



The overall influenza activity level remain high for this time of the year, but has been decreasing compared to the previous weeks.

- As of 15 July, 2009, all provinces and territories reported a total of 10,156 laboratory-confirmed cases of Pandemic (H1N1) 2009 including 1,115 hospitalizations. Among the hospitalized cases, 156 were admitted to ICU. Forty-five deaths have been reported to the Public Health Agency of Canada (PHAC).
- There was a 21% increase in the reported number of hospitalized Pandemic (H1N1) 2009 cases this week. Since July 8, 2009, eight deaths, one in British Columbia, one in Alberta, one in Manitoba, two in Ontario and three in Quebec were reported this week.

Pandemic (H1N1) 2009 virus Surveillance and Epidemiology

As of 15 July, 2009, all provinces and territories have reported a total of 10,156 laboratory-confirmed cases of Pandemic (H1N1) 2009 virus, of which 1,115 H1N1 cases were admitted to hospital. Cases were distributed similarly between males and females (51.2% for females, 47.4% for males, 1.3% unknown). One-hundred and fifty-one cases have been identified as First-Nations (139 cases in MB and 12 cases in BC), thirty cases as Metis (29 cases in MB and 1 case in BC) and 390 cases are from Nunavut, an area with a predominant Inuit population. Overall the median age of First-Nations cases was similar to that of the rest of Canada (19 years vs. 18 years), However, Inuit cases were significantly younger with a median age of 9 years.

Core data was available for 954 (85.6%) hospitalizations. The median age of hospitalized cases was 21 years (range <1 to 97 years). 352 (36.9%) hospitalized cases had at least one underlying medical conditions : chronic heart disease (51 cases), diabetes (75 cases), kidney disease (26 cases), immuno-suppression (56 cases), lung disease including asthma (138 cases). Eighteen (81.8%) of the 22 pregnant women affected were hospitalized. 156 (17.9%) of the hospitalized cases were reported to have been admitted to the intensive care unit (ICU). Slightly more females were admitted to ICU (50.6% for females, 44.2% for males, 5.1% unknown). The median age of cases admitted to ICU was 31 years (range <1 to 82 years). Fifty-four (34.6%) ICU patients had at least one underlying medical conditions. Three women admitted to ICU were pregnant.

As of July 15, 2009, core data was available fo 38 (84.4%) deaths. The median age was 44 (range <1 to 82) and 55.3% were females. Among these deaths, 15 (39.5%) cases had at least on underlying medical conditions and 1 (2.6%) was pregnant.

Weekly and cumulative numbers of hospitalizations and deaths among Pandemic (H1N1) 2009 confirmed cases, Canada, to 15 July 2009

Province/ Territory	This week (9-15 June, 2009) hospitalized cases	This week (9-15 June, 2009) deaths	Cumulative hospitalized cases	Cumulative deaths
BC	7	1	14	1
AB	26	1	87	3
SK	0	0	11	3
MB	107*	1	201	6
ON	32	2	266	15
QC	62	3	488	17
NB	0	0	1	0
NS	2	0	8	0
PE	1	0	1	0
NL	0	0	0	0
YT	0	0	0	0
NT	0	0	0	0
NU	0	0	38	0
Canada	130	8	1115	45

