



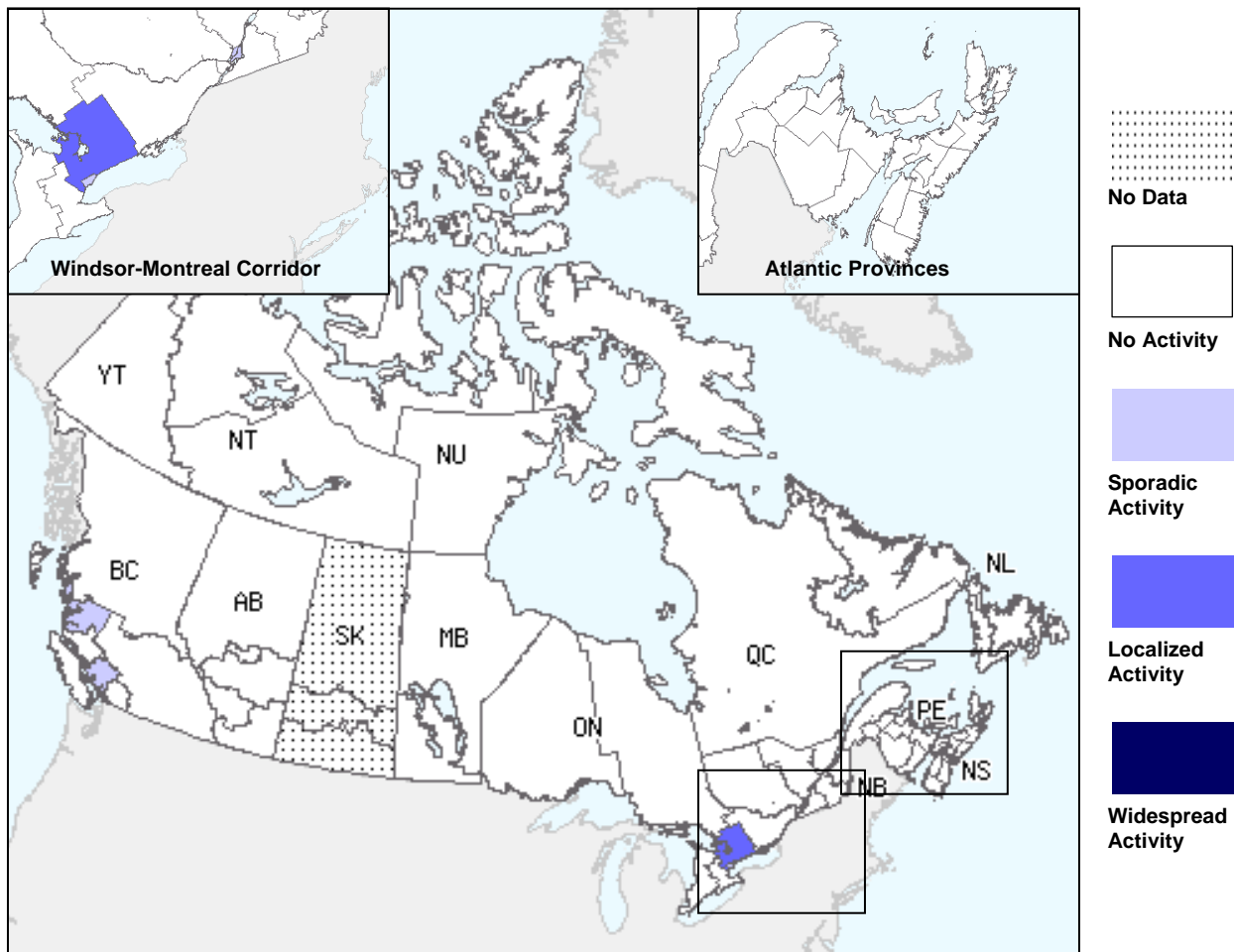
### September 26 to October 9, 2010 (Weeks 39 & 40)

