



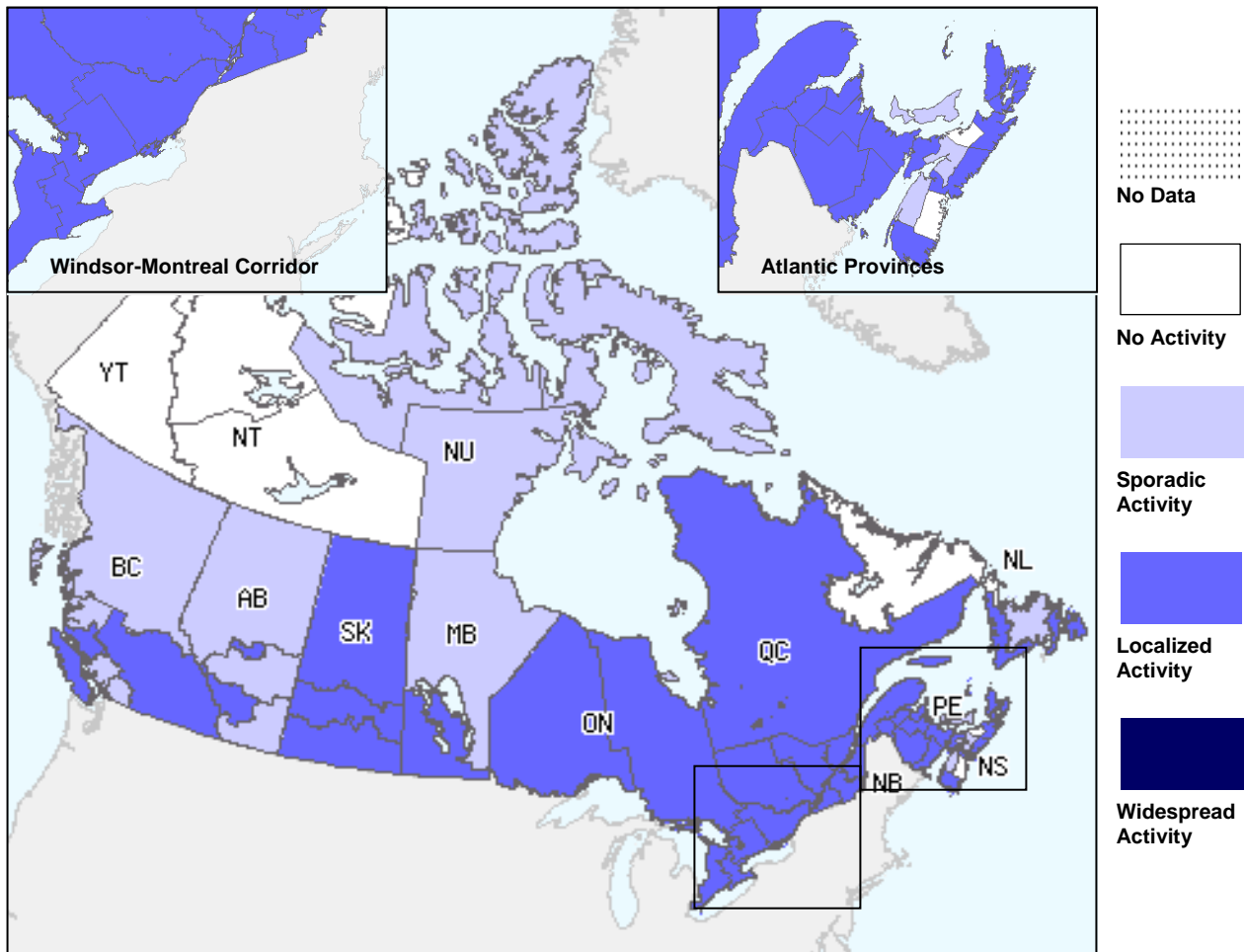
## February 13 to 19, 2011 (Week 07)

- In week 07, there was an increase in overall influenza activity level, with 62.5% (35/56) of regions reporting localized influenza activity. There was a substantial increase in the number of outbreaks reported this week. The proportion of positive influenza detections overall decreased slightly, though the ILI consultation rate remained similar to the previous week.
- Since the beginning of the season, 86.3% of the subtyped positive influenza A specimens have been influenza A/H3N2. In week 07, pandemic H1N1 2009 detections increased to 8% of positive influenza detections while the proportion of influenza B detections remained stable at 10%.