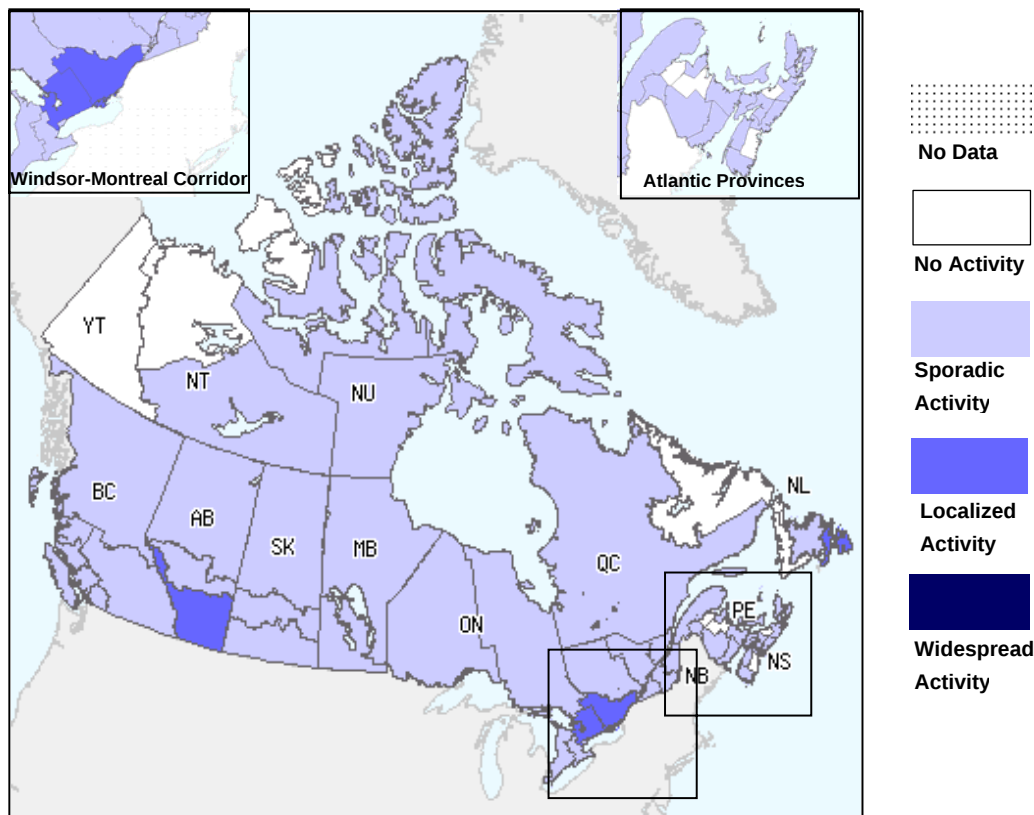
* Manitoba informed PHAC that the calculation of the hospitalized cases has changed; it will now include discharges and deaths. This explain the high number re

Overall Influenza Summary - Week 27 (July 5, 2009 to July 11, 2009)