- Overall influenza activity in Canada slightly increased during weeks 39 & 40 but remained relatively low with most of the influenza surveillance regions reporting no activity. While the number of regions reporting localized influenza activity and the ILI consultations rates remained similar to the previous weeks, the proportion of positive influenza specimens reported during the 2-week period has increased slightly.
- 23 positive specimens (out of 3,105) in weeks 39-40 have been reported: seven specimens were reported as influenza A/H3N2 (BC, AB, MB & ON), one as pandemic H1N1 2009 (ON) and 15 as unsubtype influenza A (ON).
- Influenza activity decreased in most parts of the temperate Southern Hemisphere and the season did not appear to have definitively started in the temperate areas of the Northern Hemisphere. Influenza A/H3N2 was the predominant influenza virus worldwide after several weeks of increasing detections in much of the world, but many areas still have active transmission of pandemic H1N1 2009. Most of the influenza A/H3N2 viruses detected were A/Perth/16/2009-like, which is the strain included in the seasonal vaccine for the Northern and Southern Hemispheres.
- Note: Weekly FluWatch publication has resumed.

#### Overall Influenza Summary – Weeks 39 & 40 (September 26 to October 9, 2010)

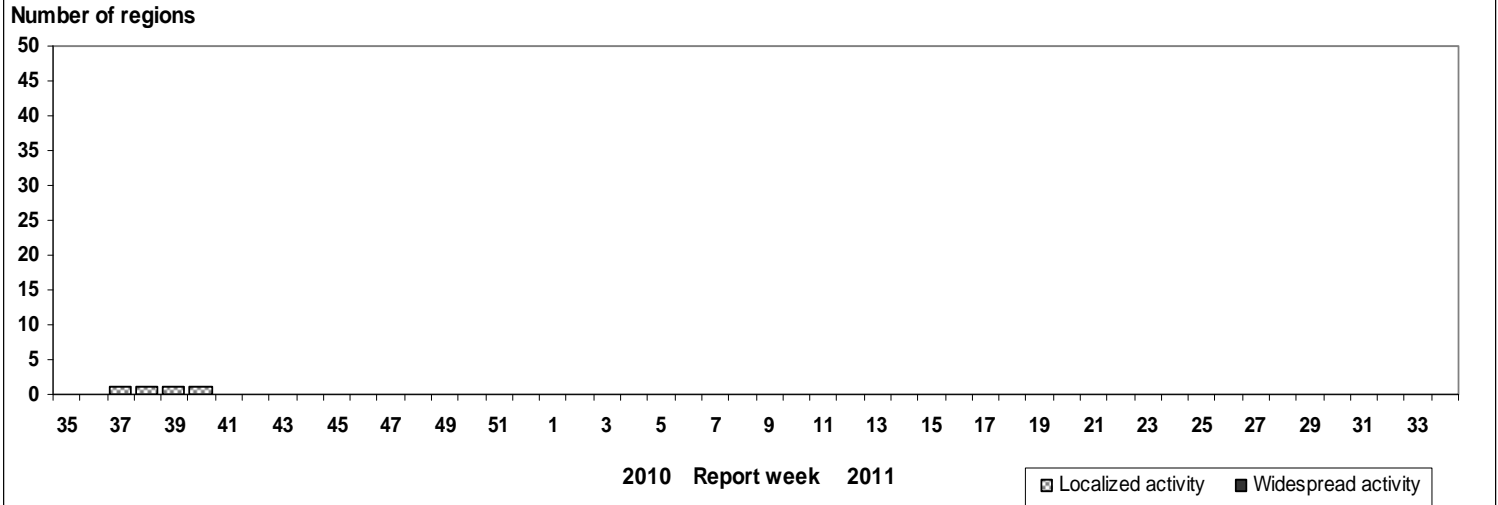
During both weeks 39 & 40, one region reported localized activity in ON. Four regions (in BC, AB, MB & QC) reported sporadic activity during week 39, while three reported sporadic activity in week 40 (in BC, ON & QC) (See Activity level Map). All three regions in SK have stopped reporting for the summer and have not yet resumed. Two new influenza outbreaks were reported during the two-week period; both in ON, in long-term care facilities in two different regions.

