



## Ontario Respiratory Virus Bulletin | 2012-2013

### SURVEILLANCE WEEK 7 (February 10, 2013 – February 16, 2013)

This issue of the Ontario Respiratory Virus Bulletin provides information on the surveillance period from February 10, 2013 to February 16, 2013 (Week 7). Unless otherwise specified, **data presented are for week 7** and data extraction and analysis for this issue of the Bulletin occurred on Wednesday, February 20, 2013. In order to enable our readers to better assess influenza and other respiratory virus activity in Ontario, we have combined various sources of information in the following table.

#### Assessment of Influenza Activity in Ontario

| Measure of activity                                     | Assessment of measure compared to previous week<br>(Lower, Similar, Higher) | Reasoning behind assessment                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Laboratory confirmed influenza cases                    | Lower                                                                       | There were 211 influenza cases reported <sup>1</sup> in week 7 (Table 1), which was lower than the number (272) reported in week 6. Percent positivity <sup>2</sup> of laboratory tests for influenza A in Ontario was 10.5% for week 7 (Table 3), which was lower than percent positivity in week 6 (13.8%). |
| Institutional respiratory infection outbreaks           | Lower                                                                       | Nine new institutional respiratory infection outbreaks were reported <sup>3</sup> in week 7, including two influenza A outbreaks, one influenza B outbreak, one outbreak for other organisms, and five outbreaks for which no aetiological agent was reported (Table 4, Figure 5).                            |
| Influenza activity levels reported by health units      | Similar                                                                     | Four health units across four health regions reported 'widespread' levels of influenza activity, while 12 health units reported 'localized' levels of influenza activity (Figure 6).                                                                                                                          |
| ILI consultation rate reported by sentinel physicians   | Higher                                                                      | The provincial influenza-like-illness (ILI) consultation rate <sup>4</sup> increased from 34.17/1,000 patient visits in week 6 to 50.38/1,000 patient visits in week 7 (Figure 7).                                                                                                                            |
| <b>OVERALL ASSESSMENT</b>                               | <b>Lower</b>                                                                | <b>From week 6 to 7, overall the indicators show that influenza activity has decreased and continues to be driven by influenza A.</b>                                                                                                                                                                         |
| <b>Measures of severity for influenza</b>               |                                                                             |                                                                                                                                                                                                                                                                                                               |
| Hospitalizations among lab confirmed cases of influenza | Lower                                                                       | There were 77 hospitalized cases reported <sup>1</sup> in week 7, which was lower than the number (171) reported in week 6 (Table 2).                                                                                                                                                                         |
| Deaths among lab confirmed cases of influenza           | Similar                                                                     | There were 12 deaths reported <sup>1</sup> in week 7, which was the same as the number reported in week 6 (Table 2).                                                                                                                                                                                          |

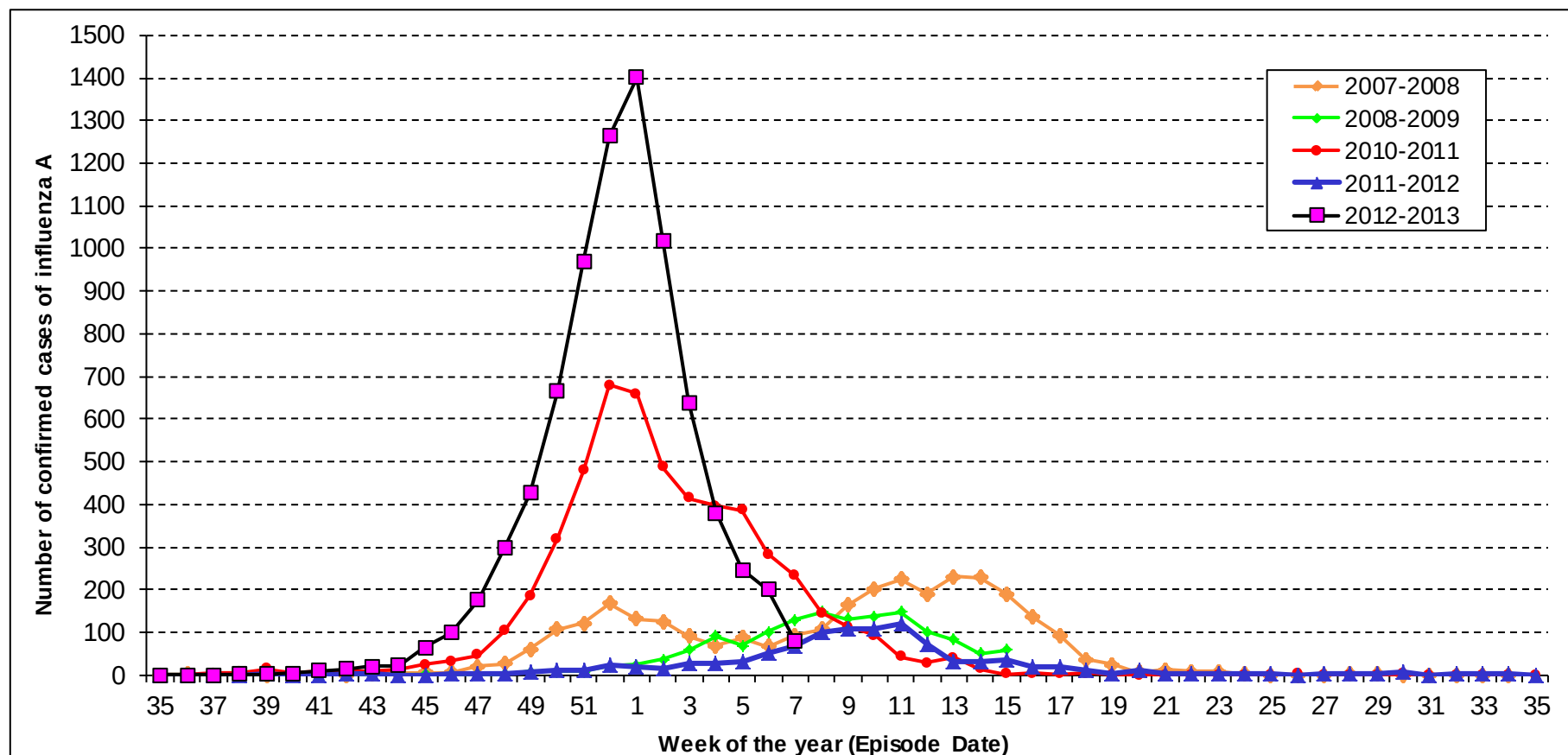
1. The number of **reported** cases needs to be interpreted with caution because there is a lag between the onset of illness, hospital admission or death and when this information is reported to public health. 2. Positivity reflects positive specimens reported to Public Health Ontario by the Centre for Immunization and Respiratory Infectious Diseases (CIRID). 3. The number of new outbreaks reported for the current week is based on the onset date of illness for the first case in an outbreak. 4. Small numbers of sentinels reporting can make the ILI rates unstable. Please interpret these data correspondingly.

