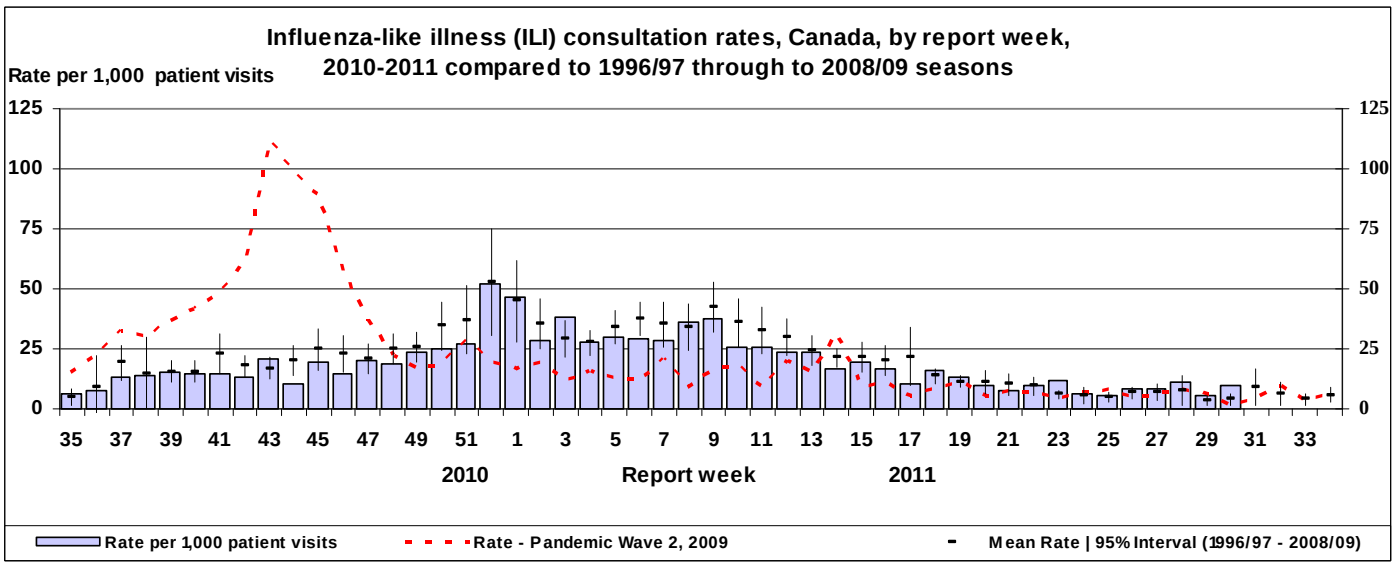


Note that this was the first year that all the provinces and territories were reporting on influenza outbreaks in schools (greater than 10% absenteeism on any day most likely due to ILI) which has increased considerably the total number of outbreaks reported compared to previous years.



ILI consultation rate

During week 29, the national ILI consultation rate was 5.3 per 1,000 patient visits, and 9.7 consultations per 1,000 patient visits in week 30. The latter is above the average rate for ILI at this time of year, but remains low. (see ILI graph). In both weeks 29 and 30, the highest consultation rate was observed among children under 5 years of age (9.9 and 46.8 per 1,000 consultations, respectively).



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 29 and 30, 3 A/H3N2 and one unsubtyped influenza A. The proportion of tests positive for influenza was 0.1% in week 29 and 0.4% in week 30 which is similar to week 28 (0.3%). The proportion of positive tests peaked in week 52 (see Influenza tests graph). Since the beginning of the season, 85.3% (16,867/19,775) of influenza virus detections have been influenza A viruses, of which 84.8% (5,591/6,595) 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 July 16, 2011, 50.7% (2,075/4,093) of cases with A/H3N2 were aged 65 years or older. In contrast, the majority of cases with pH1N1 2009 (94.6%, 771/815) and influenza B (90.2%, 1,364/1,512) 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 and has also declined in recent weeks (see Respiratory viruses graph). The proportion of tests positive for rhinovirus increased peaked at 25.8% in week 27 and has decreased to 17.4% in week 30. 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