Map of overall Influenza activity level by province and territory, Canada, Week 40



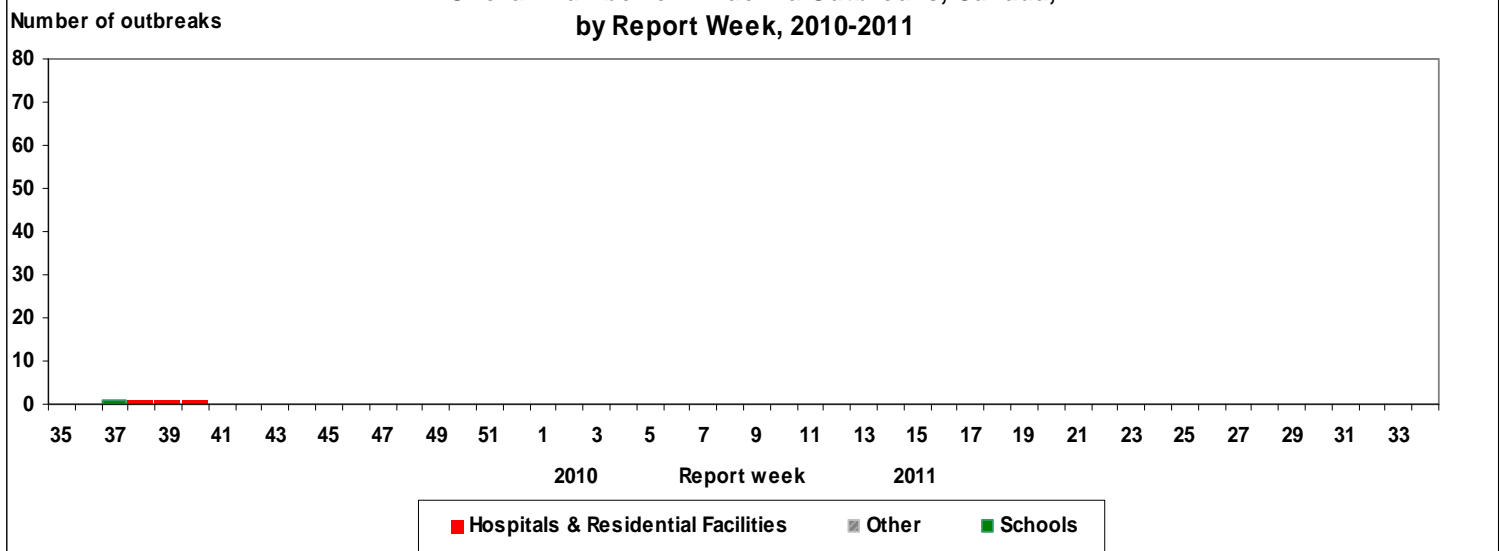
Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and reported outbreaks. Please refer to detailed definitions on the last page. For areas where no data is reported, late reports from these provinces and territories will appear on the FluWatch website.

**Number of influenza surveillance regions† reporting widespread or localized influenza activity, Canada, by report week, 2010-2011 (N=56)**