**Summary of current and season-to-date respiratory virus activity**

- **Seasonal influenza activity** for the dominant circulating subtype, influenza A/H3N2, continues to decline, with the proportion of respiratory samples testing positive for influenza now at 12.1% compared to the seasonal peak of 33.4% in the last week of 2012.
  - The majority of influenza cases this season (97.6%; 8,025/8,219) were influenza A infections (Table 1). The dominant circulating influenza A subtype is H3N2, representing 94.3% of all subtyped influenza A positive specimens.\*
  - In the season to date, 910 confirmed institutional respiratory infection outbreaks have been reported, 513 (56.4%) of which were laboratory confirmed as influenza A (Table 4).
  - A total of 2,503 hospitalizations and 197 deaths have been reported among lab confirmed influenza cases in the current surveillance season to February 16 (Table 2). The majority of hospitalizations and deaths occurred in influenza A cases (97.8% and 98.5%, respectively).
- The **cause of influenza-like-illness (ILI) activity** in the 2012-2013 surveillance season is changing as the season progresses.
  - At the beginning of the season, entero/rhinovirus was the causative organism of most institutional respiratory infection outbreaks. Subsequently, influenza A became the most common causative organism of institutional outbreaks, although the number of newly reported influenza A outbreaks has now declined (Table 4, Figure 5).
  - Currently, respiratory syncytial virus has the highest percent positivity (14.8%) and influenza A has the second highest percent positivity (10.5%) of all circulating respiratory viruses. The percent positivity for influenza B has increased slightly in recent weeks and is now at 1.6% for the current reporting week. For the season to date, influenza A has had the highest percent positivity overall, followed by entero/rhinovirus (Table 3).\*

\* Positivity among specimens submitted for testing to laboratories reporting to the Centre for Immunization and Respiratory Infectious Diseases (CIRID).

**Figure 1.** Number of reported confirmed cases of influenza A by episode date: Ontario, September 1, 2007 to February 16, 2013



**Source:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/02/20].

**Notes:**

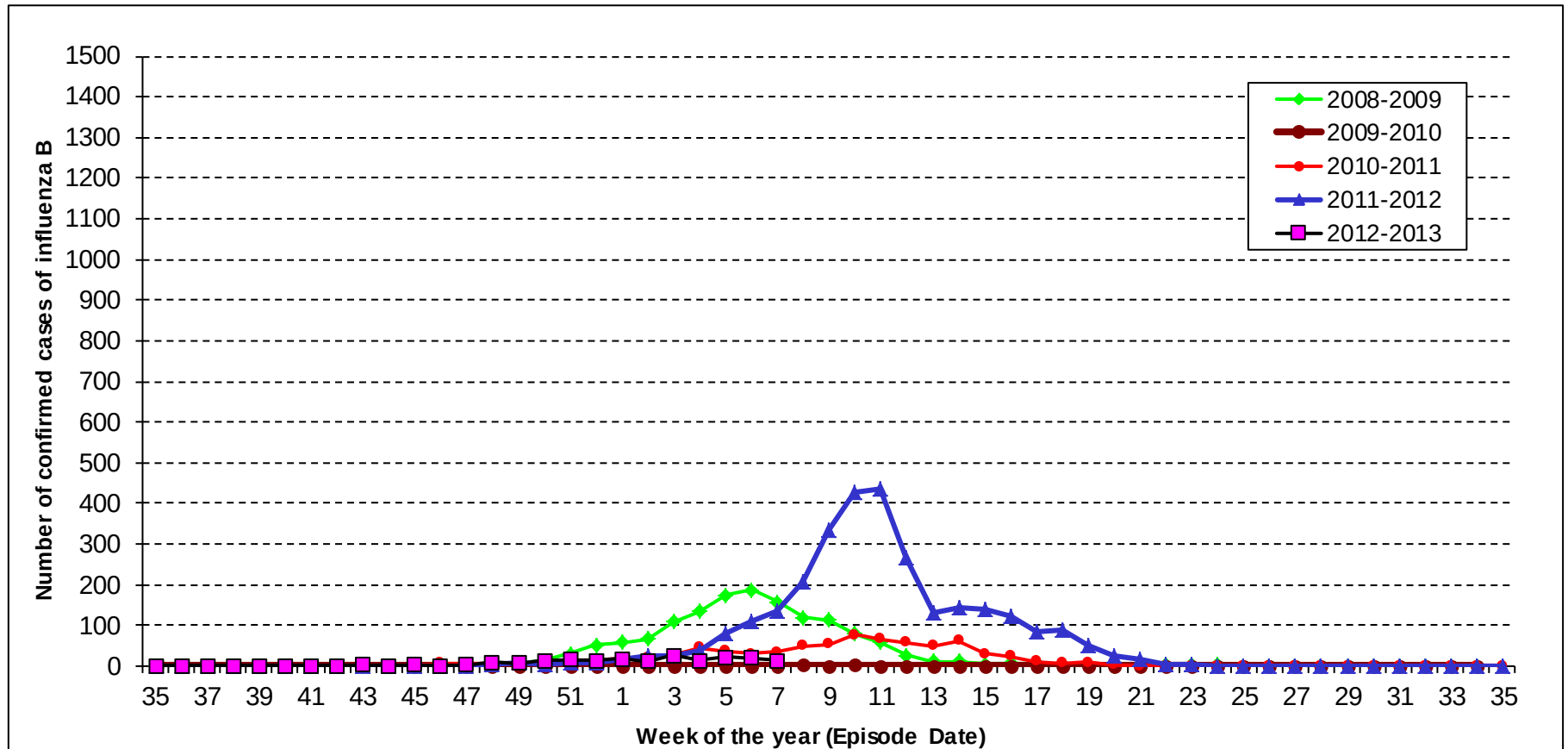
**Interpret tail of 2012-2013 line with caution due to reporting lags.**

Episode date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date). Case counts based on episode dates may not be the same as case counts based on reported dates.

Cases after week 14 in the 2008-2009 season were excluded because seasonal influenza cases from this period may have been detected due to heightened surveillance for all influenza-like illness, therefore this period is not comparable to a regular influenza season. Additionally, all cases from the 2009-2010 influenza season were excluded from this graph due to its incomparability to a regular influenza season as a result of the influenza A(H1N1)pdm09 pandemic.

Week 53 of the 2008-2009 season has been removed for continuity in displaying trends.

**Figure 2.** Number of reported confirmed cases of influenza B by episode date: Ontario, September 1, 2008 to February 16, 2013



**Source:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/02/20].

**Notes:**

**Interpret tail of 2012-2013 line with caution due to reporting lags.**

Episode date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date). Case counts based on episode dates may not be the same as case counts based on reported dates.

# Ontario Respiratory Virus Bulletin, 2012-2013 (Week 7: February 10, 2013 – February 16, 2013)

**Table 1.** Number of reported confirmed influenza cases by health unit and health region: Ontario, week 7 and cumulative (in brackets) for the 2012-2013 season

