



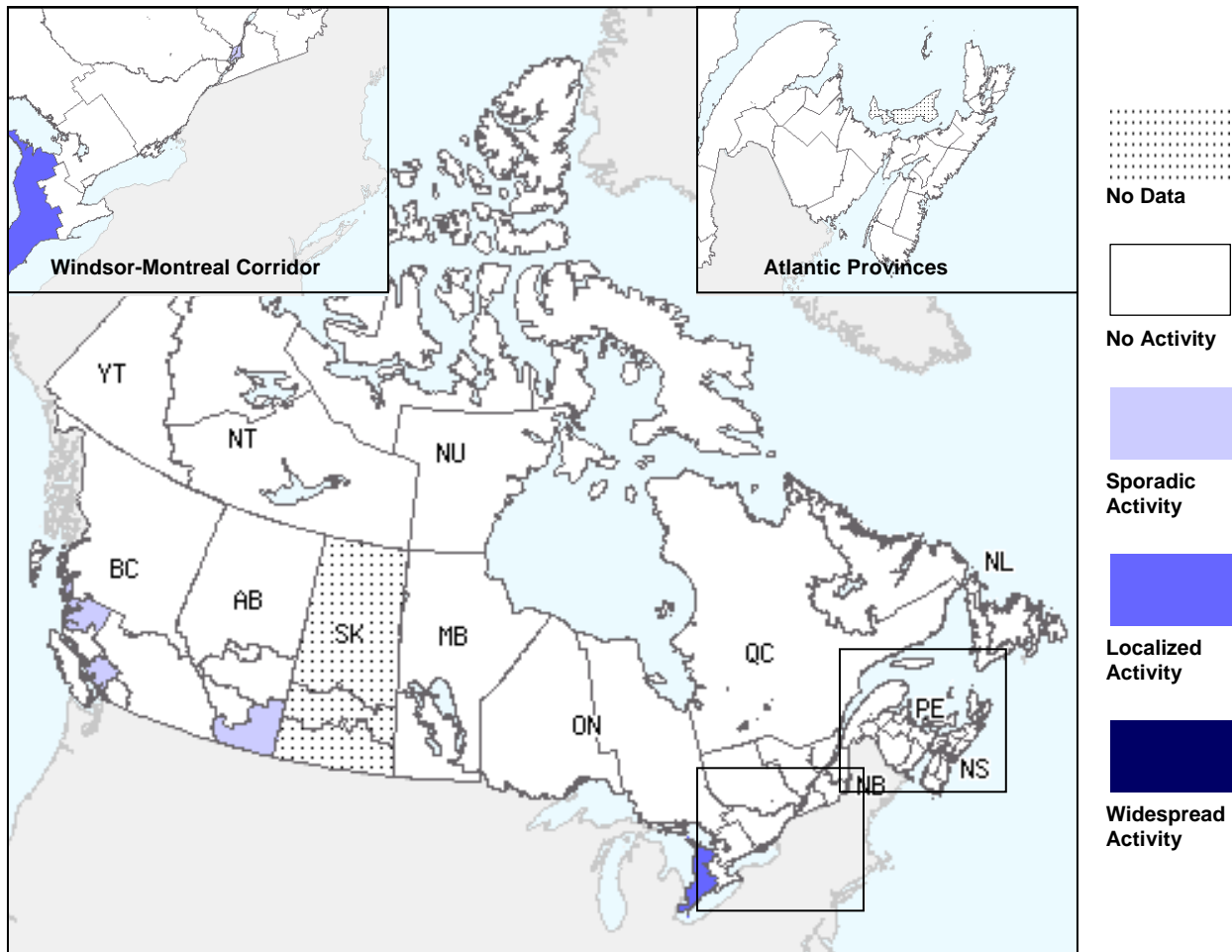
September 12 to September 25, 2010 (Weeks 37 & 38)