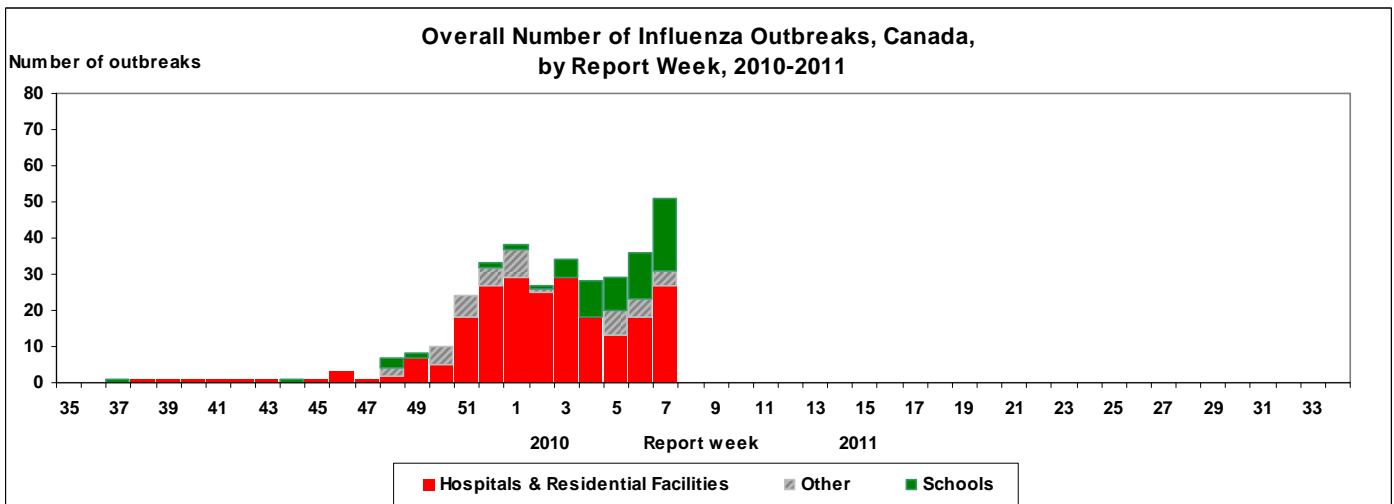
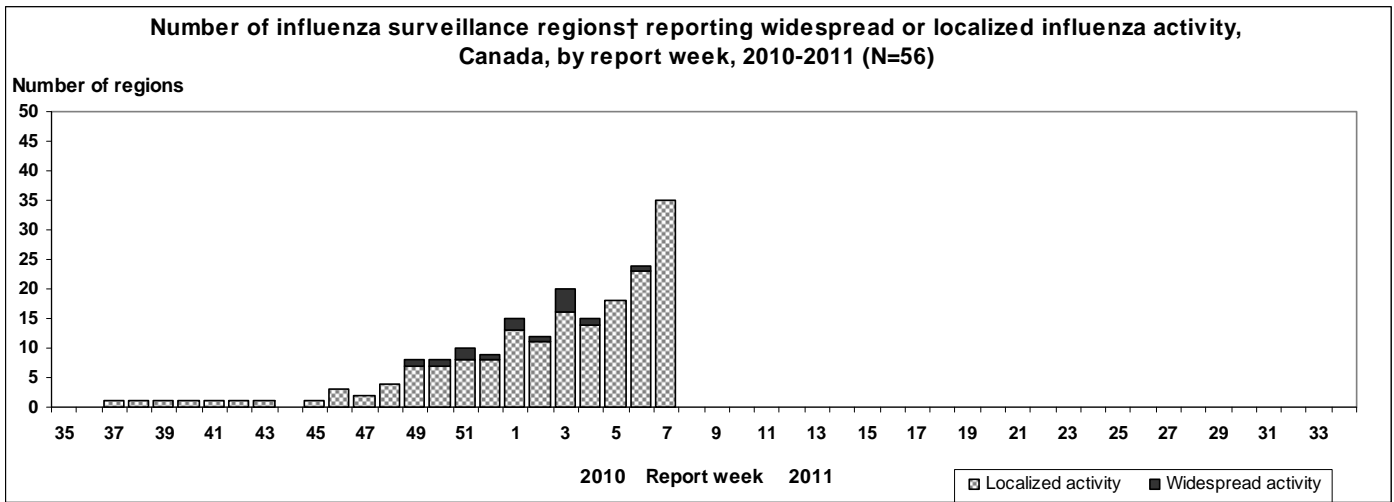
### Overall Influenza Summary – Week 07 (February 13 to 19, 2011)