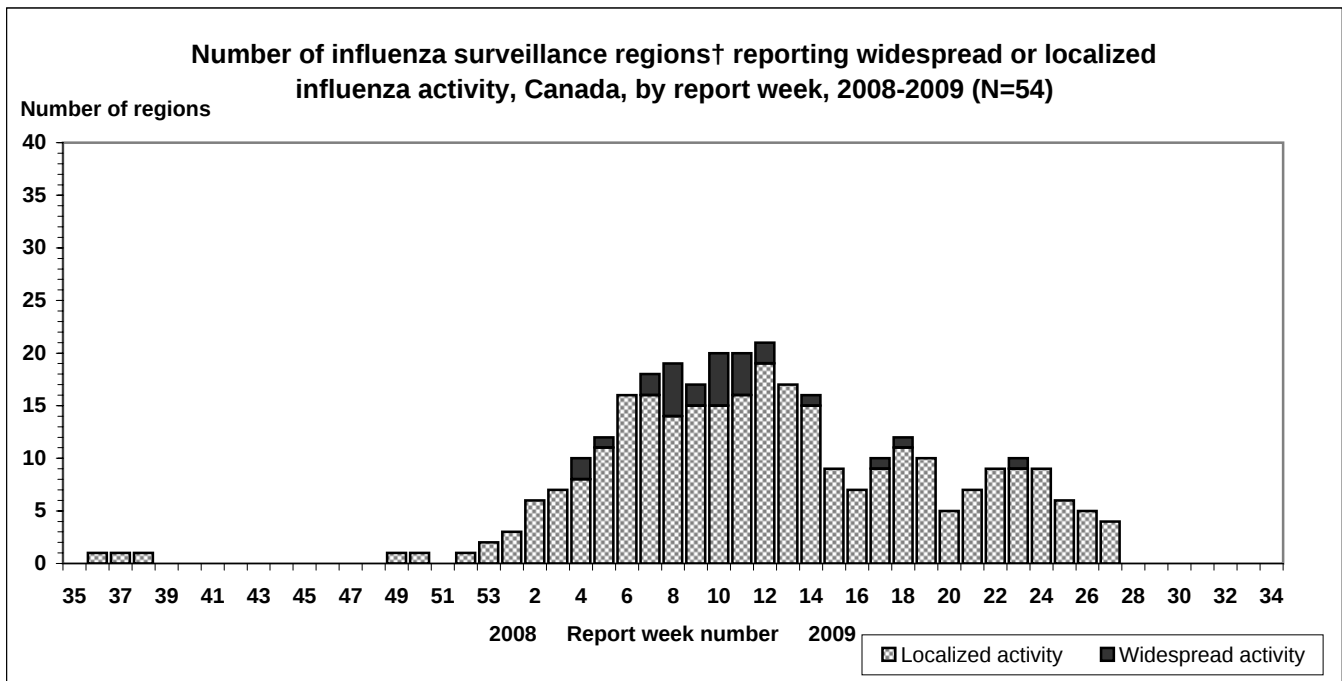
During week 27, ILI consultations rates (21 consultations per 1,000 visits) and proportion of influenza positive tests (13.4%) are still higher than expected for this time of the year, but are decreasing relative to the previous weeks.

Four regions in AB, ON & NF reported localized activity, 42 regions sporadic activity in BC, AB, SK, MB, ON, QC, NB, NS, PEI, NF, NT & NU and 8 regions in