- Overall **influenza activity in Canada increased slightly** during weeks 37 & 38 but remained relatively low with most of the influenza surveillance regions reporting no activity. Localized activity was reported by two regions in ON: one during week 37 (school outbreak) and one in another region in ON in week 38 (long-term care facility outbreak).
- The proportion of positive influenza specimens reported during the 2-week period has increased slightly with eleven positive specimens (out of 2,246) in weeks 37-38: five were reported as **influenza A/H3N2** (AB, ON & QC) and six specimens were reported as untyped influenza A (ON).
- Influenza virus circulation remained most active in areas of the temperate **Southern Hemisphere** and in parts of Asia, particularly South and Southeast Asia. In some parts of the Southern Hemisphere, influenza activity showed a **late-season increase**, such as **Chile**, where levels in **some areas as high as last year's pandemic peak**, and in parts of **Australia** although much lower than 3 previous seasons. With the exception of South Africa and Chile, the pandemic influenza A/H1N1 strain still predominated with some A/H3N2 and B viruses. The previous seasonal A/H1N1 viruses seem to have disappeared completely.

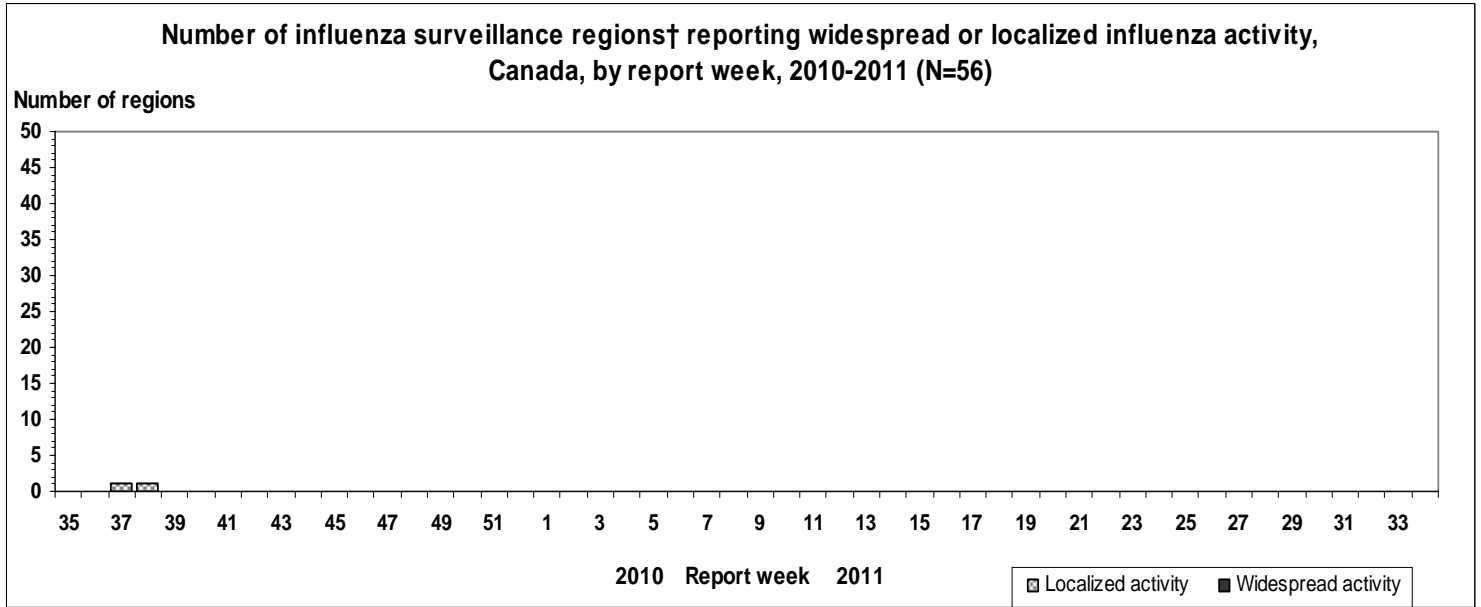
Overall Influenza Summary – Weeks 37 & 38 (September 12 to September 25, 2010)

During both weeks 37 and 38, one region reported localized activity in ON. 6 regions (in AB, ON, QC & NU) reported sporadic activity during week 37, while only three reported sporadic activity in week 38 (in BC, AB & QC). Four regions (1 in PEI and all 3 in SK) have stopped reporting for the summer and have not yet resumed. Two new influenza outbreaks were reported during the two-week period; one during week 37 in a school (ON) as well as one during week 38 in a long-term care facility (ON).