| Region       | Health Unit                             | Influenza A     |                          |               |                  | Influenza A & B | Influenza B     | TOTAL             |
|--------------|-----------------------------------------|-----------------|--------------------------|---------------|------------------|-----------------|-----------------|-------------------|
|              |                                         | (H1N1) pdm09    | No Subtype/ Not Subtyped | Other*        | H3               |                 |                 |                   |
| North West   | Northwestern                            | 0 (0)           | 3 (25)                   | 0 (0)         | 0 (22)           | 0 (0)           | 0 (2)           | 3 (49)            |
|              | Thunder Bay District                    | 0 (0)           | 1 (25)                   | 0 (0)         | 0 (53)           | 0 (0)           | 1 (3)           | 2 (81)            |
|              | <b>TOTAL NORTH WEST</b>                 | <b>0 (0)</b>    | <b>4 (50)</b>            | <b>0 (0)</b>  | <b>0 (75)</b>    | <b>0 (0)</b>    | <b>1 (5)</b>    | <b>5 (130)</b>    |
| North East   | Algoma                                  | 0 (0)           | 4 (61)                   | 0 (0)         | 0 (31)           | 0 (0)           | 1 (2)           | 5 (94)            |
|              | North Bay Parry Sound District          | 0 (1)           | 2 (176)                  | 0 (0)         | 0 (92)           | 0 (0)           | 0 (4)           | 2 (273)           |
|              | Porcupine                               | 0 (0)           | 0 (26)                   | 0 (1)         | 0 (30)           | 0 (0)           | 0 (0)           | 0 (57)            |
|              | Sudbury & District                      | 0 (2)           | 4 (41)                   | 0 (2)         | 0 (55)           | 0 (0)           | 0 (1)           | 4 (101)           |
|              | Timiskaming                             | 0 (0)           | 5 (17)                   | 0 (0)         | 1 (9)            | 0 (0)           | 0 (0)           | 6 (26)            |
|              | <b>TOTAL NORTH EAST</b>                 | <b>0 (3)</b>    | <b>15 (321)</b>          | <b>0 (3)</b>  | <b>1 (217)</b>   | <b>0 (0)</b>    | <b>1 (7)</b>    | <b>17 (551)</b>   |
| Eastern      | City of Ottawa                          | 0 (0)           | 23 (442)                 | 0 (0)         | 0 (19)           | 0 (0)           | 1 (7)           | 24 (468)          |
|              | Eastern Ontario                         | 0 (0)           | 3 (54)                   | 0 (0)         | 2 (49)           | 0 (0)           | 0 (0)           | 5 (103)           |
|              | Hastings & Prince Edward Counties       | 1 (1)           | 0 (48)                   | 0 (0)         | 0 (87)           | 0 (0)           | 0 (1)           | 1 (137)           |
|              | Kingston, Frontenac, Lennox & Addington | 0 (3)           | 2 (125)                  | 0 (0)         | 0 (86)           | 0 (0)           | 0 (5)           | 2 (219)           |
|              | Leeds, Grenville And Lanark District    | 0 (0)           | 0 (52)                   | 0 (0)         | 0 (51)           | 0 (0)           | 1 (4)           | 1 (107)           |
|              | Renfrew County And District             | 0 (1)           | 1 (33)                   | 0 (0)         | 0 (12)           | 0 (0)           | 1 (8)           | 2 (54)            |
|              | <b>TOTAL EASTERN</b>                    | <b>1 (5)</b>    | <b>29 (754)</b>          | <b>0 (0)</b>  | <b>2 (304)</b>   | <b>0 (0)</b>    | <b>3 (25)</b>   | <b>35 (1088)</b>  |
| Central East | Durham Region                           | 1 (6)           | 3 (97)                   | 0 (1)         | 1 (63)           | 0 (0)           | 4 (11)          | 9 (178)           |
|              | Haliburton, Kawartha, Pine Ridge        | 0 (1)           | 1 (89)                   | 0 (0)         | 0 (40)           | 0 (0)           | 0 (3)           | 1 (133)           |
|              | Peel Region                             | 1 (24)          | 13 (437)                 | 0 (1)         | 8 (251)          | 0 (0)           | 5 (22)          | 27 (735)          |
|              | Peterborough County-City                | 0 (1)           | 0 (80)                   | 0 (0)         | 0 (76)           | 0 (1)           | 0 (1)           | 0 (159)           |
|              | Simcoe Muskoka District                 | 0 (2)           | 6 (261)                  | 0 (0)         | 0 (115)          | 0 (0)           | 1 (6)           | 7 (384)           |
|              | York Region                             | 0 (9)           | 10 (156)                 | 0 (0)         | 1 (101)          | 0 (0)           | 0 (6)           | 11 (272)          |
|              | <b>TOTAL CENTRAL EAST</b>               | <b>2 (43)</b>   | <b>33 (1120)</b>         | <b>0 (2)</b>  | <b>10 (646)</b>  | <b>0 (1)</b>    | <b>10 (49)</b>  | <b>55 (1861)</b>  |
| Toronto      | Toronto                                 | 7 (91)          | 24 (597)                 | 0 (1)         | 16 (998)         | 0 (0)           | 5 (58)          | 52 (1745)         |
|              | <b>TOTAL TORONTO</b>                    | <b>7 (91)</b>   | <b>24 (597)</b>          | <b>0 (1)</b>  | <b>16 (998)</b>  | <b>0 (0)</b>    | <b>5 (58)</b>   | <b>52 (1745)</b>  |
| South West   | Chatham-Kent                            | 0 (0)           | 0 (30)                   | 0 (0)         | 0 (26)           | 0 (0)           | 0 (0)           | 0 (56)            |
|              | Elgin-St. Thomas                        | 0 (0)           | 2 (40)                   | 0 (1)         | 1 (19)           | 0 (0)           | 0 (0)           | 3 (60)            |
|              | Grey Bruce                              | 0 (0)           | 2 (77)                   | 0 (0)         | 0 (38)           | 0 (0)           | 0 (2)           | 2 (117)           |
|              | Huron County                            | 0 (1)           | 0 (45)                   | 0 (1)         | 0 (20)           | 0 (0)           | 0 (1)           | 0 (68)            |
|              | Lambton County                          | 0 (1)           | 0 (40)                   | 0 (0)         | 1 (22)           | 0 (0)           | 1 (2)           | 2 (65)            |
|              | Middlesex-London                        | 0 (2)           | 2 (320)                  | 0 (0)         | 0 (67)           | 0 (0)           | 0 (3)           | 2 (392)           |
|              | Oxford County                           | 0 (1)           | 0 (34)                   | 0 (2)         | 0 (27)           | 0 (0)           | 0 (1)           | 0 (65)            |
|              | Perth District                          | 0 (2)           | 3 (20)                   | 0 (0)         | 1 (35)           | 0 (0)           | 1 (1)           | 5 (58)            |
|              | Windsor-Essex County                    | 0 (3)           | 2 (65)                   | 0 (0)         | 0 (37)           | 0 (0)           | 0 (5)           | 2 (110)           |
|              | <b>TOTAL SOUTHWEST</b>                  | <b>0 (10)</b>   | <b>11 (671)</b>          | <b>0 (4)</b>  | <b>3 (291)</b>   | <b>0 (0)</b>    | <b>2 (15)</b>   | <b>16 (991)</b>   |
| Central West | Brant County                            | 0 (5)           | 0 (65)                   | 0 (0)         | 0 (92)           | 0 (0)           | 0 (1)           | 0 (163)           |
|              | City Of Hamilton                        | 0 (1)           | 6 (515)                  | 0 (1)         | 3 (39)           | 0 (0)           | 3 (12)          | 12 (568)          |
|              | Haldimand-Norfolk                       | 0 (0)           | 0 (38)                   | 0 (0)         | 0 (14)           | 0 (0)           | 0 (2)           | 0 (54)            |
|              | Halton Region                           | 0 (2)           | 4 (199)                  | 0 (0)         | 1 (50)           | 0 (0)           | 1 (5)           | 6 (256)           |
|              | Niagara Region                          | 0 (1)           | 2 (159)                  | 0 (0)         | 0 (69)           | 0 (0)           | 1 (4)           | 3 (233)           |
|              | Waterloo Region                         | 0 (6)           | 0 (230)                  | 0 (0)         | 0 (120)          | 0 (0)           | 0 (3)           | 0 (359)           |
|              | Wellington-Dufferin-Guelph              | 0 (5)           | 5 (109)                  | 0 (1)         | 5 (98)           | 0 (0)           | 0 (7)           | 10 (220)          |
|              | <b>TOTAL CENTRAL WEST</b>               | <b>0 (20)</b>   | <b>17 (1315)</b>         | <b>0 (2)</b>  | <b>9 (482)</b>   | <b>0 (0)</b>    | <b>5 (34)</b>   | <b>31 (1853)</b>  |
|              | <b>TOTAL ONTARIO</b>                    | <b>10 (172)</b> | <b>133 (4828)</b>        | <b>0 (12)</b> | <b>41 (3013)</b> | <b>0 (1)</b>    | <b>27 (193)</b> | <b>211 (8219)</b> |

**Source:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/02/20].

\* The 'Other' influenza A category includes indeterminate, untypeable and other subtypes.

