The overall influenza activity level remain high for this time of the year, but has been decreasing in week 26, for the third consecutive week.

• As of 8 July, 2009, all provinces and territories reported a total of 9,414 laboratory-confirmed cases of Pandemic (H1N1) 2009 including 878 hospitalizations and 37 deaths to the Public Health Agency of Canada (PHAC). While transmission continues to increase, the majority of illness has been mild thus far.

• There was almost a 25% increase in the reported number of hospitalized Pandemic (H1N1) 2009 cases this week. Based on a proportion of hospitalized cases for whom the information was provided, 80% of the cases had one or more underlying medical conditions. Since July 3, 2009, eight deaths, one in Alberta, one in Saskatchewan, one in Manitoba, three in Ontario and two in Quebec were reported this week.

• On July 5, 2009, a new reassortant influenza virus has been identified in 2 seasonal hog farm workers from Saskatchewan. The reassortant influenza virus is comprised of genes derived from the North American triple reassortant swine influenza A virus, first identified in Canada in 2005, and the current seasonal human H1N1 virus. This reassortment has never been identified before.

Pandemic (H1N1) 2009 virus Surveillance and Epidemiology

As of 8 July, 2009, all provinces and territories have reported a total of 9,414 laboratory-confirmed cases of Pandemic H1N1 2009 virus, of which 878 H1N1 cases were admitted to hospital. Cases were distributed similarly between males and females (52% for females, 47.8% for males, 0.2% unknown). One-hundred and fifty-one cases have been identified as First-Nations (139 cases in MB and 12 cases in BC) and 372 cases are from Nunavut, an area with a predominant Inuit population.

Core data was available for 721 (82.1%) hospitalizations. The median age of hospitalized cases was 19.5 years range (range <1 to 97 years). 129 (17.9%) of the hospitalized cases were reported to have been admitted to the intensive care unit (ICU). Information on underlying conditions was available from 291 cases of which 80.4% had one or more underlying medical condition: chronic heart disease (49 cases), diabetes (68 cases), kidney disease (23 cases), immuno-suppression (50 cases), lung disease (131 cases). Fourteen women were pregnant while infected.

Weekly and cumulative numbers of hospitalizations and deaths among H1N1 flu virus confirmed cases, Canada, to 8 July 2009

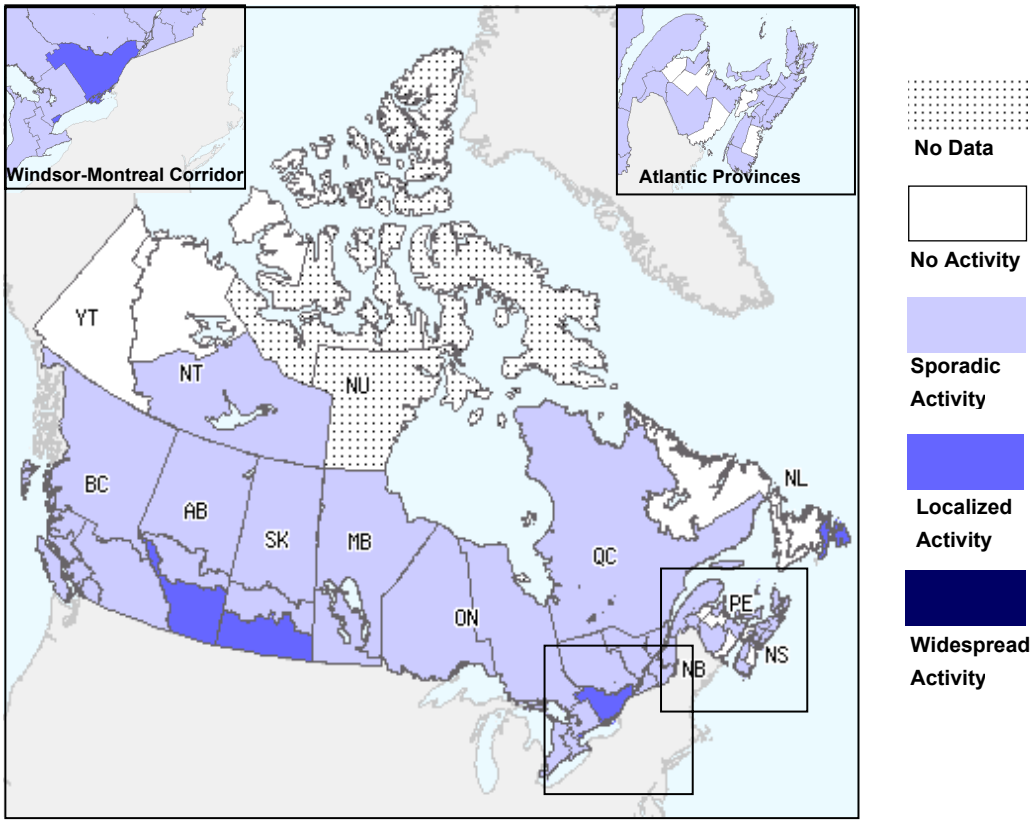
Province/ Territory	This week (3-8 July, 2009) hospitalized cases	This week (3-8 July, 2009) deaths	Cumulative hospitalized cases	Cumulative deaths
BC	0	0	7	0
AB	16	1	61	2
SK	1	1	11	3
MB	9	1	94	5
ON	72	3	234	13
QC	112	2	426	14
NB	1	0	1	0
NS	1	0	6	0
PE	0	0	0	0
NL	0	0	0	0
YT	0	0	0	0
NT	0	0	0	0
NU	2	0	38	0
Canada	214	8	878	37