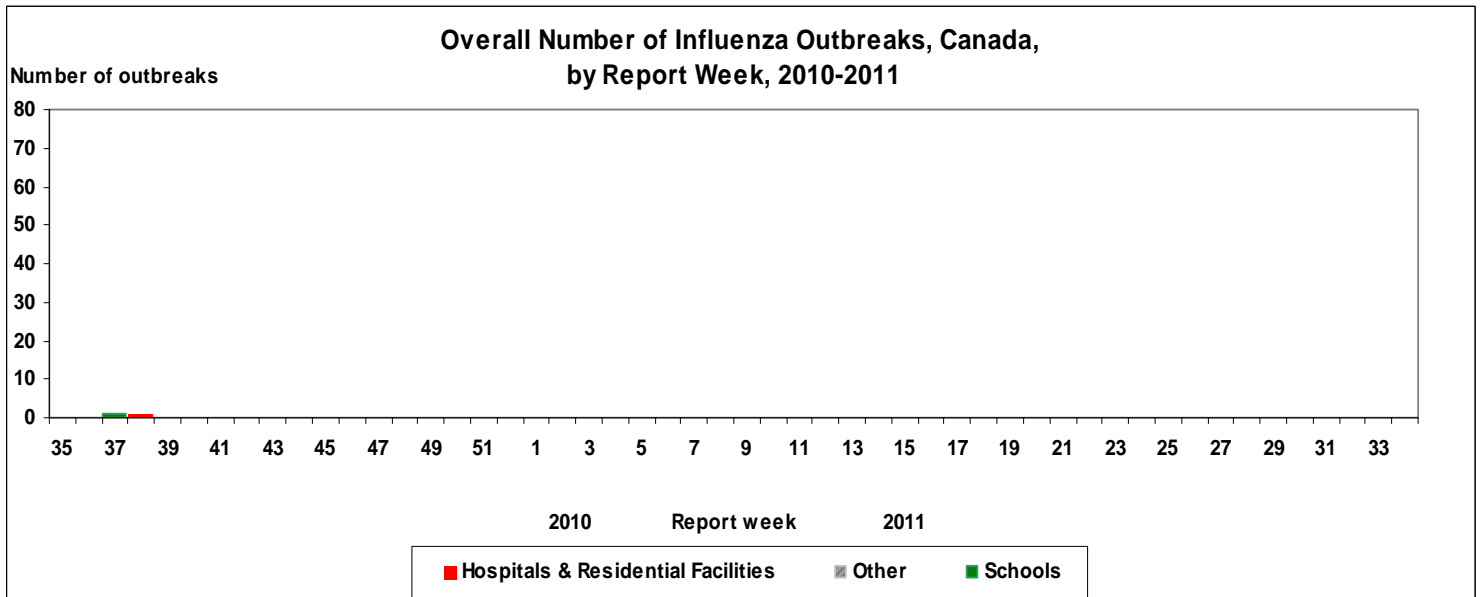
Map of overall Influenza activity level by province and territory, Canada, Week 38



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.