NB, NS, NL, YK & NT reported no activity. Four new influenza outbreaks were reported this week; one in hospital (NL), one in long-term care facilities (NS) and two occurred in unspecified locations (ON). Despite few reports of localized activity, no influenza outbreak was reported in LTCF in those regions.

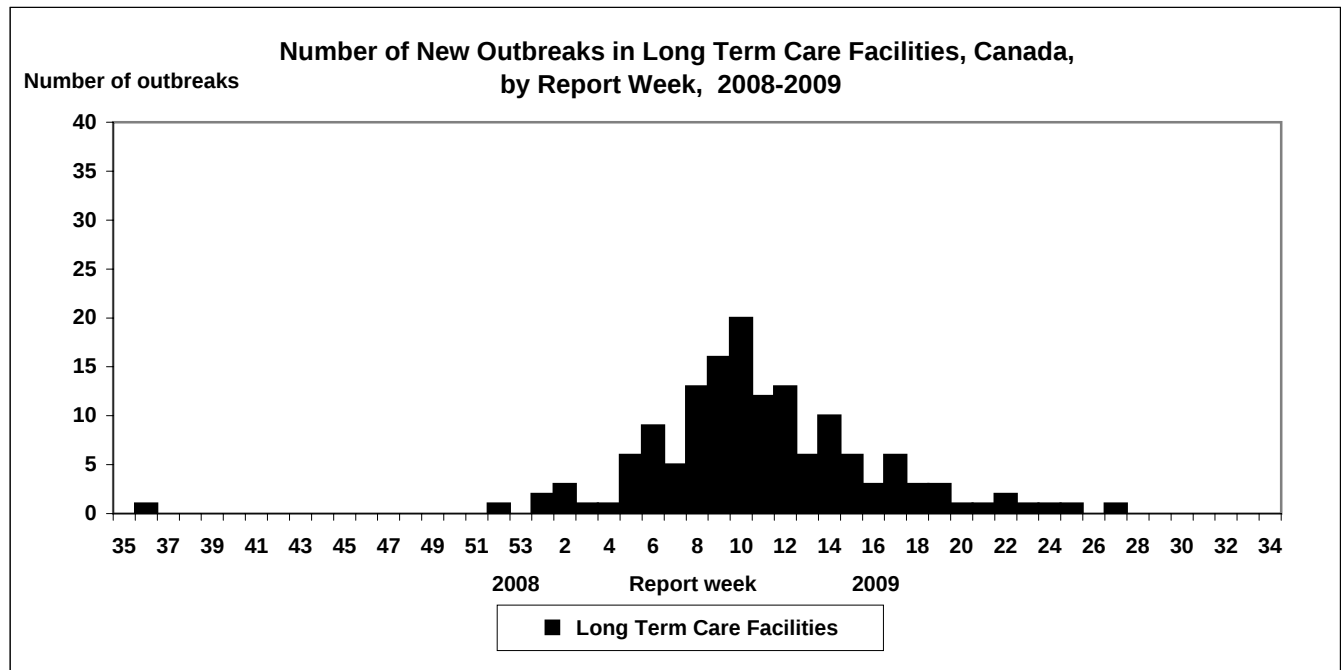
**Map of overall Influenza activity level by provinces and territories,
week 27, Canada**