Overall Influenza Summary - Week 26 (June 28, 2009 to July 4, 2009)

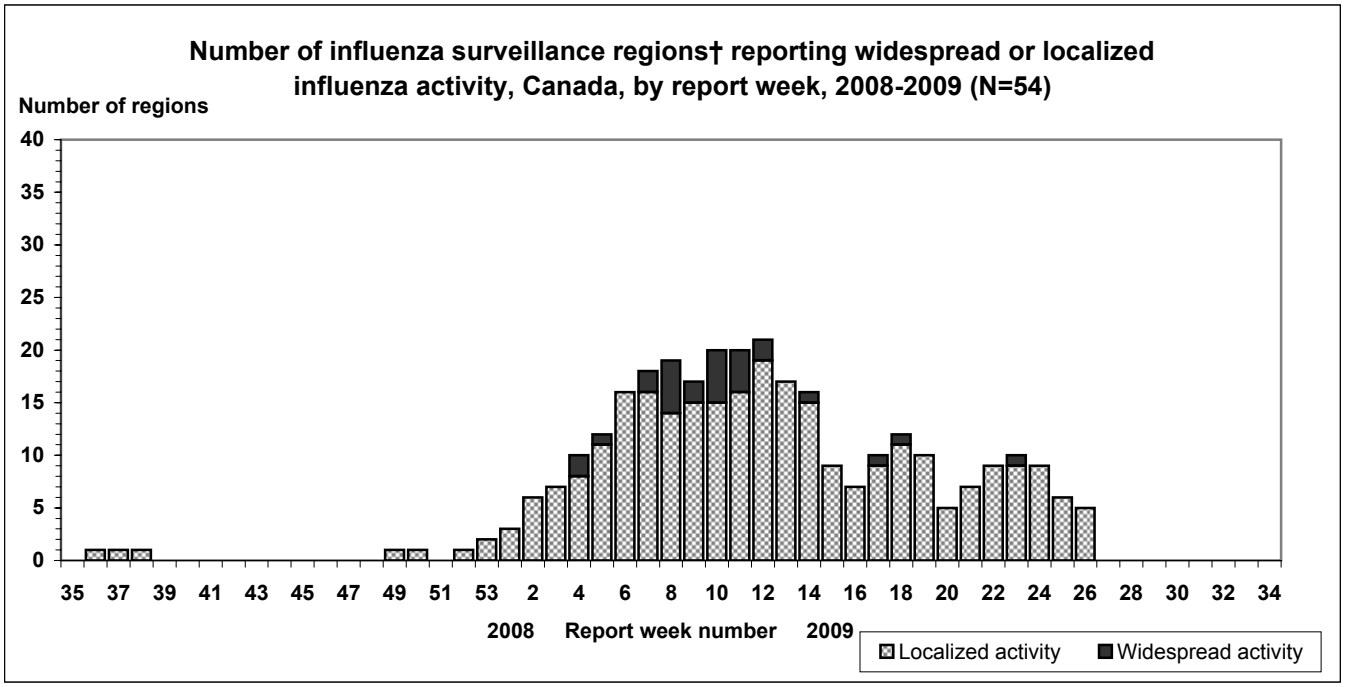
During week 26, ILI consultations rates (29 consultations per 1,000 visits) and proportion of influenza positive tests (16.0%) are still higher than expected for this time of the year, but are decreasing compared to the previous weeks.