**Table 2.** Hospitalizations and deaths among confirmed influenza cases by age group: Ontario, week 7 and cumulative (rates, and numbers in brackets) for the 2012-2013 season

| Age Group    | Number of Hospitalizations | Cumulative Rate per 100,000 | Number of Deaths | Cumulative Rate per 100,000 |
|--------------|----------------------------|-----------------------------|------------------|-----------------------------|
| <1           | 3 (137)                    | 96.76                       | 0 (2)            | 1.41                        |
| 1-4          | 5 (183)                    | 32.10                       | 0 (3)            | 0.53                        |
| 5-14         | 2 (70)                     | 4.69                        | 0 (0)            | 0.00                        |
| 15-24        | 0 (54)                     | 2.99                        | 0 (0)            | 0.00                        |
| 25-44        | 6 (165)                    | 4.49                        | 1 (6)            | 0.16                        |
| 45-64        | 16 (386)                   | 10.46                       | 0 (21)           | 0.57                        |
| 65+          | 45 (1,506)                 | 82.12                       | 11 (165)         | 9.00                        |
| Unknown      | 0 (2)                      | -                           | 0 (0)            | -                           |
| <b>Total</b> | <b>77 (2,503)</b>          | <b>18.95</b>                | <b>12 (197)</b>  | <b>1.49</b>                 |

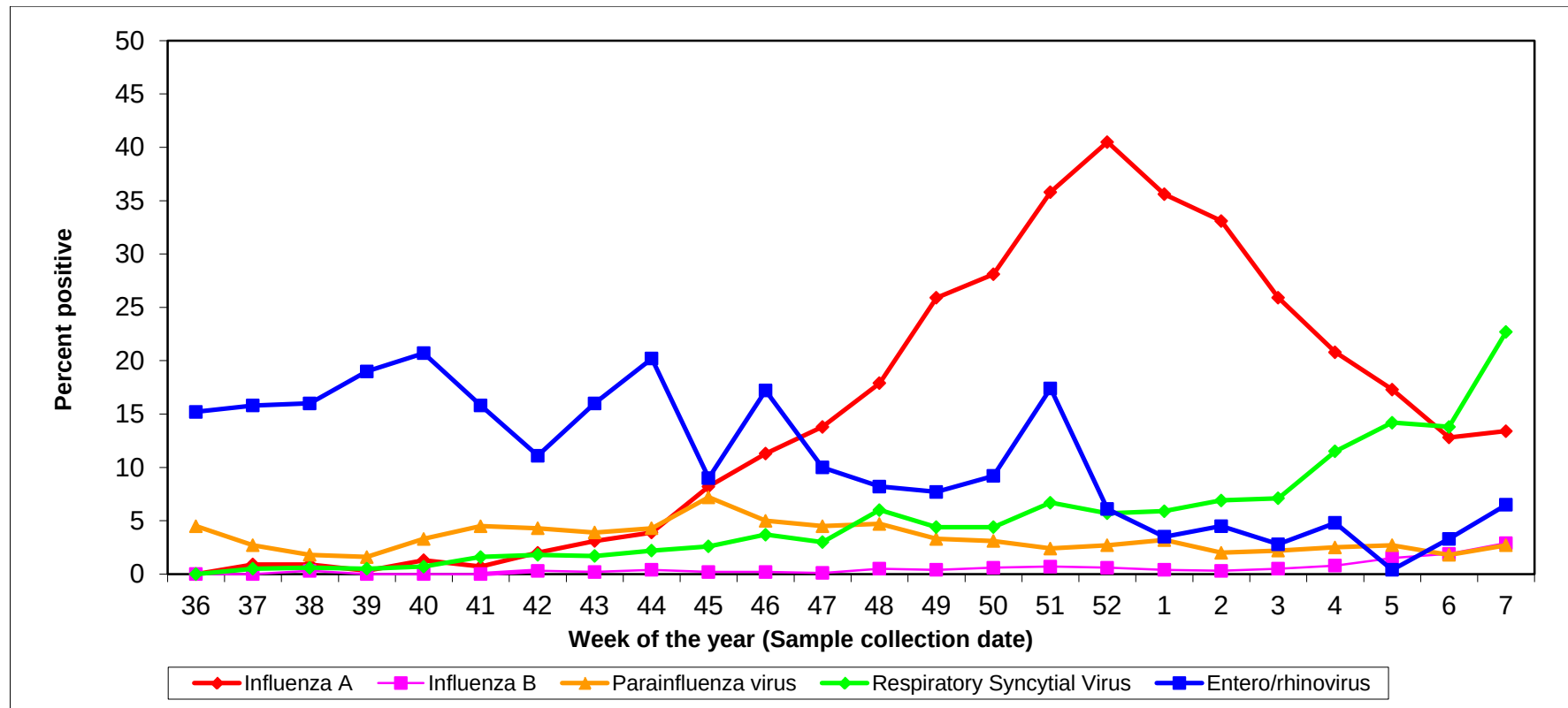
**Source:** Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/02/20]. Population data obtained from IntelliHEALTH Ontario, retrieved by Public Health Ontario [2012/01/13].

**Note:**

The numbers of hospitalizations and deaths provided in iPHIS need to be interpreted with caution because there are lags between the onset of illness, hospital admission or death, and when this information is reported to public health. Due to increased influenza activity over the prior few weeks, there may be additional delays in the reporting of hospitalizations and deaths beyond the usually expected reporting time lag.

Deaths in any influenza case are included; death attribution is not considered. In addition, the numbers of hospitalizations and deaths reported in iPHIS are believed to be an underestimation of the true experience in the Ontario population for many reasons, including underreporting of confirmed cases by physicians to local public health units, and ill persons not seeking medical care and therefore not getting tested.