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.

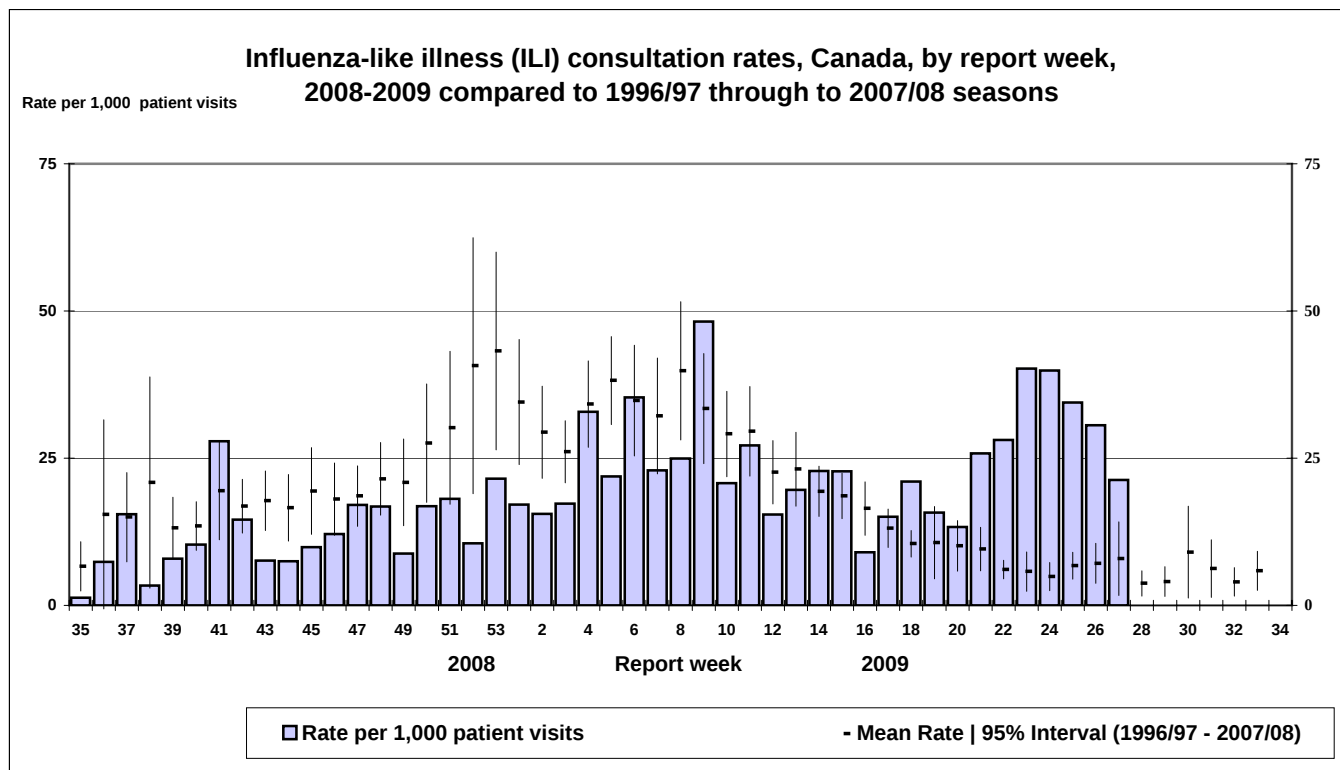


† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.



ILI consultation rate

This week, the ILI consultation rate was 21 consultations per 1,000 patient visits (see ILI graph) which represents a