In week 07, 35 regions reported localized activity (in all provinces except PE), 15 regions reported sporadic activity (in all provinces and territories except YK) and 6 regions presented no activity (see Activity level Map). Compared to the previous week (week 06), 15 regions reported an increased level of influenza activity, 5 regions reported decreased activity, and 33 regions maintained a stable level of influenza activity (sporadic or higher). Fifty-one new ILI/influenza outbreaks were reported: 26 in long-term care facilities (LTCF) in BC(2), SK (5), ON(4), QC(7), NB (2) and NS(6); 20 school outbreaks in AB(2), NB(15), NS(1) and NL(2); 1 hospital outbreak in ON; and 4 outbreaks in other facilities in SK(1), ON(2) and NL(1).

**Map of overall Influenza activity level by province and territory, Canada, Week 07**



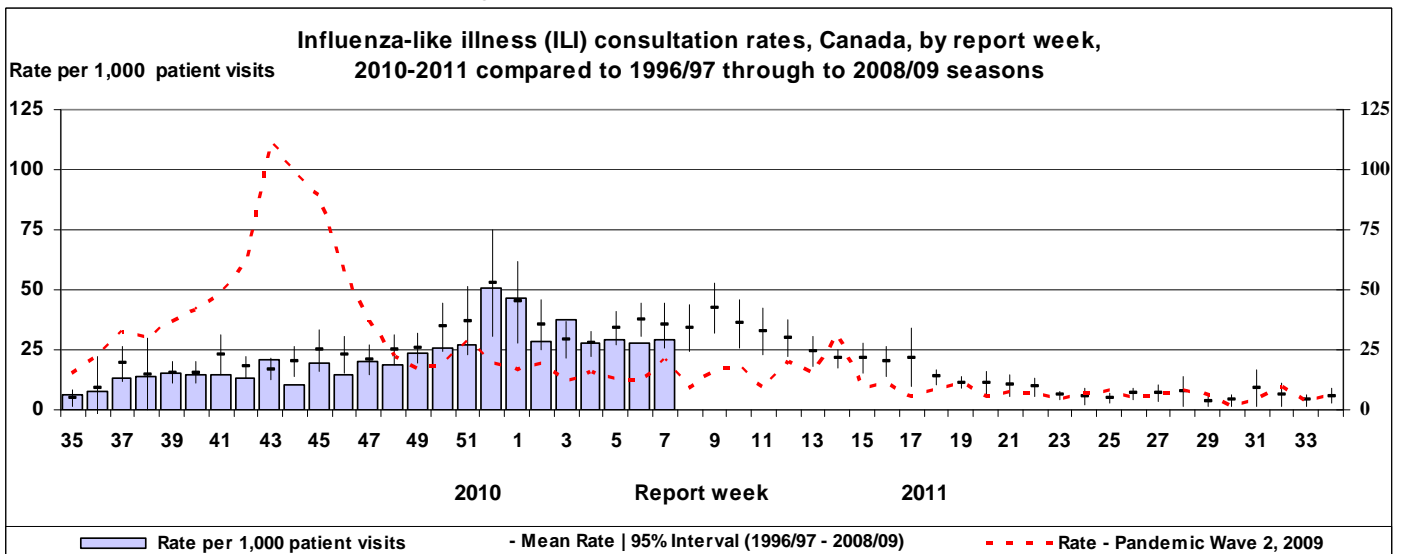
Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and reported outbreaks. Please refer to detailed definitions on the last page. For areas 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 07, the national ILI consultation rate was 29.4 consultations per 1,000 patient visits, a similar rate to that observed during the previous 4 weeks, and still within expected range for this time of year (see ILI graph). Children between 5 and 19 years old had the highest consultation rates (70.3 per 1,000 consultations in week 07) followed by children under 5 years of age (66.8 per 1,000).