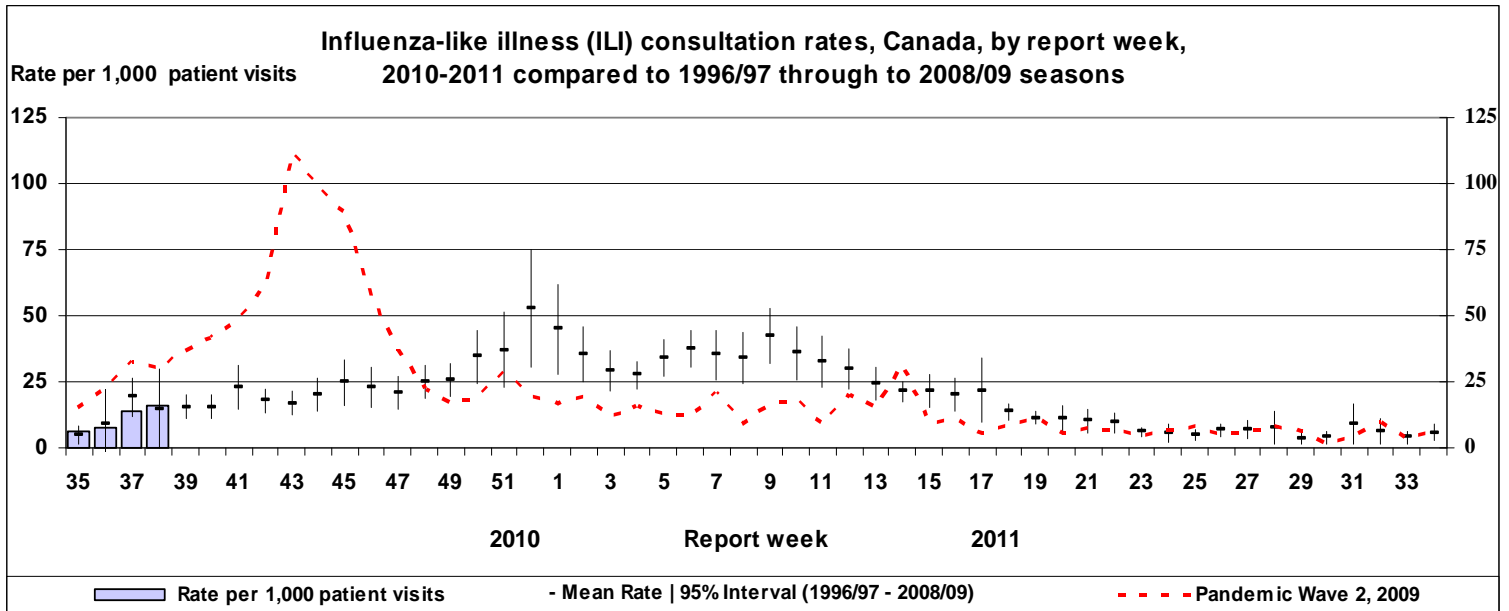
† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.



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 weeks 37 and 38, the national ILI consultation rates (14.0 and 15.9 per 1,000 consultations, respectively) increased compared to the previous weeks but were still within expected levels for this time of year (see ILI graph). Those between 5 and 19 years of age had the highest consultation rates in both weeks 37 and 38 (26.8 and 40.8 per 1,000) 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.