decrease compared to the previous weeks. The sentinel response rate was 80%.



Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons).

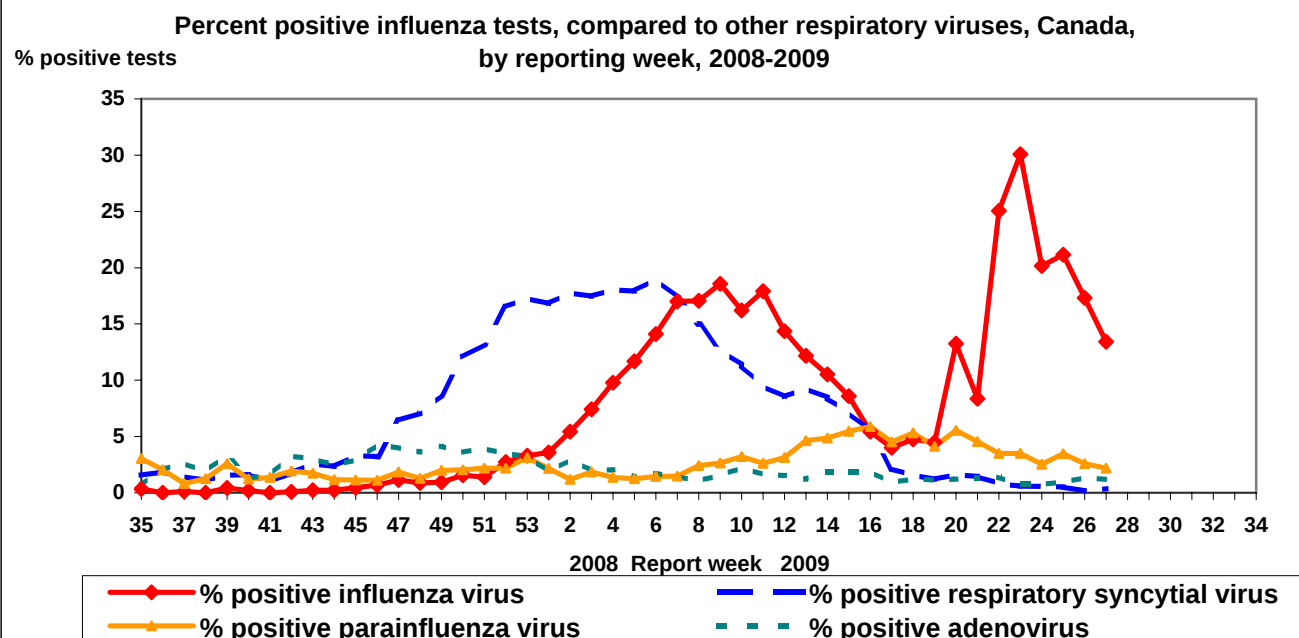
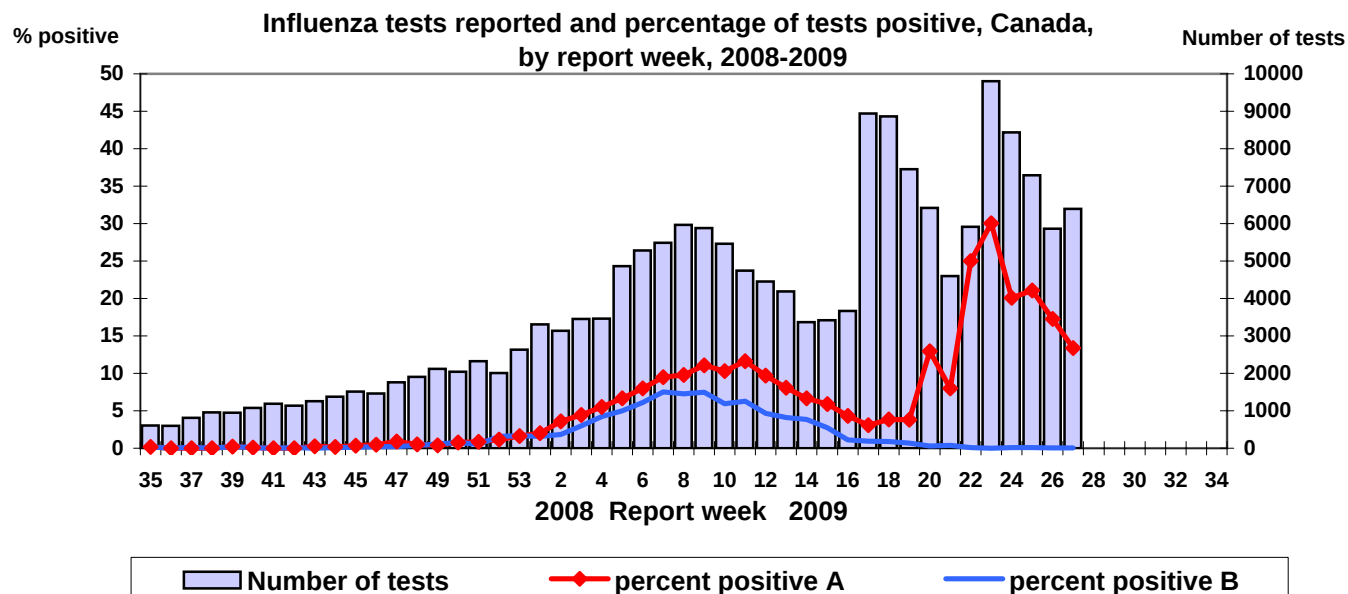
*Data arriving late may cause variations from results seen in previous weeks.