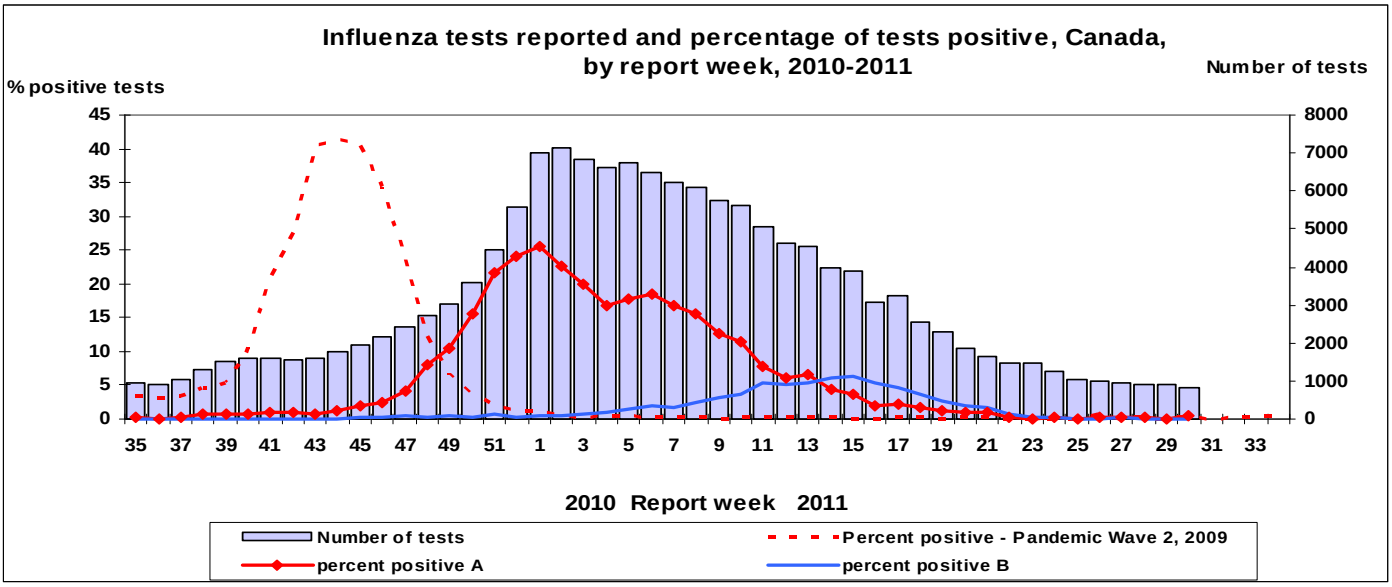
Reporting provinces	Weekly (July 17 to July 30, 2011)						Cumulative (August 29, 2010 to July 30, 2011)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	0	0	0	0	0	0	478	0	201	164	113	181
AB	2	0	2	0	0	0	1088	0	772	279	37	743
SK	0	0	0	0	0	0	321	0	213	31	77	179
MB	0	0	0	0	0	0	515	0	56	2	457	15
ON	1	0	1	0	0	0	6906	0	2451	281	4174	849
QC	1	0	0	0	1	0	6028	0	957	41	5030	774
NB	0	0	0	0	0	0	959	0	669	176	114	106
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	**4**	**0**	**3**	**0**	**1**	**0**	**16881**	**0**	**5600**	**1007**	**10274**	**2905**

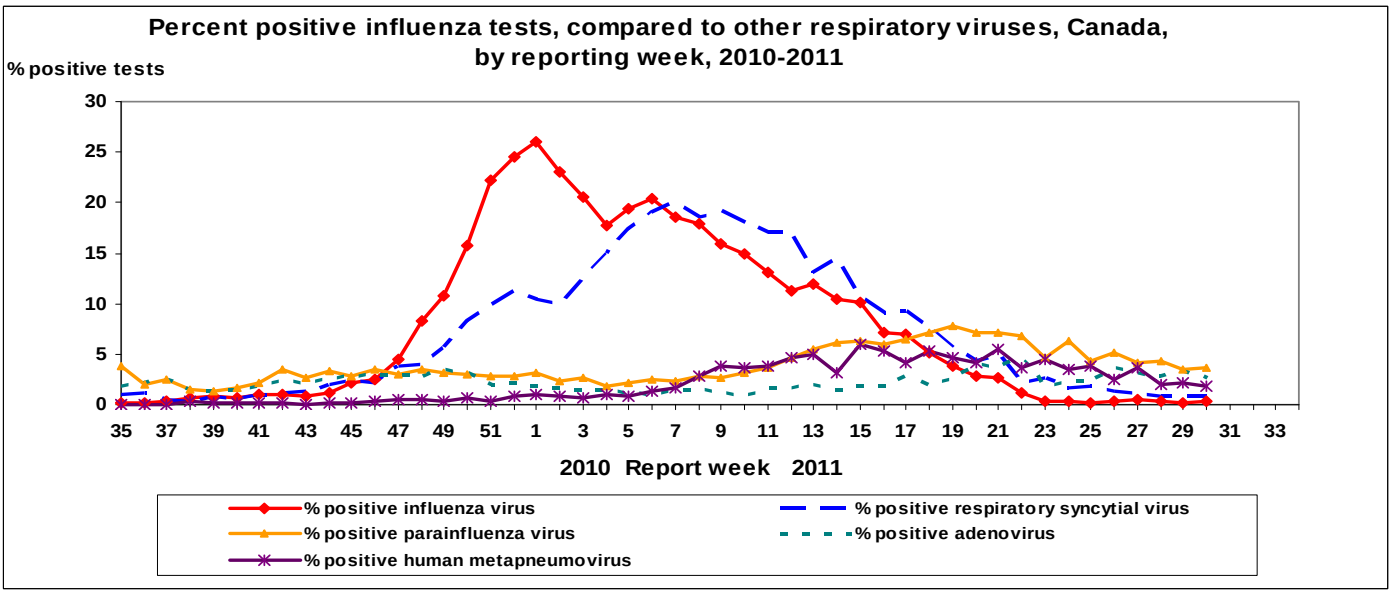
*Unsubtyped: The specimen was typed as influenza A, but no test for subtyping was performed. Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Note: Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add 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 (July 3 to July 16, 2011)					Cumulative (Aug. 29, 2010 to July 16, 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	1027	133	746	148	417
5-19	0	0	0	0	0	525	107	300	118	538
20-44	0	0	0	0	0	1088	335	534	219	293
45-64	0	0	0	0	0	801	196	438	167	116
65+	0	0	0	0	0	2526	44	2075	407	148
Unknown	0	0	0	0	0	232	3	225	4	1
Total	**0**	**0**	**0**	**0**	**0**	**6199**	**818**	**4318**	**1063**	**1513**