Five regions in AB, SK, ON & NF reported localized activity, 36 regions sporadic activity in BC, AB, SK, MB, ON, QC, NB, NS, PEI & NT and 10 regions in NB, NS, NL, YK & NT reported no activity (no report received from NU). Two new influenza outbreaks were reported this week in hospitals (1 in AB, 1 in NL). Despite few reports of localized activity, no influenza outbreak was reported in Long-term care facilities.

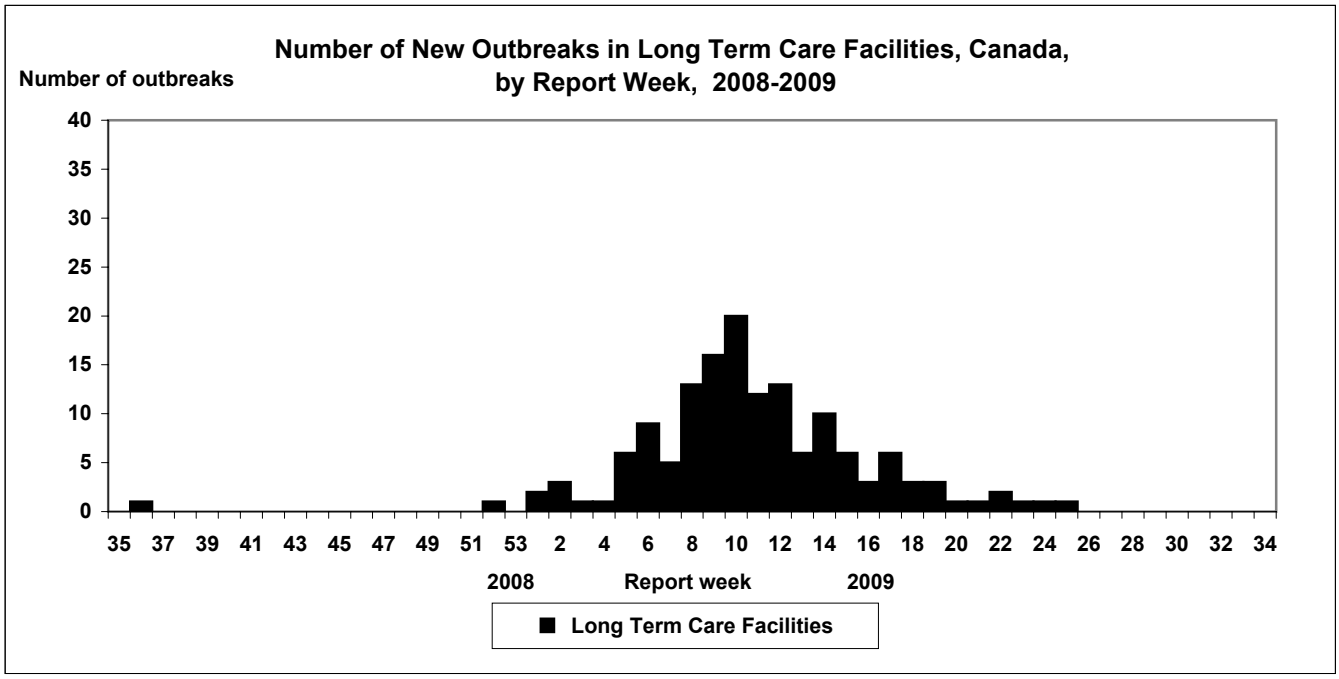
Map of overall Influenza activity level by provinces and territories, week 26, Canada



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.