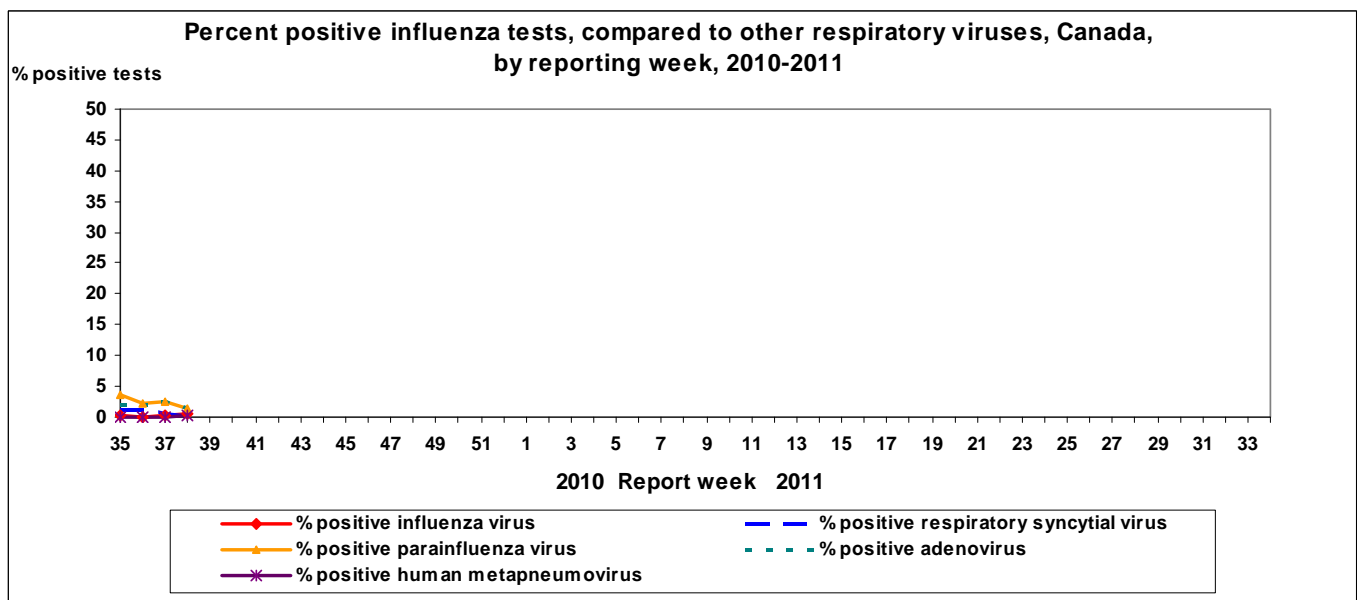
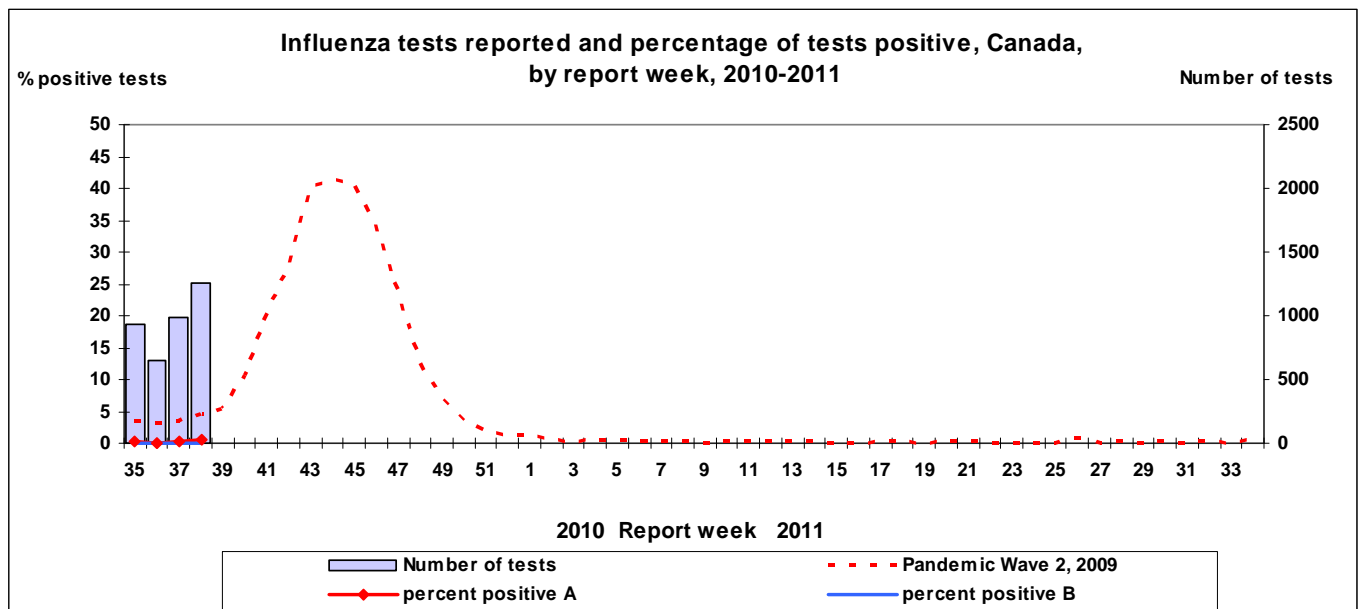
Laboratory Surveillance Summary