**Figure 3.** Percentage of respiratory viral pathogens (influenza A, influenza B, parainfluenza virus, respiratory syncytial virus, entero/rhinovirus) detected among specimens tested by all methods at PHOL: Ontario, September 2, 2012 to February 16, 2013



**Source:** Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/02/19].

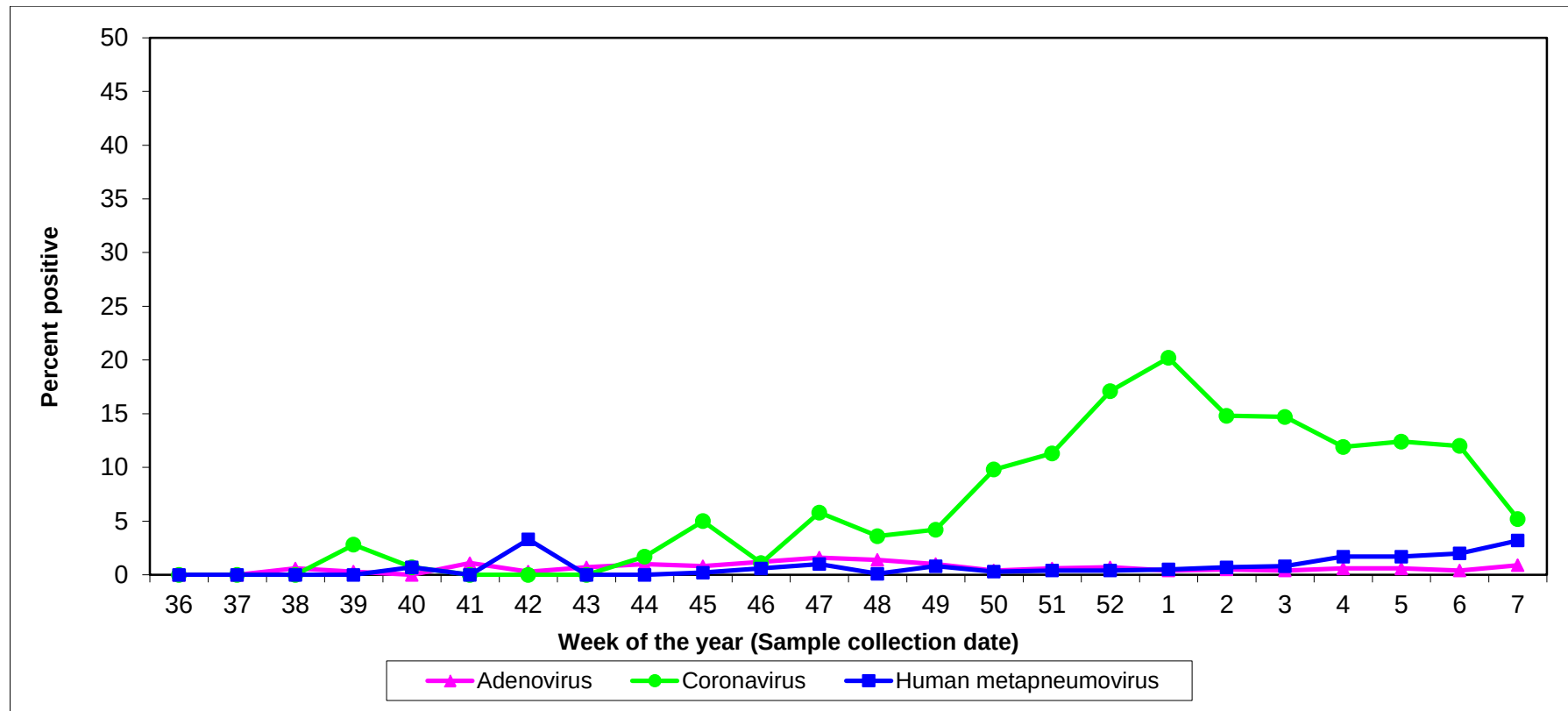
**Notes:**

**Interpret tail of all lines with caution due to reporting lags.** The data in this figure is presented by specimen collection date. Because of the lag time from the date the specimens were collected to the date test results are confirmed (up to 10 days for negative results to be finalized), not all specimens collected during the current weeks are included and the percent positivity for the most current week is more subject to change. Therefore, the most appropriate comparison for week 49, for example, is the percent positivity for week 48 that was reported in the Bulletin for week 48.

The PHOL performs the majority of testing for influenza and other respiratory viruses, but other microbiology laboratories also perform these tests. Therefore, the numbers reported here do not represent the total number of respiratory viruses identified in Ontario laboratories.

These data represent the number of specimens tested which may not necessarily correspond with the number of patients as more than one specimen may have been submitted per patient.

**Figure 4.** Percentage of respiratory viral pathogens (coronavirus, metapneumovirus, adenovirus) detected among specimens tested by all methods at PHOL: Ontario, September 2, 2012 to February 16, 2013



**Source:** Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/02/19].

**Notes:**

**Interpret tail of all lines with caution due to reporting lags.** The data in this figure is presented by specimen collection date. Because of the lag time from the date the specimens were collected to the date test results are confirmed (up to 10 days for negative results to be finalized), not all specimens collected during the current weeks are included and the percent positivity for the most current week is more subject to change. Therefore, the most appropriate comparison for week 49, for example, is the percent positivity for week 48 that was reported in the Bulletin for week 48.

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**Table 3.** Number and percent positivity (in brackets) of respiratory specimens tested by all methods for influenza and other respiratory viruses: Ontario, week 7 and cumulative for the 2012-2013 season

| Detected viruses            | Number and specimen percent positivity |                  | Total number of specimens tested |              |
|-----------------------------|----------------------------------------|------------------|----------------------------------|--------------|
|                             | Current n (%)                          | Cumulative n (%) | Current n                        | Cumulative n |
| Influenza A                 | 199 (10.47)                            | 7,647 (19.69)    | 1,900                            | 38,829       |
| Influenza B                 | 30 (1.58)                              | 190 (0.49)       | 1,900                            | 38,829       |
| Parainfluenza virus         | 29 (1.87)                              | 842 (2.80)       | 1,550                            | 30,074       |
| Adenovirus                  | 9 (0.58)                               | 176 (0.59)       | 1,550                            | 30,032       |
| Respiratory Syncytial Virus | 259 (14.82)                            | 2,263 (6.80)     | 1,748                            | 33,283       |
| Enterovirus/rhinovirus      | 22 (3.56)                              | 1,127 (8.14)     | 618                              | 13,837       |
| Human metapneumovirus       | 55 (3.58)                              | 326 (1.21)       | 1,538                            | 26,866       |
| Coronavirus                 | 19 (3.37)                              | 472 (4.76)       | 563                              | 9,908        |

**Source:** Centre for Immunization and Respiratory Infectious Diseases, Public Health Agency of Canada (PHAC). These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada from 16 labs in Ontario and do not include data from late reports to PHAC for the current season: Week 7, 2013. Please note that the last version received from PHAC as of 1:30 PM on February 21, 2013 was used.

**Notes:**

The data in this table is based on when test results are reported. Total numbers reported include late reports from previous weeks; therefore, totals may not be equal to the sum of the weekly numbers.

Cumulative numbers include reports from week 35, as reporting by PHAC includes week 35 as part of the 2012-2013 season. Cumulative numbers for the season to date are also available through FluWatch: <http://www.phac-aspc.gc.ca/fluwatch/>

The numbers reported in this table represent respiratory viruses identified at both Public Health Ontario Laboratories and other laboratories in Ontario.

These data represent the number of specimens tested which may not necessarily correspond with the number of patients as more than one specimen may have been submitted per patient.