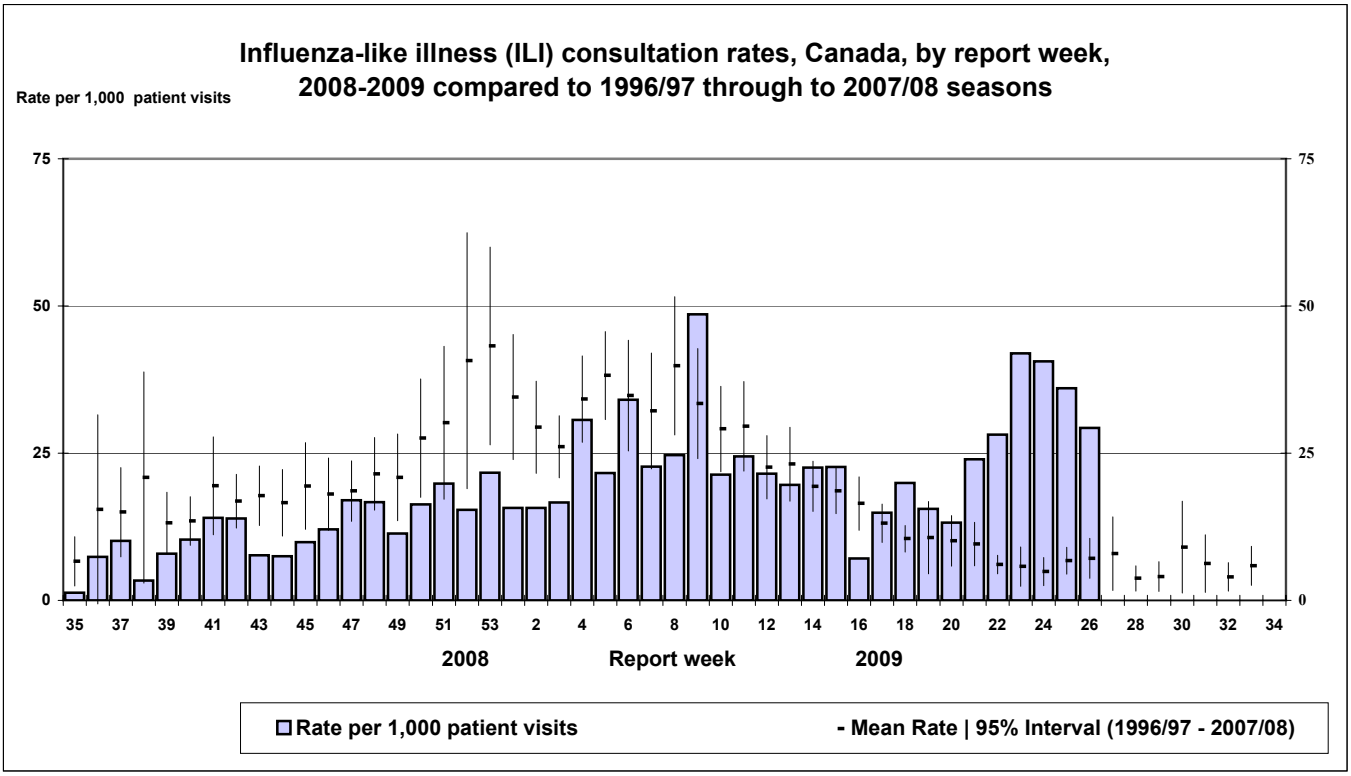


† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.



ILI consultation rate

This week, the ILI consultation rate was 29 consultations per 1,000 patient visits (see ILI graph) which represents a slight decrease relative to the three previous weeks. The sentinel response rate was 75%.