Paediatric Influenza Hospitalizations and deaths

In week 27, 10 laboratory-confirmed influenza-associated paediatric hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network. 60% of this week hospitalizations are due to Pandemic (H1N1) 2009. To date this season, 710 hospitalizations have been reported; 260 (36.6%) of hospitalizations have been due to Pandemic (H1N1) 2009. The proportion of cases to date by age group are as follows: 13.7% were 0-5 month olds; 25.2% were 6-23 month olds; 22.0% were 2-4 year olds; 19.3% were 5-9 year olds; and 19.9% were 10-16 year olds. There were four deaths reported so far this season including two deaths due to Pandemic (H1N1) 2009.

Laboratory Surveillance Summary

This week, the proportion of tests that were positive for influenza was 13.4% which is decreasing compared to previous weeks (see table). The majority (81.6%) of influenza virus detections this season have been for influenza A. A total of 864 specimen tested positive for influenza this week (862 A and 2 B). Of the 453 influenza A subtyped, 95.1% were due to Pandemic (H1N1) 2009 and 4.9% to A(H3) virus.



Weekly & Cumulative numbers of positive influenza specimens by Provincial Laboratories

Reporting provinces	Weekly						Cumulative					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand (H1N1)	A (NS)*	Total	A Total	A(H1)	A(H3)	Pand (H1N1)	A (NS)*	Total
BC	70	0	1	61	8	0	1217	9	9	250	949	210
AB	256	0	0	68	188	0	2846	0	8	420	2418	467
SK	54	0	0	47	7	0	1314	29	78	794	413	219
MB	53	0	0	53	0	0	1011	7	35	713	256	37
ON	230	0	21	79	130	1	6314	144	156	2840	3174	1354
QC	64	0	0	0	64	1	3748	0	0	0	3748	1416
NB	18	0	0	18	0	0	303	3	3	22	275	95
NS	111	0	0	99	12	0	322	23	23	207	69	60
PE	0	0	0	0	0	0	26	5	0	7	14	9
NL	6	0	0	6	0	0	171	11	4	33	123	26
Canada	862	0	22	431	409	2	17272	231	316	5286	11439	3893

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.

* Not subtyped

Antigenic Characterization

Since 1 September 2008, the NML has antigenically characterized 979 influenza viruses: 243 influenza A/Brisbane/59/2007(H1N1)-like, 168 influenza A/Brisbane/10/2007(H3N2)-like, 11 influenza B/Florida/4/2006-like, 178 B/Brisbane/60/2008-like and 379 B/Malaysia/2506/2004-like. A/Brisbane/59/2007(H1N1), A/Brisbane/10/2007(H3N2) and B/Florida/04/2006 are the influenza A and influenza B components recommended for the 2008-09 influenza vaccine. NML has antigenically characterized 175 Pandemic (H1N1) 2009 isolates by HI assay. The results reveal that these viruses are antigenically related to A/California/7/2009 (H1N1), which is the variant reference virus selected by WHO as a potential candidate for Pandemic (H1N1) 2009 vaccine. Antigenic characterization also indicates that these viruses are antigenically and genetically unrelated to seasonal influenza A (H1N1) viruses, which suggests that there is little or no protection to be expected from vaccination with seasonal influenza vaccine.

Antiviral Resistance (from NML)

All Pandemic (H1N1) 2009 viruses tested so far have been sensitive to oseltamivir (255 samples) and zanamivir (100 samples) but resistant to amantadine (283 samples).

Oseltamivir: 304/305 seasonal A/H1N1 isolates were resistant (99.7%). Zanamivir: 242/242 seasonal A/H1N1 isolates tested were sensitive (0%). Adamantanes: 306/306 seasonal A/H3N2 isolates were resistant to amantadine (100%).

International update

Vaccine - WHO recommendations on pandemic (H1N1) 2009 vaccines

On 7 July 2009, the Strategic Advisory Group of Experts (SAGE) on Immunization made recommendations related to vaccine for the Pandemic (H1N1) 2009. These include: 1) Immunization of health-care workers as a first priority, 2) the importance of high-quality post-marketing surveillance and vaccine effectiveness studies, 3) promoting vaccines such as those with oil-in-water adjuvants and live attenuated influenza. WHO also reported that vaccine manufacturers growing the candidate Pandemic (H1N1) 2009 vaccine viruses are getting relatively poor yields—only about 25% to 50% as much antigen as with seasonal H1N1 vaccine viruses. That suggests it may take longer for manufacturers to fulfill their existing vaccine contracts.

Southern Hemisphere

Australia : As of July 15th, 2009, Australia has 10,389 confirmed cases and 21 deaths. There are currently 91 people in hospital across Australia with Pandemic (H1N1) 2009, and 58 of these are in intensive care units (total hospitalizations 1,095). Most recent data on routine influenza surveillance is only for the period of May 30 to June 16, 2009

New Zealand: As of July 15th, 2009, the total number of confirmed cases in New Zealand is 2,025, and 9 deaths. On July 14th a total of 113 people were reported to be in hospital with the Pandemic (H1N1) influenza or its complications, 23 of whom were in intensive care. Weekly consultation rates for influenza-like illness (ILI) in New Zealand continue to increase, and are nearly three times higher than the winter peak experienced in the last two years. In the week ending July 5th, New Zealand reported 683 influenza virus detections: 64% Pandemic (H1N1), 30% influenza A (unsubtyped), 5% seasonal A(H1N1), and <1% A(H3N2).