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

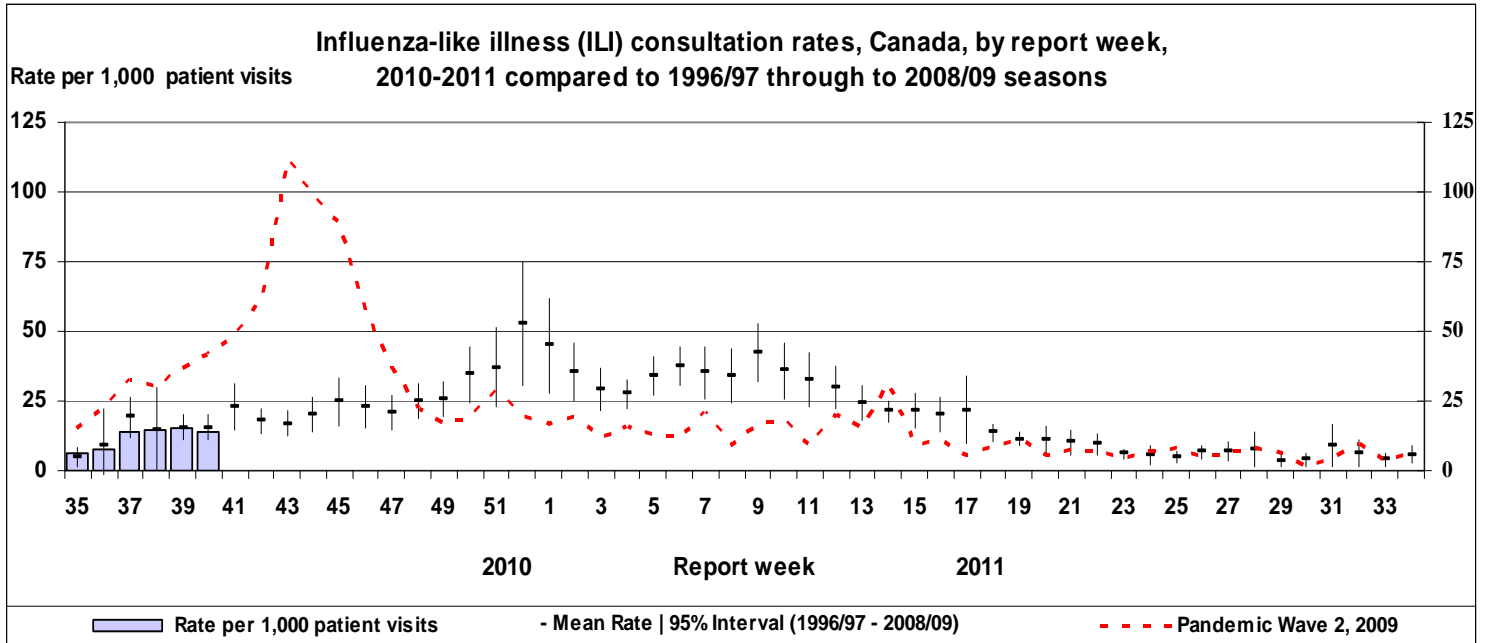
**Overall Number of Influenza Outbreaks, Canada, by Report Week, 2010-2011**



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 weeks 39 and 40, the national ILI consultation rates (15.2 and 13.9 per 1,000 consultations, respectively) remained similar to the previous weeks and were still within expected levels for this time of year (see ILI graph). Children aged under 5 years old had the highest consultation rates for week 39 (28.3 per 1,000 patient visits) while those between 5 and 19 years of age were the most affected during week 40 with a rate of 28.0 per 1,000 patient visits.



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.