The proportion of tests that were positive for influenza during week 37 was 0.30% (3/986) and during week 38 was 0.63% (8/1,260), with a combined proportion of 0.49% (11/2,246) for the two-week period (see Tests table). The proportion of positive influenza specimens reported during weeks 37-38 has slightly increased compared to the previous weeks and was higher than what was usually observed at this time of the year. Of the 11 positive specimens, six specimens were reported as unsubtyped influenza A and five were reported as influenza A/H3N2. AB, ON and QC were the only provinces to report positive influenza specimens during those reporting weeks. During weeks 37 and 38, low levels of parainfluenza detections (2.5% and 1.5%), adenovirus (2.5% and 1.4%) and respiratory syncytial virus (RSV) (0.6% and 0.4%) continue to be reported.

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

Reporting provinces	Bi-Weekly (September 12 to September 25, 2010)						Cumulative (August 29, 2010 to September 25, 2010)					
	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	0	0	0	0	0	0	0	0	0	0	0	0
AB	3	0	3	0	0	0	5	0	5	0	0	0
SK	0	0	0	0	0	0	0	0	0	0	0	0
MB	0	0	0	0	0	0	0	0	0	0	0	0
ON	7	0	1	0	6	0	7	0	1	0	6	0
QC	1	0	1	0	0	0	1	0	1	0	0	0
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
Canada	11	0	5	0	6	0	13	0	7	0	6	0

*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 37-38, 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 37 and 38, no new laboratory-confirmed influenza-associated adult (16 years of age and older) hospitalizations were reported through the Canadian Nosocomial Infection Surveillance Program (CNISP) from 18 reporting sites in week 37 and 21 in week 38.

Sale of antivirals (AV)

During week 37, antiviral prescriptions monitoring results demonstrate a levelling-off of antiviral prescriptions at the national level, while in week 38, an increase was observed. 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. Respiratory-related over the counter transactions demonstrated increases at national level.

Antigenic Characterization

Since September 1, 2010, National Microbiology Laboratory (NML) has antigenically characterized three influenza viruses (2 A/H3N2 from AB and ON, and 1 B virus from QC) that were received from provincial laboratories. The two 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 2010-11 season, no oseltamivir resistant pandemic H1N1 2009 have been reported. One A/H3N2 virus was tested for resistance to amantadine, zanamivir and oseltamivir and it was found to be resistant to amantadine, but sensitive to zanamivir and oseltamivir.

International influenza update

References: <<http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/sep272010flusurveil.html>, http://ecdc.europa.eu/en/activities/sciadvice/Lists/ECDC%20Reviews/ECDC_DispForm.aspx?List=512ff74f%2D77d4%2D4ad8%2Db6d6%2Dbf0f23083f30&ID=947&RootFolder=%2Fen%2Factivities%2Fsciadvice%2FLists%2FECDC%20Reviews, http://www.who.int/csr/disease/influenza/2010_09_24_GIP_surveillance/en/index.html>

Global information

WHO: Influenza virus circulation remained most active in areas of the temperate Southern Hemisphere and in parts of Asia, particularly South and Southeast Asia. In some parts of the Southern Hemisphere, influenza activity showed a late-season flourish, such as Chile, where levels in some areas exceeded last year's pandemic peak, and in parts of Australia. In Asia, significant influenza virus circulation continued to be reported in India and Thailand and to a lesser extent in China. New Zealand has also shown an unusual pattern of infection during the winter season, but activity, most of it pandemic H1N1 2009, has dipped below seasonal baselines. In South Africa, peak wintertime influenza activity has passed but there continues to be active co-circulation of seasonal influenza (type B and A/H3N2) viruses and also, more recently, pandemic H1N1 2009. With the exception of South Africa and Chile, the pandemic influenza A/H1N1 strain still predominated with some A/H3N2 and B viruses. The previous seasonal A/H1N1 viruses have been inexistent.