**Table 4.** Institutional respiratory infection outbreaks: Ontario, week 7 and total for the 2012-2013 season

| <b>Institutional Respiratory Infection Outbreaks</b>               |            |                         |
|--------------------------------------------------------------------|------------|-------------------------|
| <b>New outbreaks</b>                                               | <b>N</b>   | <b>% (of outbreaks)</b> |
| Influenza A (All subtypes)                                         | 2          | 22.2                    |
| Influenza B                                                        | 1          | 11.1                    |
| Influenza A and B                                                  | 0          | 0.0                     |
| Parainfluenza (All types)                                          | 0          | 0.0                     |
| RSV                                                                | 0          | 0.0                     |
| Combined outbreaks                                                 | 0          | 0.0                     |
| Other organisms                                                    | 1          | 11.1                    |
| Entero/rhinovirus                                                  | 0          | 0.0                     |
| No organism identified                                             | 5          | 55.6                    |
| <b>TOTAL</b>                                                       | <b>9</b>   | <b>100.0</b>            |
| <b>Total respiratory infection outbreaks in the season to date</b> |            |                         |
| Influenza A (All subtypes)                                         | 513        | 56.4                    |
| Influenza B                                                        | 7          | 0.8                     |
| Influenza A and B                                                  | 2          | 0.2                     |
| Parainfluenza (All types)                                          | 21         | 2.3                     |
| RSV                                                                | 20         | 2.2                     |
| Combined outbreaks                                                 | 41         | 4.5                     |
| Other organisms                                                    | 58         | 6.4                     |
| Entero/rhinovirus                                                  | 148        | 16.3                    |
| No organism identified                                             | 100        | 11.0                    |
| <b>TOTAL</b>                                                       | <b>910</b> | <b>100.0</b>            |
| <b>Types of institutions –All outbreaks in the season to date</b>  |            |                         |
| Long-term care homes                                               | 546        | 60.0                    |
| Hospitals                                                          | 70         | 7.7                     |
| Retirement homes                                                   | 171        | 18.8                    |
| Other                                                              | 4          | 0.4                     |
| Unknown                                                            | 119        | 13.1                    |
| <b>TOTAL</b>                                                       | <b>910</b> | <b>100.0</b>            |

**Source:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/02/20].

**Notes:**

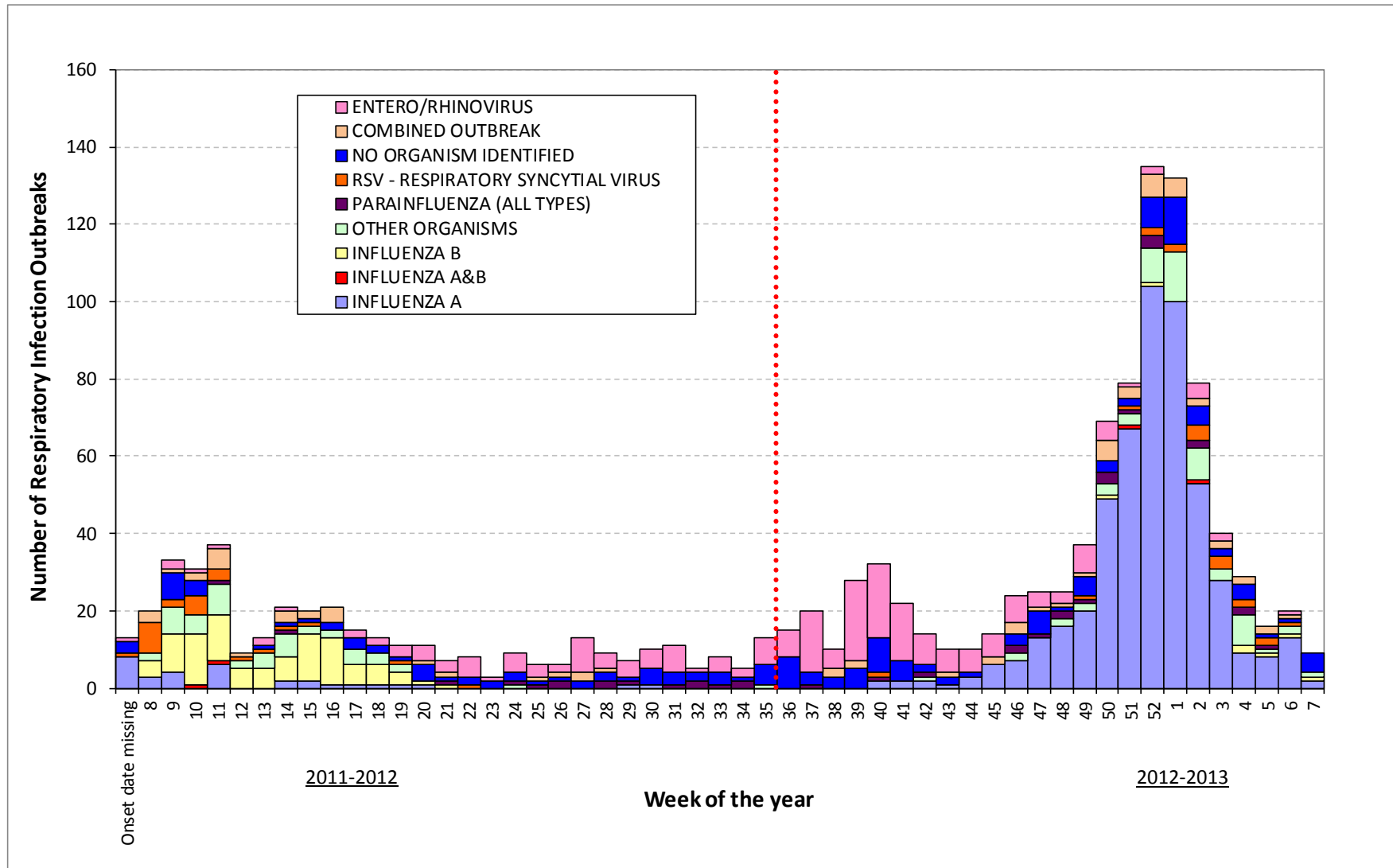
**New outbreaks** are those in which the date of onset of illness in the first case occurred and was recorded through iPHIS in the current surveillance period; i.e. February 10, 2013 – February 16, 2013.

**Season to date** includes all outbreaks in which the date of onset of illness in the first case occurred up to the current reporting week.

**Combined outbreaks** include outbreaks in which more than one non-influenza organism has been identified (e.g. RSV, parainfluenza, rhinovirus, etc.).