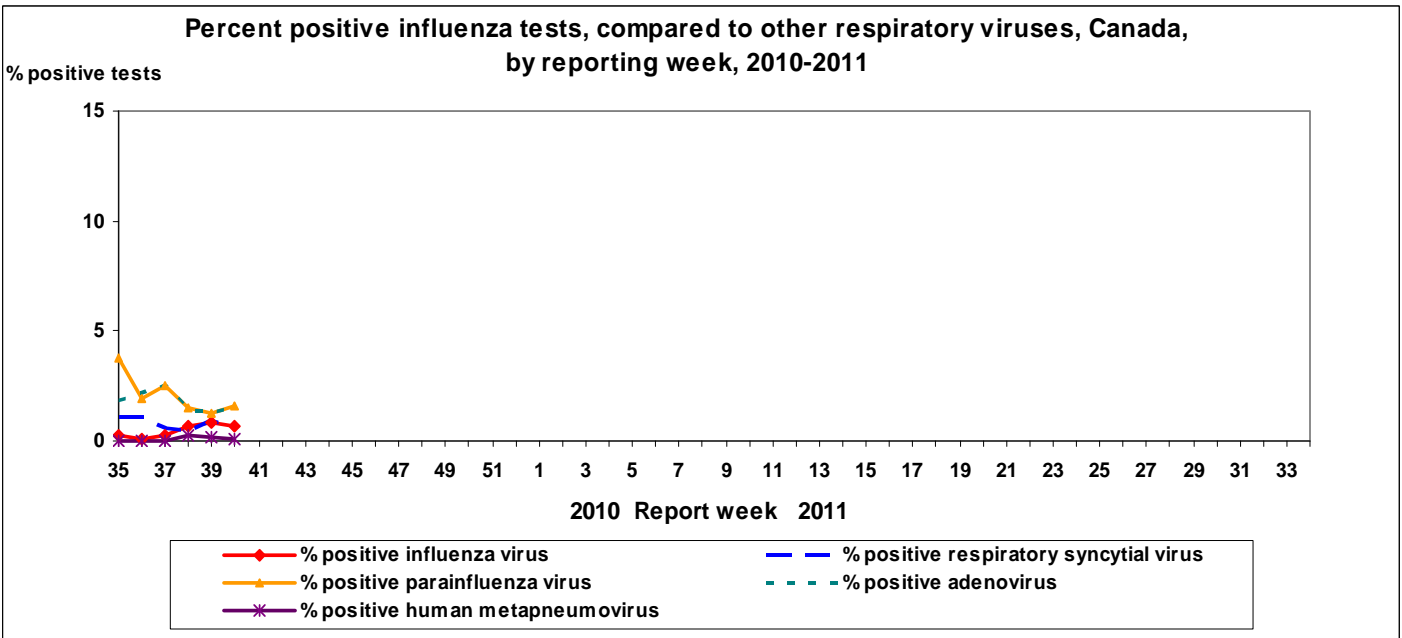
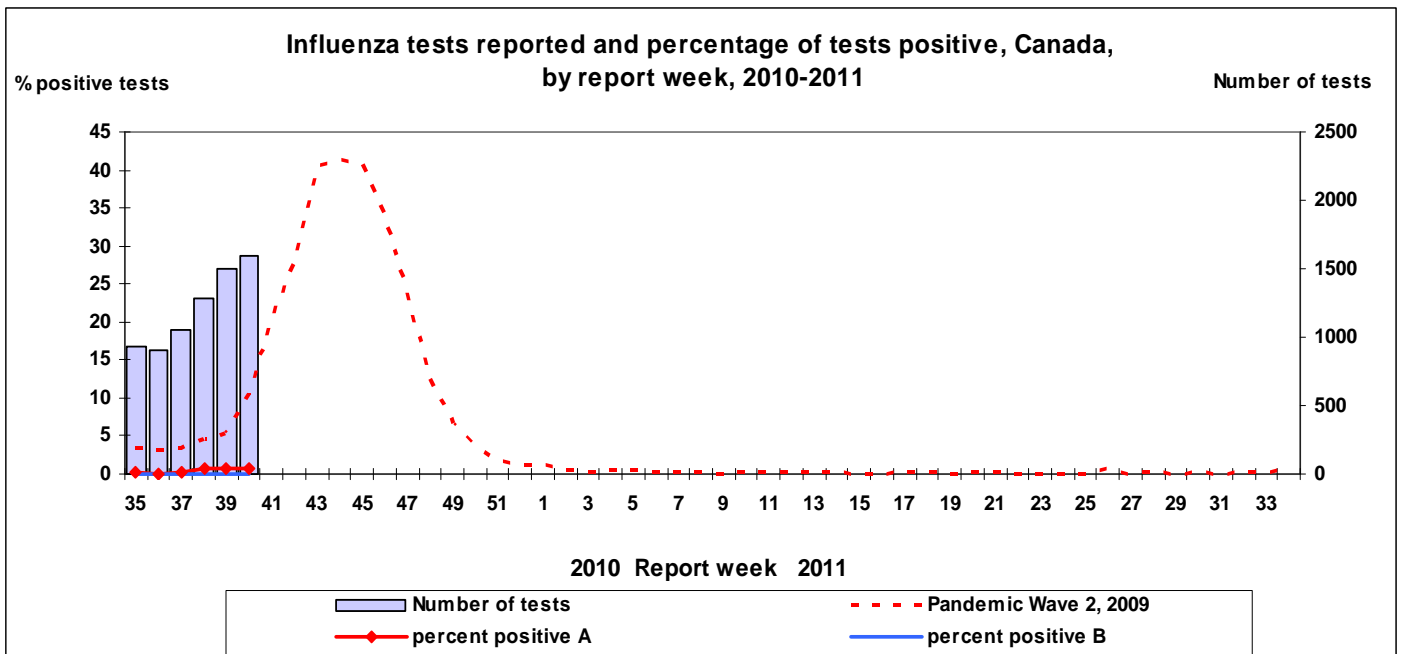
### Laboratory Surveillance Summary