South Africa: As of July 14th, South Africa reported a total of 93 cases of Pandemic (H1N1) 2009. The majority have been mild cases, 2 cases with pneumonia have recovered. For the week ending July 5th, influenza detections from both routine surveillance and special studies in South Africa showed 89% A(H3N2) and 4% Pandemic (H1N1) influenza. <<http://www.nicd.ac.za/>> <<http://www.doh.gov.za/swineflu/swineflu-f.html>>

Argentina: As of July 14th, a total of 3,056 cases of Pandemic (H1N1) 2009, and 137 deaths have been reported.

Chile: As of July 14th, the number of cases increased to 10,491, 5.4% of cases have been hospitalized, and 33 have died.

Brazil: As of July 8th, 2009, the Ministry of Health reported a total of 1,027 confirmed cases of Pandemic (H1N1) 2009 and 2 deaths. Of cases where epidemiological information is available, 50% of cases are under the age of 25 years, ranging from <1 to 85 years; 99.6% (973/977) developed mild illness and 0.4% (4 / 977) severe; 91.1% of cases resolved, 0.1% died, and 8.8% are ongoing.

Ecuador: Ecuador is currently reporting 264 confirmed cases of Pandemic (H1N1) 2009 and three deaths.

Northern Hemisphere

Japan: As of July 15th, 2009, Japan reports 3,124 confirmed cases of Pandemic (H1N1) 2009 and no deaths.

United States: As of July 10th, 2009, 37,246 confirmed and probable infections with novel influenza A (H1N1) virus and 211 deaths. During week 26 (June 28-July 4, 2009), seasonal influenza A (H1), A (H3), and B viruses co-circulated at low levels with novel influenza A (H1N1) viruses. Over 97% of all subtyped influenza A viruses being reported to CDC this week were novel influenza A (H1N1) viruses.

United Kingdom: As of July 8th, 2009, the United Kingdom has reported a total of 9,718 laboratory-confirmed cases. Physician consultation rates in England for individuals presenting with flu-like illness show increased rates, and are now above the threshold level for normal seasonal flu activity. There has been a reduction in the number of laboratory confirmed cases as physicians move towards clinical diagnoses. All 14 deaths in England to July 9th have had underlying risk factors.

FluWatch reports include data and information from five main sources: laboratory reports of positive influenza tests in Canada; sentinel physician reporting of influenza-like illness (ILI); provincial/territorial assessment of influenza activity based on various indicators, including laboratory surveillance, ILI reporting, school and work site absenteeism, and outbreaks; influenza-associated pediatric hospitalizations; WHO and other international reports of influenza activity.

The map shows influenza activity in the “influenza surveillance regions” † within each jurisdiction, as determined by the provincial/territorial epidemiologists.

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 2008-2009 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 could be due to influenza virus. 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 2008-2009 season

Schools and work sites: greater than 10% absenteeism on any day most likely due to ILI

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.

Influenza Activity levels are defined as:

1 = No activity: i.e. no laboratory-confirmed influenza detections during the past four weeks, however, sporadically occurring ILI may be reported

2 = Sporadic: sporadically occurring ILI and lab confirmed influenza* with NO outbreaks detected within the influenza surveillance region†

3 = Localized: sporadically occurring ILI and lab confirmed influenza* together with outbreaks of ILI in schools and worksites or laboratory confirmed influenza in residential institutions occurring in less than 50% of the influenza surveillance region(s)†

4 = Widespread: sporadically occurring ILI and lab confirmed influenza* together with outbreaks of ILI in schools and worksites or laboratory confirmed influenza in residential institutions occurring in greater than or equal to 50% of the influenza surveillance region(s)†

* confirmation of influenza within the surveillance region at any time within the prior four weeks

† 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) 952-8484