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

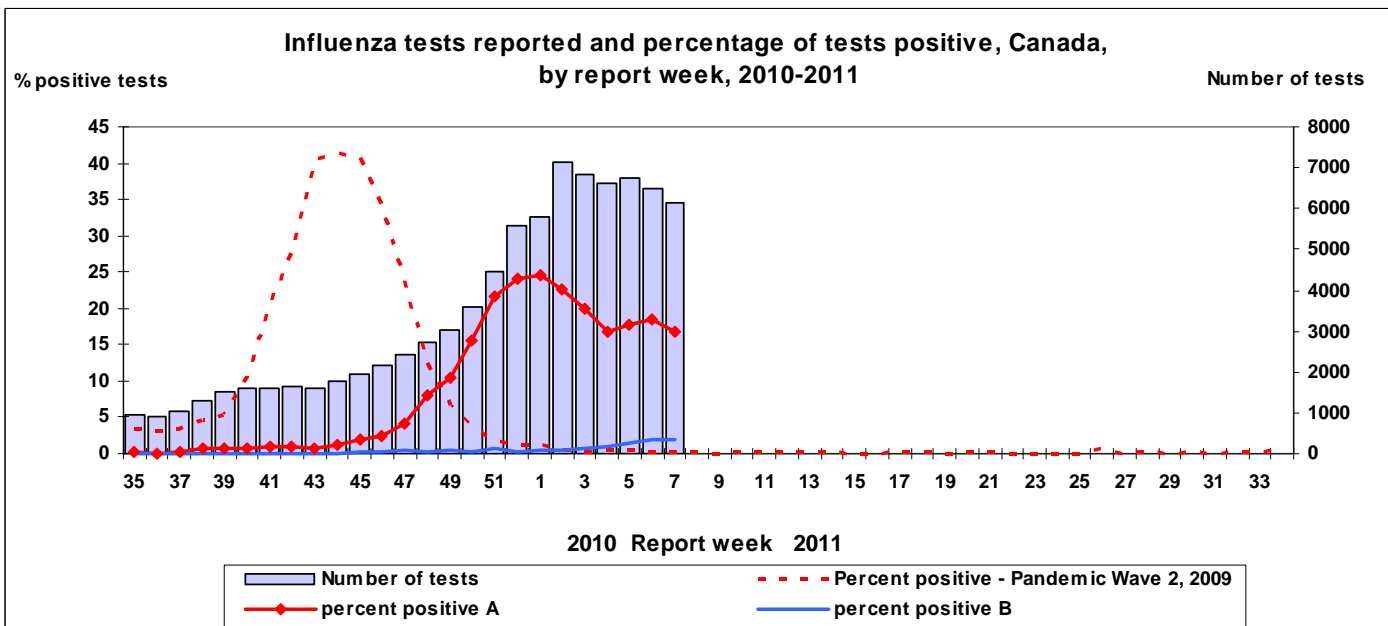
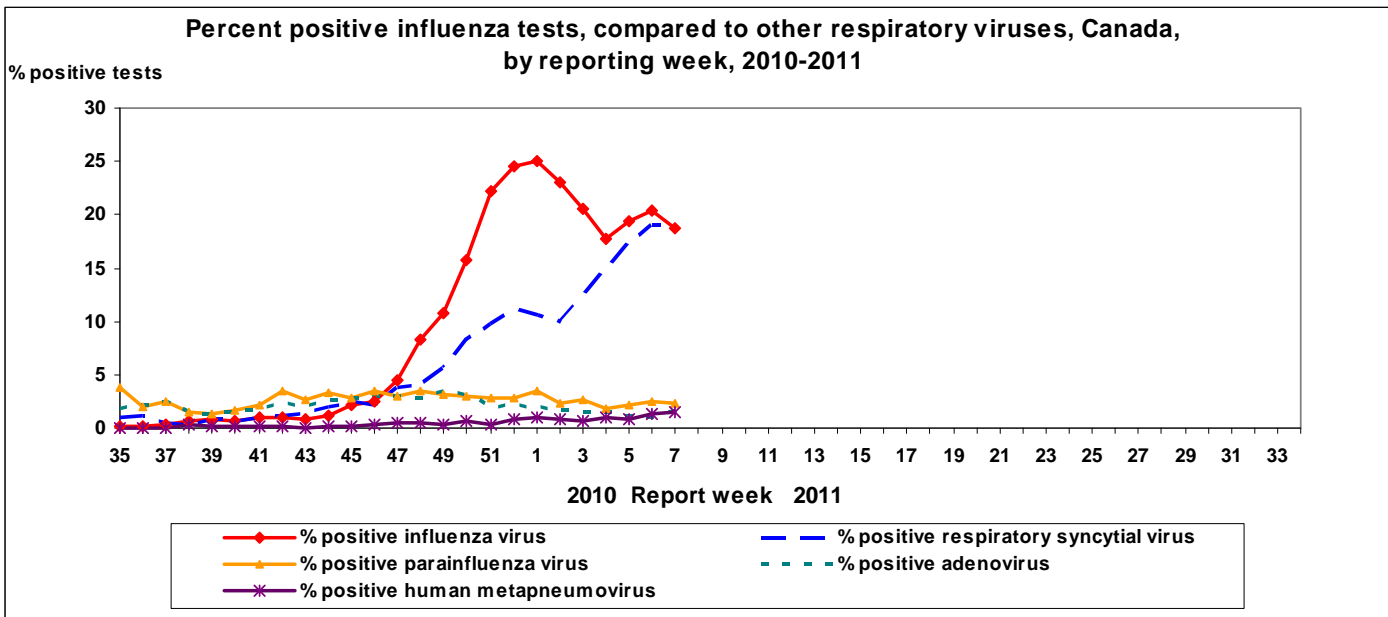
The proportion of tests that were positive for influenza during week 07 was 18.7%, which is decreased from 20.2% in week 06. The proportion of positive tests peaked in week 52, deviated slightly from the downward trend during weeks 05 and 06, but decreased in week 07. Of the 1150 positive tests reported during week 07, 337 (29%) specimens were reported as influenza A/H3N2, 92 (8%) as pandemic H1N1 2009, 113 (10%) as influenza B and 608 (53%) as untyped influenza A. Since the beginning of the season, the majority of influenza virus detections have been influenza A viruses (95.6% or 12,651/13,235), and among subtyped influenza A specimens 86.3% have been A/H3N2. In week 07, detections of pandemic H1N1 2009 represented 21.4% of all subtyped influenza A specimens, which is increased from the proportion of 17.3% observed in week 06. Detections of influenza B remained stable at 9.8% of all positive influenza specimens in week 07 compared to 9.3% in week 06. Through detailed case-based laboratory reporting where age data is provided, since August 29, 2010, 52.4% (1619/3090) of cases with A/H3N2 were aged 65 years or older. In contrast, the majority (93.8%) of cases with pandemic H1N1 2009 were under 65 years of age. (see Tests detailed table). In week 07, the proportion of positive tests for respiratory syncytial virus detections (RSV) was 19.0% of specimens tested (See Respiratory viruses graph).