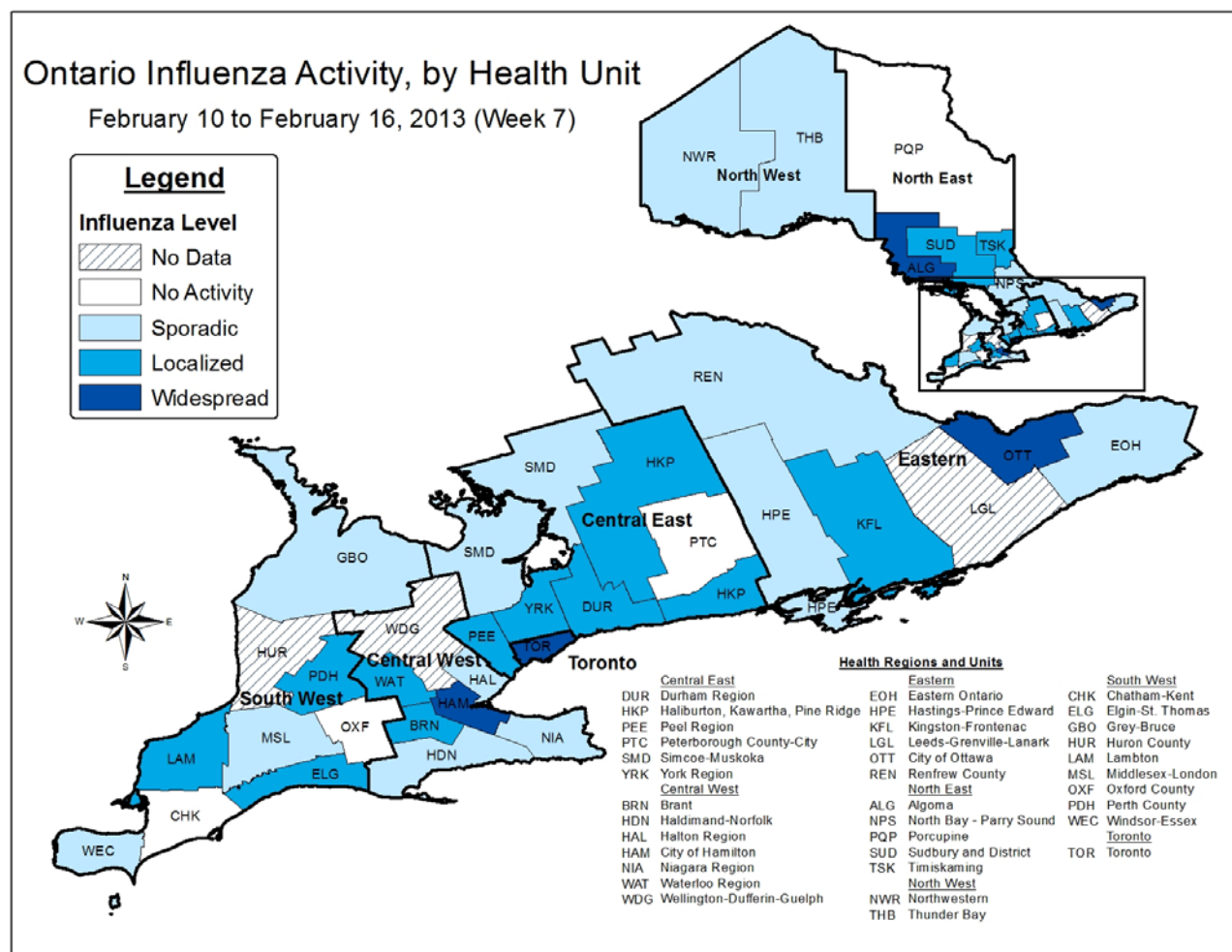
**Other organisms** include outbreaks involving other aetiological agents, such as human metapneumovirus, adenovirus, and coronavirus.

**Figure 5.** Institutional respiratory infection outbreaks by week of illness onset in the first case: Ontario, February 19, 2012 to February 16, 2013



**Source:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/02/20].

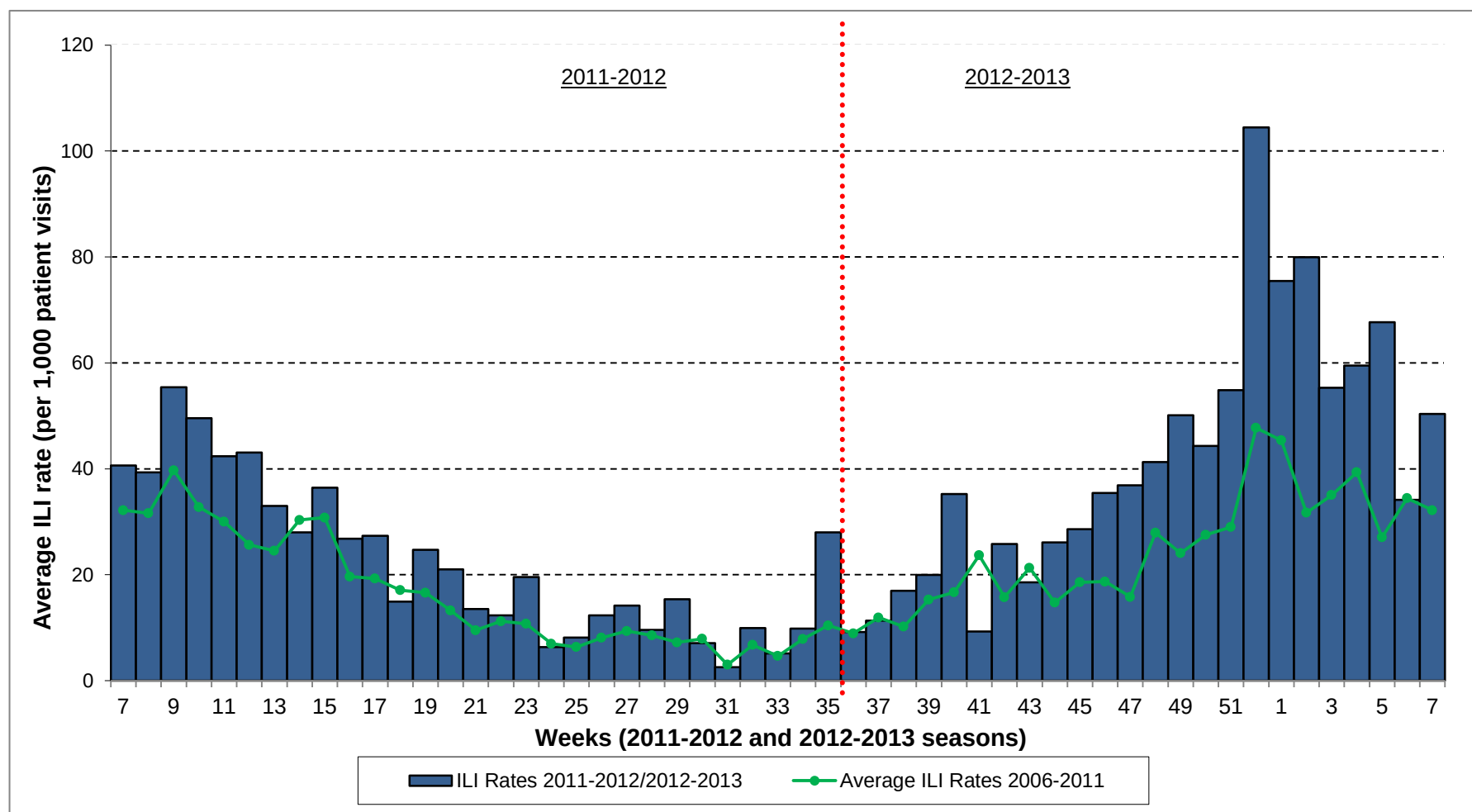
**Figure 6.** Influenza activity levels by health unit: Ontario, week 7



**Source:** Public Health Ontario [Provincial Influenza Activity Report (Appendix C) Database]

**Note:** Influenza activity levels are assigned by local public health units and reported to Public Health Ontario by the Tuesday following the end of the surveillance week at 4:00PM. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory confirmed institutional respiratory infection outbreaks. Please click here for [detailed definitions for the 2012-2013 season](#).