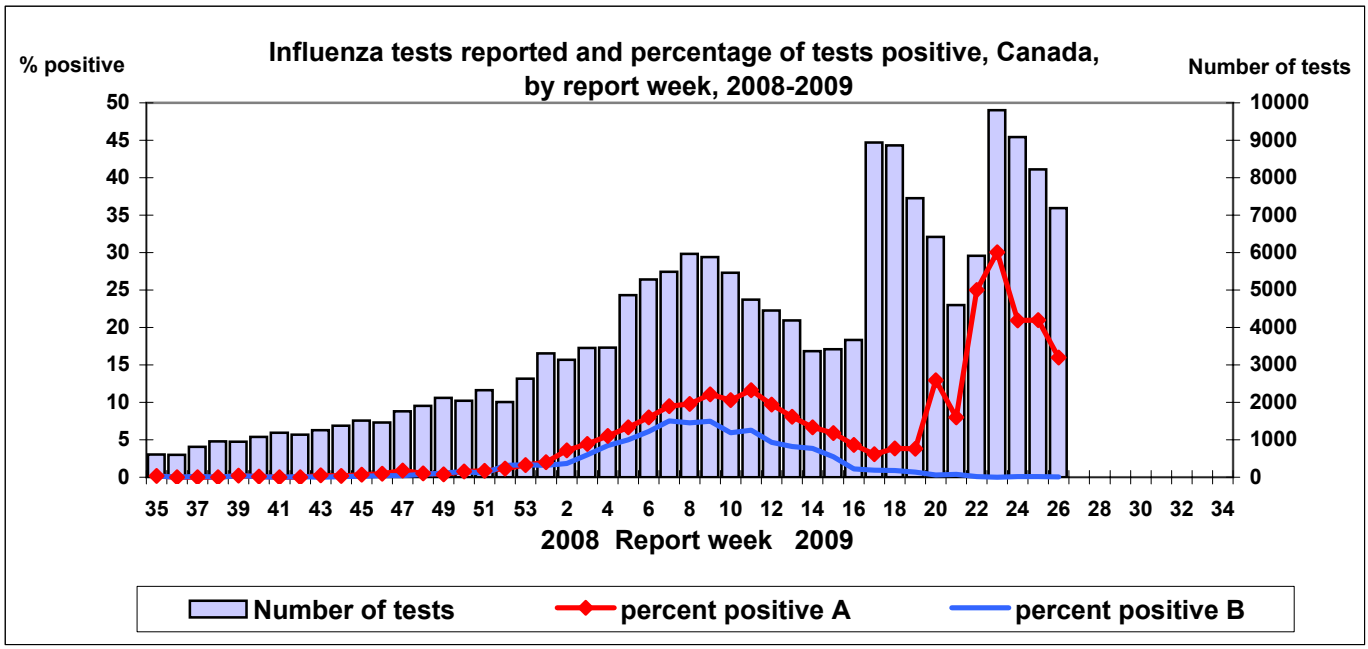
Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons).