| Reporting provinces | Weekly (February 13 to February 19, 2011) |          |            |           |            |            | Cumulative (August 29, 2010 to February 19, 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                  | 33  | 0        | 12         | 19        | 2          | 12         | 224   | 0        | 75          | 87         | 62          | 52         |
| AB                  | 80  | 0        | 48         | 24        | 8          | 48         | 607   | 0        | 452         | 130        | 25          | 135        |
| SK                  | 43  | 0        | 28         | 12        | 3          | 0          | 189   | 0        | 128         | 21         | 40          | 9          |
| MB                  | 11  | 0        | 0          | 0         | 11         | 0          | 502   | 0        | 56          | 1          | 445         | 0          |
| ON                  | 346                                       | 0        | 73         | 7         | 266        | 29         | 5892  | 0        | 2185        | 234        | 3473        | 252        |
| QC                  | 360                                       | 0        | 75         | 2         | 283        | 21         | 4693  | 0        | 702         | 29         | 3962        | 118        |
| NB                  | 120                                       | 0        | 78         | 27        | 15         | 2          | 416   | 0        | 269         | 107        | 40          | 15         |
| NS                  | 29  | 0        | 10         | 1         | 18         | 0          | 74  | 0        | 21          | 6          | 47          | 1          |
| PE                  | 6   | 0        | 4          | 0         | 2          | 1          | 29  | 0        | 20          | 7          | 2           | 1          |
| NL                  | 9   | 0        | 9          | 0         | 0          | 0          | 25  | 0        | 24          | 1          | 0           | 1          |
| <b>Canada</b>       | <b>1037</b>                               | <b>0</b> | <b>337</b> | <b>92</b> | <b>608</b> | <b>113</b> | <b>12651</b>                                      | <b>0</b> | <b>3932</b> | <b>623</b> | <b>8096</b> | <b>584</b> |

\*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.

| Age groups   | Weekly (Feb. 13 to Feb. 19, 2011) |               |            |           |           | Cumulative (Aug. 29, 2010 to Feb. 19, 2011) |               |             |            |            |
|--------------|-----------------------------------|---------------|------------|-----------|-----------|---|---------------|-------------|------------|------------|
|              | Influenza A                       |               |            |           | B         | Influenza A                                 |               |             |            | B          |
|              | A Total                           | Pandemic H1N1 | A/H3N2     | A untyped | Total     | A Total                                     | Pandemic H1N1 | A/H3N2      | A untyped  | Total      |
| <5           | 22                                | 2             | 17         | 3         | 11        | 746   | 88            | 528         | 130        | 70         |
| 5-19         | 21                                | 3             | 16         | 2         | 26        | 388   | 63            | 224         | 101        | 113        |
| 20-44        | 29                                | 11            | 12         | 6         | 7         | 774   | 195           | 394         | 185        | 52         |
| 45-64        | 31                                | 12            | 12         | 7         | 1         | 568   | 110           | 325         | 133        | 27         |
| 65+          | 109                               | 2             | 74         | 33        | 2         | 1922  | 30            | 1619        | 273        | 30         |
| Unknown      | 2                                 | 0             | 2          | 0         | 0         | 219   | 3             | 214         | 2          | 0          |
| <b>Total</b> | <b>214</b>                        | <b>30</b>     | <b>133</b> | <b>51</b> | <b>47</b> | <b>4617</b>                                 | <b>489</b>    | <b>3304</b> | <b>824</b> | <b>292</b> |

\*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.



## Canadian situation

### Paediatric Influenza Hospitalizations and Deaths

In week 07, 23 new laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network: 3 from AB, 6 from ON, 11 from QC and 3 from NL. This number is decreased compared to the previous week (week 06) in which 45 paediatric hospitalizations were reported (note that numbers may fluctuate because of the delays in reporting). So far this season, two deaths in children have been reported, both in Ontario. One, aged between 6 months and 23 months, who tested positive for pandemic H1N1 2009 was reported in week 48, and one aged 10-16 years, who tested positive for influenza A (unsubtyped), was reported in week 04.