The proportion of tests that were positive for influenza during week 39 was 0.80% (12/1,504) and during week 40 was 0.69% (11/1,601) (see Tests table and Influenza tests graph). The proportion of positive influenza specimens reported during weeks 39-40 (0.74%, 23/3,105) has increased compared to the previous weeks and was higher than what was usually observed at this time of the year but much lower than during H1N1 2009 pandemic. Of the 23 positive specimens, seven specimens were reported as influenza A/H3N2, one as pandemic H1N1 2009 and 15 as unsubtype influenza A. BC, AB, MB and ON were the only provinces to report positive influenza specimens during those reporting weeks. During weeks 39 and 40, low levels of parainfluenza detections (1.3% and 1.6%), adenovirus (1.3% and 1.5%), respiratory syncytial virus (RSV) (0.9% and 0.7%) and human metapneumovirus (0.2% and 0.1%) continue to be reported (See Respiratory viruses graph).

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

Reporting provinces	Bi-Weekly (September 26 to October 9, 2010)						Cumulative (August 29, 2010 to October 9, 2010)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (NS)*		A Total	A(H1)	A(H3)	Pand H1N1	A (NS)*	
BC	6	0	2	0	4	0	6	0	2	0	4	0
AB	2	0	2	0	0	0	7	0	7	0	0	0
SK	0	0	0	0	0	0	0	0	0	0	0	0
MB	1	0	1	0	0	0	1	0	1	0	0	0
ON	14	0	2	1	11	0	21	0	3	1	17	0
QC	0	0	0	0	0	0	1	0	1	0	0	1
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
<b>Canada</b>	<b>23</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>15</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>21</b>	<b>1</b>

\*Not subtyped. 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.



**Canadian situation**

**Paediatric Influenza Hospitalizations and Deaths**

In weeks 39-40, no laboratory-confirmed influenza-associated paediatric (18 years of age and under) hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network.

**Adult Influenza Hospitalizations and Deaths**

During weeks 39 and 40, three new laboratory-confirmed influenza-associated adult (16 years of age and older) hospitalizations were reported through the Canadian Nosocomial Infection Surveillance Program (CNISP) from 21 reporting sites during week 39 and 10 sites during week 40. One patient was reported with influenza A/H3N2, one was positive for pandemic H1N1 2009 and one as untyped influenza A. Of the three cases reported during the two-week period, two were between 65 and 79 and one was between 45 and 64.

**Sale of antivirals (AV)**

During weeks 39 and 40, antiviral prescriptions monitoring results demonstrate increases of antiviral prescriptions at the national level and among several provinces. Daily and weekly antiviral data at the Health Region level demonstrated low antiviral prescription rates among all Health Regions for the report weeks. All the antivirals sold from participating retail pharmacy chains and stores during the past two weeks were Tamiflu except one Relenza. Thus far this fall, respiratory-related over the counter and antiviral trends are similar to those experienced in 2009. Magnitudes this fall compared to last fall however are less, particularly with respect to antivirals.

## **Antigenic Characterization**

Since September 1, 2010, National Microbiology Laboratory (NML) has antigenically characterized seven influenza viruses (6 A/H3N2 from AB, MB, ON & QC, and 1 B virus from QC) that were received from provincial laboratories. The six 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 influenza B virus characterized was antigenically related to B/Brisbane/60/08 (Victoria lineage), which is the recommended influenza B component for the 2010-11 influenza vaccine.

## **Antiviral Resistance**

Since the beginning of the 2010-2011 season, no oseltamivir resistant pandemic H1N1 2009 have been reported. So far this season, the NML has tested 5 influenza A/H3N2 isolates for amantadine resistance and found that all isolates were resistant to amantadine. 7 influenza isolates (6 A/H3N2 and 1 B) were also tested for oseltamivir and zanamivir resistance and found that all isolates were sensitive to both antivirals.