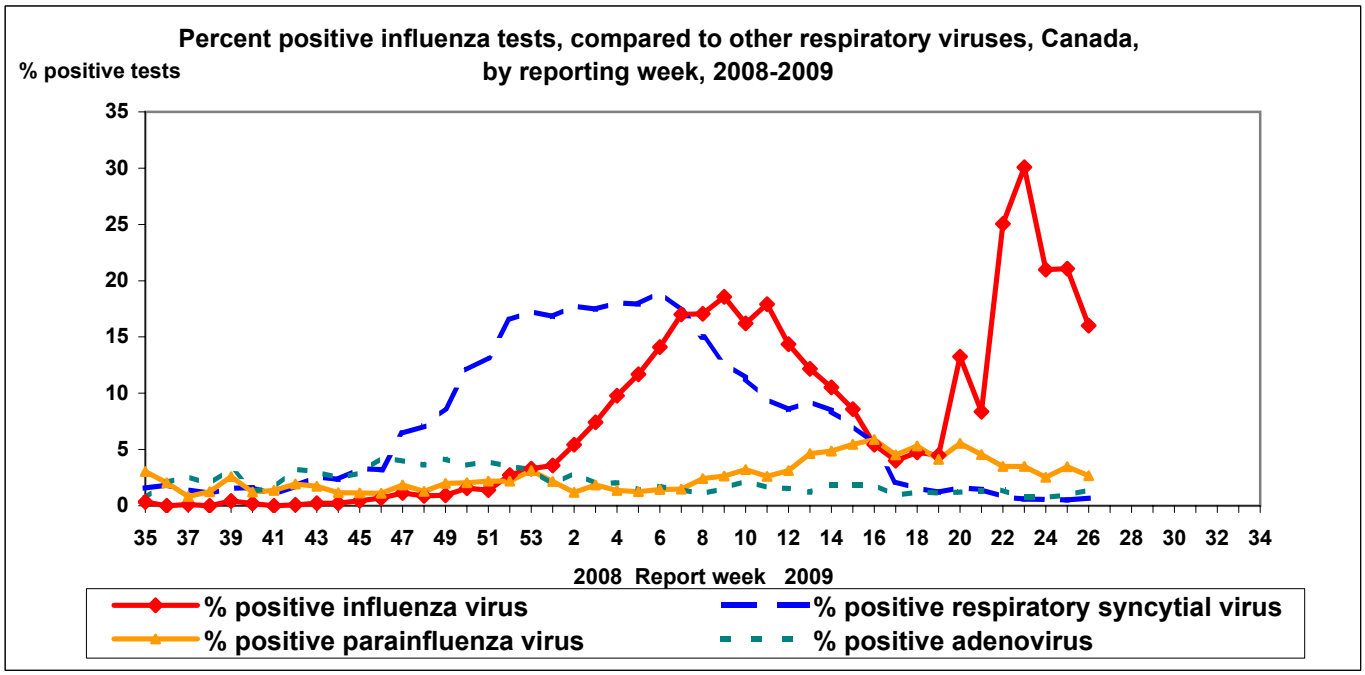
Paediatric Influenza Hospitalizations and deaths

In week 26, nineteen laboratory-confirmed influenza-associated paediatric hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network. To date this season, 690 hospitalizations have been reported; 227 (32.9%) of hospitalizations have been due to Pandemic (H1N1) 2009. The proportion of cases to date by age group are as follows: 13.5% were 0-5 month olds; 25.7% were 6-23 month olds; 21.9% were 2-4 year olds; 18.8% were 5-9 year olds; and 20.1% were 10-16 year olds. 54.2% of children between 5-16 years old are affected by Pandemic (H1N1) 2009 compared to 38.9% of same age children with seasonal influenza.

Laboratory Surveillance Summary

This week, the proportion of tests that were positive for influenza was 16.0% which is decreasing compared to previous weeks (see table). The majority (81.3%) of influenza virus detections this season have been for influenza A. 99.7% of influenza virus detections this week have been for influenza A likely due to the H1N1 flu virus.





Weekly & Cummulative 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	38	0	1	12	25	0	1109	9	7	164	929	210
AB	392	0	0	121	271	1	2590	0	8	352	2230	467
SK	97	1	0	74	22	0	1260	29	78	747	406	219
MB	108	0	0	107	1	0	958	7	35	660	256	37
ON	328	0	1	190	137	2	6609	144	137	3284	3044	1353
QC	125	0	0	0	125	0	3729	0	0	0	3729	1415
NB	4	0	0	0	4	0	285	3	3	4	275	95
NS	44	0	0	44	0	0	211	23	23	108	57	60
PE	9	2	0	7	0	0	26	5	0	7	14	9
NL	4	0	0	4	0	0	165	11	4	27	123	26
Canada	1149	3	2	559	585	3	16942	231	295	5353	11063	3891

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

As of 9 July, 2009, the NML tested 679 specimens for influenza H1N1 Flu Virus and 380 were positive. Positive samples were from AB, SK, MB, ON, QC, NB, NS, PEI and NL. *Provincial labs are also doing their own confirmation using RT-PCR.