Antiviral resistance: The Netherlands reported the first case worldwide of resistance to both Tamiflu and Relenza due to a mutation in pandemic H1N1 2009 virus. Researchers said that the case of a 5-year-old leukemia patient who died from pandemic H1N1 2009 after the virus mutated in his body showed that people with weakened immune systems may be at greater risk of developing dangerous drug-resistant infections.

Geographic update

Southern hemisphere

Australia: In Australia, a steady increase in the national rate of ILI consultations was observed between late August and mid-September 2010, but overall levels remained well below those seen during the past three winter influenza seasons. The majority (70%) of recent influenza virus isolations have been characterized as pandemic H1N1 2009, though seasonal A/H3N2 and B viruses have also been detected. There are no data indicating to what extent the transmission has been affected by attempts at immunisation in 2009 and 2010 with first pandemic and then seasonal influenza vaccines in Australia.

New Zealand: In New Zealand, the national consultation rate for ILI fell below the seasonal baseline during the third week of September 2010 after peaking approximately one month earlier. Compared to the 2009 winter pandemic wave, the influenza season to date in New Zealand has been characterized by a late winter arrival, lower overall levels of ILI nationally but significant regional variability including locally intense outbreaks in some areas even higher for those areas than in the pandemic winter, and continued predominance of circulating H1N1 (2009) viruses relative to seasonal influenza viruses. It has suggested by the authorities that areas that experienced less transmission during the pandemic winter wave of 2009 may now be experiencing more transmission.

Chile: The current influenza season in Chile has been notable for its unusually late arrival and locally intense epidemics in several regions which have observed levels of ILI matching or slightly surpassing levels seen during the 2009 winter pandemic wave. Since the beginning of the current epidemic period, which began during early August 2010, the proportion of emergency department consultations for influenza has increased markedly among children <15 years of age followed by persons 15-64 years of age. Conversely RSV circulation, which was responsible for early local epidemics in children, has decreased during the last weeks with RSV now accounting for only 30% of the total of viruses, followed by influenza B and parainfluenza viruses. In addition, the co-circulation of 2009 pandemic influenza A/H1N1 and A/H3N2 viruses continues with the latter becoming more important; the proportion of all influenza viruses accounted for by the A/H3N2 viruses is three times that of pandemic H1N1 2009. In neighbouring Argentina, limited data suggest that low levels of predominantly influenza type B viruses circulated between June and late August 2010.

Northern hemisphere

Asia: In India, there is widespread persistence of active influenza virus circulation. As of mid-September 2010, at least 17 states and territories reported new cases. Pandemic H1N1 2009 continued to be the predominant circulating influenza virus in India. In southern China and in Hong Kong (SAR China) and to a lesser extent in northern China, there has been an increasing reemergence of circulating seasonal influenza A/H3N2 viruses since July 2010. In Thailand, there has been active circulation of pandemic H1N1 2009 and to a lesser extent seasonal influenza type B and A/H3N2 viruses since mid-July 2010, coinciding with a period of usual transmission of influenza viruses.

United States: No further influenza surveillance reports will be published by the CDC for the 2009-2010 influenza season (last report was in week 20). The next report will be published on October 15, 2010 (week 40 ending October 9, 2010). <<http://www.cdc.gov/flu/weekly/index.htm>>

Europe: During weeks 36 and 37, epidemiological indicators show no or sporadic influenza activity in the 17 reporting EU countries. Six specimens tested positive for influenza A and B viruses (1 pandemic H1N1, 2 untyped influenza A, 2 A/H3N2 and 1 B) among sentinel and non-sentinel specimens during weeks 36 and 37/2010.

<http://ecdc.europa.eu/en/publications/Publications/100924_SUR_Biweekly_Influenza_Surveillance_Overview.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 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.