Since the beginning of the season, 418 hospitalizations with laboratory-confirmed influenza have been reported from all provinces except NB and PE; 66 (15.8%) as influenza A/H3N2, 13 (3.1%) pandemic H1N1 2009, 289 (69.1%) as unsubtyped influenza A, and 50 (12.0%) influenza B. The distribution of cases to date by age group was as follows: 18.9% among 0-5 month olds; 28.5% among 6-23 month olds; 28.7% among the 2-4 year-olds; 14.8% among 5-9 year-olds; and 9.1% among children 10-16 years old.

### Adult Influenza Hospitalizations and Deaths

During week 07, 27 new hospitalizations with laboratory-confirmed influenza among adults (16 years of age and older) were reported through the Canadian Nosocomial Infection Surveillance Program (CNISP). This number is decreased compared to the 39 cases reported in week 06 (note that numbers may fluctuate because of the delays in reporting). Of the 27 new cases reported between February 13 and 19, 2011, 21 (77.8%) tested positive for unsubtyped influenza A, 3 (11.1%) as influenza

A/H3N2, and 3 (11.1%) as influenza B. Since the beginning of the season, 784 hospitalized cases have been reported: 184 (23.5%) A/H3N2, 29 (3.7%) pandemic H1N1 2009, 555 (70.8%) influenza A untyped, and 16 (2.0%) influenza B, from all reporting provinces except NL. To date, 544 of the 784 (69.4%) cases were aged 65 years or older and 354 (54.2%) were males.

Nine provinces and territories (excluding BC, QC, NB and NU) currently conduct severe outcomes surveillance and report weekly numbers of hospitalizations, ICU admissions and deaths with laboratory-confirmed influenza. In week 07, 3 deaths were reported, one in each of AB, MB and ON. One case was between 20 and 44 years old with pandemic H1N1 2009 detected, and the other two were in persons >65 years old with A/H3N2. Among the 134 fatal cases reported since the beginning of the influenza season, influenza A/H3N2 was identified in 64.9% (87/134), untyped influenza A in 26.9% (36/134), pandemic H1N1 2009 in 6.0% (8/134), and influenza B in 2.2% (3/134). Seventy-five percent (101/134) of these fatal cases were among persons 65 years of age or older, and another 13% (17/134) were between the ages of 45 and 64 years old, in keeping with the age-groups usually affected by A/H3N2. (Note that numbers may fluctuate because of the delays in reporting).

### **Antigenic Characterization**

Between September 1 and February 24, 2011, the National Microbiology Laboratory (NML) has antigenically characterized 297 influenza viruses that were received from provincial laboratories: 164 A/H3N2 from BC, AB, SK, MB, ON, QC & NB, 58 pandemic H1N1 2009 from BC, AB, ON, QC, NB & NS and 75 B viruses from BC, AB, SK, ON, QC & NB. All 164 influenza A/H3N2 viruses characterized were antigenically related to A/Perth/16/2009, which is the influenza A/H3N2 component recommended for the 2010-11 influenza vaccine. The 58 pandemic H1N1 2009 viruses characterized were antigenically related to the pandemic vaccine virus A/California/7/2009, which is the recommended H1N1 component for the 2010-11 influenza vaccine. Of the 75 influenza B viruses characterized, 74 were antigenically related to B/Brisbane/60/08 (Victoria lineage), which is the recommended influenza B component for the 2010-11 influenza vaccine. Four viruses tested showed reduced titer with antisera produced against B/Brisbane/60/08. One influenza B virus was characterized as B/Florida/04/2006-like, which belongs to the Yamagata lineage.

### **Antiviral Resistance**

Since the beginning of the 2010-2011 season, NML has tested 322 influenza A isolates (263 A/H3N2 and 59 pandemic H1N1 2009) for amantadine resistance and found that 262 influenza A/H3N2 were resistant to amantadine and one was sensitive. All 59 influenza A/H1N1 viruses were resistant to amantadine. Of 282 influenza viruses (147 A/H3N2, 59 pandemic H1N1 2009, and 76 influenza B) tested for resistance to oseltamivir, all isolates were found to be sensitive to oseltamivir. Of 279 influenza viruses (146 A/H3N2, 56 pandemic H1N1 2009, and 77 influenza B) tested for resistance to zanamivir, all isolates were found to be sensitive to zanamivir.