## **International influenza update**

**Reference:** <[http://www.who.int/csr/disease/influenza/2010\\_10\\_08\\_GIP\\_surveillance/en/index.html](http://www.who.int/csr/disease/influenza/2010_10_08_GIP_surveillance/en/index.html)>

## **Global information**

**WHO:** The winter influenza transmission season of the temperate countries of the southern hemisphere is now waning in most areas. In the Northern Hemisphere, influenza activity has been low since the start of the flu season, except in China, which is seeing moderate A/H3N2 circulation. Influenza activity in tropical areas of the world varied and have been discordant in time. While most tropical areas have seen recent peaks in transmission that are now decreasing in intensity, Southeast Asia is currently experiencing increasing levels of influenza activity. The viruses identified in tropical areas have varied even between neighbouring countries and co-circulation of multiple types has commonly been observed. Influenza A/H3N2 was the predominant influenza virus world wide after several weeks of increasing detections in much of the world, but many areas still have active transmission of pandemic H1N1 2009 (pH1N1). Most of the influenza A/H3N2 viruses detected were A/Perth/16/2009-like, which is the strain included in the seasonal vaccine for the Northern and Southern Hemispheres.

## **Geographic update**

### **Northern hemisphere**

**Latin America:** Influenza activity decreased in Central America; the influenza viruses detected have been a mixture of influenza A/H3N2, pandemic H1N1 2009, and influenza type B. Overall, influenza A/H3N2 is the most commonly detected but this is not uniformly true in every country. Among characterized influenza viruses in Costa Rica and Honduras in the last month, the large majority was A/H3N2, while Nicaragua has had predominantly influenza type B. Mexico has detected an increase in ILI and acute respiratory disease (ARI) since August, particularly in the southern part of the country. This activity has coincided with an increased proportion of samples testing positive for influenza, but during September this proportion has again decreased. The majority of positive influenza samples have been influenza A/H3N2 viruses.

**Asia:** In south Asia, data from India indicates that the country-wide outbreak of pH1N1 has peaked and a declining number of laboratory-confirmed cases has been reported the last weeks though activity was still quite high in some areas of the country. Southeast Asia, in contrast, experienced increases in activity in some areas. Cambodia has reported increasing detections of influenza viruses for the last two weeks, with A/H3N2 the most frequent virus detected but with a high number of pH1N1 detections and a few influenza B viruses. Neighbouring Thailand has reported on an increasing number of ILI cases and has experienced local outbreaks of pH1N1. China experienced moderate circulation of influenza A/H3N2 virus with many fewer detections of influenza B.

**United States:** During June 13 to September 25, 2010, influenza A/H3, pandemic H1N1 2009 and influenza B were detected in the United States. Despite the overall low levels of influenza virus circulation throughout the summer in the United States, there have been clusters of A/H3N2 disease, as well as sporadic cases of infection with pandemic H1N1 2009 and influenza B viruses. These outbreaks are typical of sporadic outbreaks of influenza during the summer months. <<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5939a3.htm>>

**Europe:** Very sporadic detections of influenza (8 specimens detected during week 40; 1 A/H3N2, 1 pandemic H1N1, 6 untyped influenza A) virus along with detections of respiratory syncytial virus and adenovirus in a number of European countries suggest that the low influenza-like illness and acute respiratory infection activity currently observed is likely due to respiratory pathogens other than influenza. <[http://ecdc.europa.eu/en/publications/Publications/101015\\_SUR\\_Weekly\\_Influenza\\_Surveillance\\_Overview.pdf](http://ecdc.europa.eu/en/publications/Publications/101015_SUR_Weekly_Influenza_Surveillance_Overview.pdf)>

### **Southern hemisphere**

**Australia:** Australia, which recently experienced a late-season surge of pH1N1, was reporting decreasing activity according to several markers last week, including ILI, hospital and intensive care unit admissions.

**New Zealand:** Rates of ILI activity in New Zealand were below the baseline level for the second week with a low rate of influenza virus detection.

**Chile:** In the southern cone of South America, overall respiratory disease activity decreased, with a mixed picture of influenza viruses. In Chile, the seasonal outbreak arrived at a later time than normal and respiratory disease activity was still high but decreasing, indicating that the peak activity has passed.

**South Africa:** The influenza season in South Africa has peaked and is declining.

**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 Activity levels are defined as:

1 = No activity: i.e. 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 ILI/influenza outbreaks** detected within the influenza surveillance region†

3 = Localized: evidence of increased ILI\* and lab confirmed influenza detection(s) together **with outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region(s)†**

4 = evidence of increased ILI\* and lab confirmed influenza detection(s) **together with 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(s)†**

\* ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.

† Sub-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.