On July 5, 2009, the Saskatchewan health authorities were informed by the National Microbiology Laboratory that a new reassortant influenza virus has been confirmed in 2 seasonal hog farm workers.Both worked for the same swine operation. The workers had mild illness around mid-June and were tested on June 18, 2009. Both have recovered since and are back to work. Mild respiratory illness has been detected in less than 1% of the affected herd. Results of swab testing from the animals are pending. The affected farm is part of a large operation which operates as a closed system. The reassortant influenza virus is comprised of genes derived from the North American triple reassortant swine influenza A virus, first identified in 2005, and the current seasonal human H1N1 virus. This reassortment has never been identified before.

Antiviral Resistance (from NML)

Oseltamivir: 303/304 seasonal A/H1N1 isolates were resistant (99.7%). Zanamivir: All seasonal A/H1N1 isolates tested were sensitive (0%). Adamantanes: 305/305 seasonal A/H3N2 isolates were resistant to amantadine (100%).
All Pandemic H1N1 2009 viruses tested so far have been sensitive to oseltamivir (208 samples) and zanamivir (91 samples) but resistant to amantadine (208 samples).

International update

Antiviral Resistance

Three cases of Pandemic A(H1N1) 2009 with resistance to oseltamivir have now been identified. The first 2 cases, reported from Denmark and Japan, involved people who had been taking oseltamivir for prophylaxis treatment. However, the oseltamivir-resistant A(H1N1) virus detected in Hong Kong was isolated from a case who was neither prophylaxed nor treated with oseltamivir.

Southern Hemisphere

Australia : As of July 9th, 2009, Australia has 7,290 confirmed cases (an increase of 523 cases since July 8th), and 18 deaths. The 5 most recent deaths were in patients reported to have underlying conditions. There are currently 121 people in hospital and 38 (31.4%) of these are in intensive care units. As of June 16th, influenza surveillance in Australia reported that 80% of the first 1,877 confirmed cases occurring in people under the age of 30. The median age for hospitalized cases is higher (36) than for all confirmed cases (16), indicating that the more severe cases are in the older age groups.
New Zealand: As of July 9th, 2009, the total number of confirmed cases in New Zealand is 1431 and 6 deaths.
South Africa: As of July 8th, South Africa reported a total of 47 cases of Pandemic A(H1N1) 2009. No community transmission has been confirmed. Seasonal influenza surveillance to June 28th, shows that 92.8% (982/1058) of subtyped influenza isolates were A(H3N2). <http://www.nicd.ac.za/>
Argentina: As of July 5th, a total of 2,485 cases (1,870 in Buenos Aires or the capital region) and 60 deaths have been reported (49 in Buenos Aires or the capital region). Schools across the country have been encouraged to close for extended winter holidays in order to prevent the spread of influenza. In the ongoing investigation of Pandemic A(H1N1) 2009 influenza detected in pigs near Buenos Aires, no further illness has been observed on the affected farm or those in the surveillance area since June 24th.
Chile: As of July 7th, the number of cases increased to 9,135 and 19 deaths. Twelve (63%) of deaths had underlying conditions. The most affected by Pandemic A(H1N1) 2009 are children. Chile's health ministry recently cancelled a large religious festival, which typically brings 200,000 visitors in Southern Chile. [CIDRAP]

Northern Hemisphere

Japan: As of July 9th, 2009, Japan has 2,146 confirmed cases and no deaths.
Viet Nam: Detailed data collection in the first 44 Pandemic (H1N1) 2009 hospitalized cases between 29 May and 26 June 2009. Data suggest that patients treated with oseltamivir were not shedding viral RNA after 5 days of treatment.
United States: As of July 2nd, 2009, the CDC reported 33,902 cases of Pandemic A(H1N1) 2009 in the United States, including 170 deaths. Almost 80% of the deaths were aged ≥ 25 years old.
Europe : As of July 9th, 2009, European countries had reported a total of 11,020 cases in the region, including 4 deaths. Influenza activity in the community remains low across all countries except UK.
United Kingdom: As of July 1st, 2009, the United Kingdom has reported a total of 6,929 cases and of those with age recorded, 62% are less than 20 years old. 105 hospitalizations and 3 deaths have been reported.

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