## **International influenza update**

### **Geographic update**

#### **Northern hemisphere**

**United States:** During week 06 (February 6-12, 2011), influenza activity remained elevated. Thirty five percent (3,306/9,448) of specimens tested were positive for influenza, of which 78.6% were influenza A and 21.4% were influenza B. Among influenza A specimens, the proportion of A/H3 (39.3%) was greater than the proportion of pandemic H1N1 2009 (28.5%) in week 06. The proportion of deaths attributed to pneumonia and influenza (P&I) was above the epidemic threshold. Five influenza-associated paediatric deaths were reported for a total of 35 this season, of which 13 were associated with influenza B, 9 with A/H3, 7 with pandemic H1N1 2009, and 6 with untyped influenza A. The proportion of outpatient visits for influenza-like illness (ILI) was 4.5%, which is above the national baseline of 2.5%. All 10 national regions reported ILI at or above region-specific baseline levels. Twenty states experienced high ILI activity, and 9 states experienced moderate ILI activity. The geographic spread of influenza in 37 states was reported as widespread, and 10 states reported regional influenza activity. <http://www.cdc.gov/flu/weekly/index.htm>

#### **United Kingdom**

Influenza activity continues to decline in the UK and GP consultation rates are below baseline levels. All influenza types are reducing, with influenza B remaining the predominant virus; influenza A H1N1 (2009) continues to circulate, with very few, sporadic influenza A (H3N2) virus detections. Eighteen percent (10/55) of specimens from patients with ILI presenting to sentinel GPs in England in week 7 (ending 20 Feb 2011), were reported as positive for influenza. The proportion of samples positive decreased for rhinovirus (15.2%) and remained stable for parainfluenza (1.5%). Slight increases in positivity were seen for RSV (10.6%), HMPV (5.3%) and adenovirus (9.8%). Since week 36, 523 UK deaths associated with influenza infection have been reported, with 92% of the 499 cases with available information associated with pandemic H1N1 2009 infection, 6 with untyped influenza A and 32 (6%) with influenza B infection. Reported deaths have been mainly in middle-aged and younger adults, with 72% of cases between 15 and 64 years. By week 7, the proportion of people in England aged over 65 years who had received the 2010/11 influenza vaccine was 72.9%. For those in a risk group aged under 65 years it was 50.3%. [http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1296681716703](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1296681716703)

## Europe

Most European countries continue to report medium to high influenza-like illness/acute respiratory infection consultation rates and widespread activity. During week 06/2011, four countries (Greece, Hungary, Italy and Sweden) observed high intensity levels of ILI/ARI and Luxembourg continued to report very high intensity. Increasing trends were reported by only 4 countries (Austria, Czech Republic, Iceland and Slovakia), and 14 countries reported decreasing trends. Numbers of influenza infections with severe outcome have decreased in western European Union countries (Denmark, France, the Netherlands, Ireland, Spain and the UK). The proportion of influenza virus-positive sentinel specimens has gradually decreased to 43% after peaking in week 52/2010 at 57%. Sixty-seven percent of influenza virus detections in week 6/2011 were type A, 33% were type B. Five countries in western and northern Europe reported influenza B as the dominant type. Of the 2 826 influenza A viruses that were subtyped, 99.2% were pandemic H1N1 and 0.8% were A/H3. Among specimens from Ireland, Italy, Norway, Spain and the UK tested for susceptibility to neuraminidase inhibitors, 3.8% (28/738) of pandemic H1N1 2009 viruses tested were resistant to oseltamivir, but remained sensitive to zanamivir. All the resistant viruses carried the neuraminidase H275Y substitution. Eight of 24 resistant viruses, from patients for which exposure to antivirals was known, were from patients that had not been treated with oseltamivir.

[http://ecdc.europa.eu/en/publications/Publications/110218\\_SUR\\_Weekly\\_Influenza\\_Surveillance\\_Overview.pdf](http://ecdc.europa.eu/en/publications/Publications/110218_SUR_Weekly_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 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.