*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 4, 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

The WHO has published a review of the northern hemisphere influenza season that summarizes the epidemiology and virology of the northern hemisphere influenza season from October 2010 to April 2011. http://www.who.int/csr/disease/influenza/2010_2011_GIP_surveillance_seasonal_review/en/index.html

Tropical Zone

In weeks 28 and 29, several countries in the Caribbean and Central America reported 20-40% of samples positive for respiratory viruses, with little or no influenza circulation. The Dominican Republic reported a decline in the percentage of specimens positive for influenza, with only influenza B detected in week 30, following co-circulation with pH1N1 2009 earlier in the season. In Cuba, the percentage of samples positive for influenza increased from 0% (week 28) to 25% (week 29); influenza A/H3N2, RSV and rhinovirus were the predominant viruses detected. In the Andean region of South America, Columbia continues to report co-circulation of pH1N1 2009 and A/H3N2. Brazil reported ~17% of specimens positive for influenza in week 28, predominantly A/H3N2 but co-circulating with pH1N1 2009. http://new.paho.org/hq/index.php?option=com_content&task=view&id=3352&Itemid=2469&to=2246,
http://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html

As of July 29, influenza B continues to be the predominant influenza strain in both Ghana and Cameroon. Madagascar reports a transition from a predominance of influenza B to pH1N1 2009. Influenza activity in tropical Asian countries remains low with low-level circulation of A/H3N2 reported in India, Bangladesh and Singapore. Vietnam reports sustained transmission of pH1N1 2009 and some influenza B.
http://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html

Southern Hemisphere

South America: Argentina and Chile continue to report a predominance of RSV in week 29, but detections have been declining since the peak in week 23. In Chile, influenza A represented 13% of specimens positive for respiratory viruses in week 29, and pH1N1 2009 predominated where the influenza subtype was determined. Uruguay reported an increase in the percentage of specimens positive for respiratory viruses and influenza between weeks 25 and 28, associated with increased detections of RSV and pH1N1 2009.
http://new.paho.org/hq/index.php?option=com_content&task=view&id=3352&Itemid=2469&to=2246

South Africa: In week 29, 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 85% of positive specimens from sentinel physicians, followed by smaller numbers of detections of A/H3N2 (10%) and influenza B (4%). Among hospitalized patients from 4 sentinel sites in 3 provinces, pH1N1 2009 was detected in 79% of specimens, and influenza B in 16%. The age distribution of severe cases in 2011 has been similar to that observed in 2010: 38% of cases under 5 years of age, and 31% of cases between 25-44 years of age; with 47% of severe cases HIV positive. http://www.nicd.ac.za/?page=seasonal_influenza&id=72,
http://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html

Australia: From July 2 to 22, 2011, levels of ILI in the community continued to increase as reported by sentinel physician surveillance and ILI presentations to emergency departments. Notifications of influenza continued to increase nationally, particularly in South Australia, Queensland and New South Wales. Among the 2,333 notifications during this period, 35% were influenza A unsubtyped, 31% influenza B, 33% pH1N1 2009, and 0.6% A/H3N2. South Australia continued to report the majority (72%) of notifications as influenza B; Queensland and New South Wales reported mostly pH1N1 2009 with some co-circulation of influenza B.
http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-ozflu-flucurr.htm

New Zealand: In week 30 (25-31 July 2011), the average consultation rate for ILI increased to 66.1 cases per 100,000, which is above the baseline of 50 cases per 100,000. Among the 425 detections of influenza to date (week 1 to 30), influenza B predominates (65%), followed by A/H3N2 (17%). http://www.surv.esr.cri.nz/PDF_surveillance/Virology/FluWeekRpt/2011/FluWeekRpt201130.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.