**Figure 7.** Average influenza-like-illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinels by report week compared to historical average (2006-2007 to 2011-2012 seasons): Ontario, February 19, 2012 to February 16, 2013



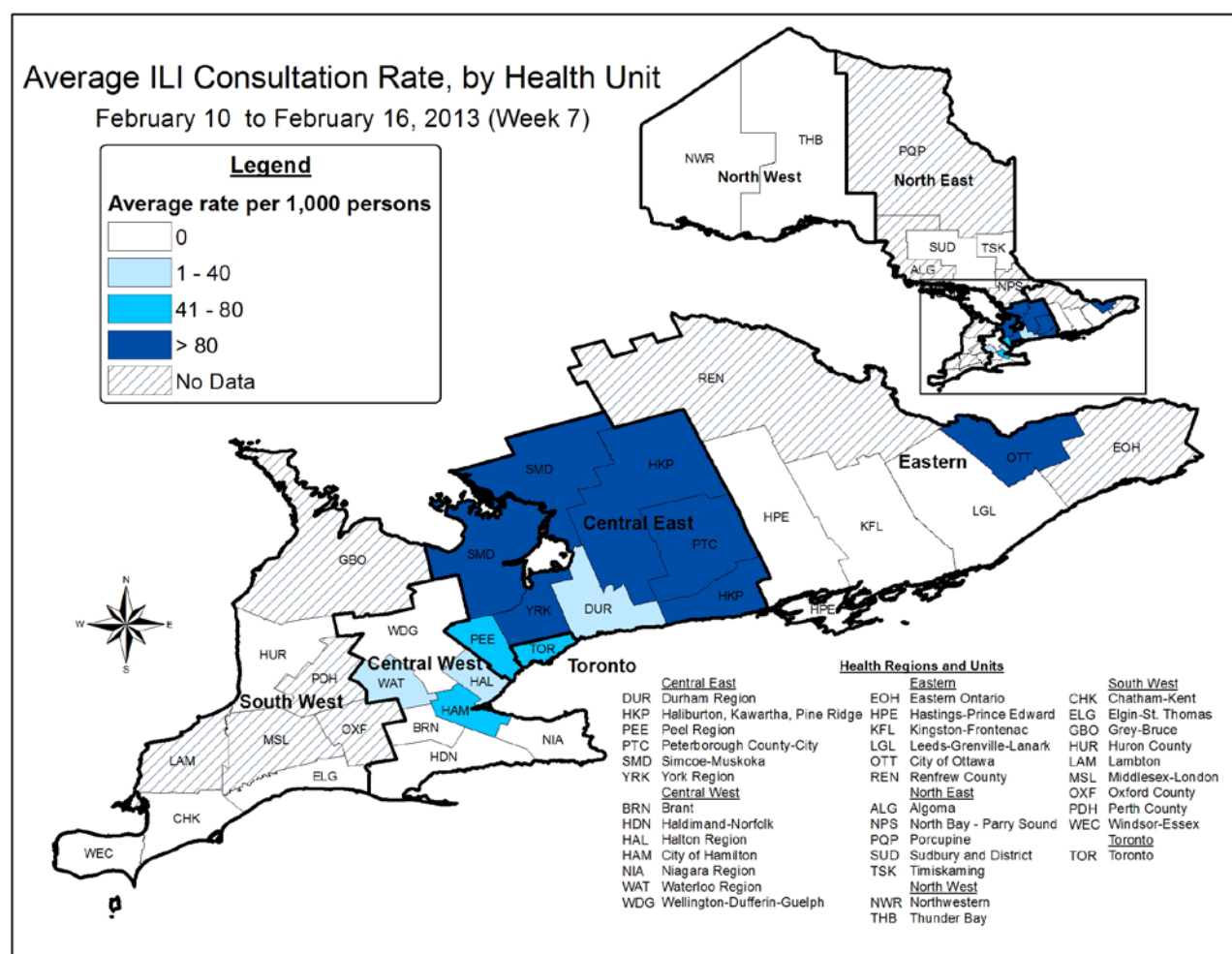
Source: Public Health Agency of Canada

**Notes:**

Sentinel information is reported to Public Health Agency of Canada. Due to small numbers of sentinels currently reporting (particularly for week 52, 2012 due to reduced reporting over the holidays), readers are advised to review overall trends and place less emphasis on week to week fluctuations.

Ontario average ILI rates include data from the 2006-2007 to the 2011-2012 seasons, excluding ILI rates during the time period of the influenza pandemic in Ontario (April 2009 to January 2010) due to the incomparability of those rates to a regular influenza season.

**Figure 8.** Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) by health unit as reported by sentinels: Ontario, week 7\*



**Source:** Public Health Agency of Canada

**Note:** Sentinels report ILI and patient data to the Public Health Agency of Canada; 72 sentinels reported in week 7, all of which were matched to a health unit and represented in the above map.

**Table 5.** Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) by age group as reported by sentinels: Ontario, week 7\*

| Age Category                                     | 0 – 4  | 5 – 19 | 20 – 64 | 65 +  | Unknown | TOTAL |
|--------------------------------------------------|--------|--------|---------|-------|---------|-------|
| Number of ILI Consultations                      | 14     | 14     | 41      | 17    | 0       | 86    |
| ILI Consultation Rate (per 1,000 patient visits) | 108.53 | 78.21  | 39.50   | 47.09 | 0.00    | 50.38 |

**Source:** Public Health Agency of Canada

**Note:** Sentinel information is reported to the Public Health Agency of Canada; 72 sentinels reported in week 7.

\* Small numbers of sentinels reporting can make the ILI rates unstable. Please interpret these data correspondingly. Please interpret the ILI rates presented in Figure 8 and Table 5 correspondingly.

**APPENDIX****Table I.** Number of specimens submitted to PHOL and results for influenza by health unit: Ontario, week 7 and cumulative (in brackets) for the 2012-2013 season

| Health Unit                                 | Specimens submitted | Influenza B | Number of positive influenza A specimens |               |                   | Total tested | % positive influenza A |
|---------------------------------------------|---------------------|-------------|------------------------------------------|---------------|-------------------|--------------|------------------------|
|                                             |                     |             | H3                                       | A(H1N1) pdm09 | Total influenza A |              |                        |
| ALGOMA DISTRICT                             | 16 (426)            | 1 (2)       | 0 (38)                                   | 0 (0)         | 0 (91)            | 11 (420)     | 0.0 (21.7)             |
| BRANT COUNTY                                | 12 (552)            | 0 (1)       | 0 (100)                                  | 0 (5)         | 0 (152)           | 12 (532)     | 0.0 (28.6)             |
| CHATHAM-KENT                                | 3 (182)             | 0 (0)       | 0 (26)                                   | 0 (0)         | 0 (50)            | 3 (179)      | 0.0 (27.9)             |
| CITY OF HAMILTON                            | 9 (315)             | 0 (1)       | 3 (45)                                   | 0 (2)         | 3 (90)            | 7 (298)      | 42.9 (30.2)            |
| CITY OF OTTAWA                              | 2 (127)             | 0 (0)       | 1 (23)                                   | 0 (0)         | 1 (39)            | 1 (119)      | 100.0 (32.8)           |
| CITY OF TORONTO                             | 205 (6,013)         | 5 (39)      | 14 (1,125)                               | 3 (107)       | 19 (1,504)        | 130 (5,706)  | 14.6 (26.4)            |
| DURHAM REGIONAL                             | 30 (1,047)          | 3 (14)      | 1 (80)                                   | 0 (13)        | 1 (155)           | 22 (1,000)   | 4.5 (15.5)             |
| ELGIN-ST. THOMAS                            | 13 (187)            | 0 (0)       | 1 (31)                                   | 0 (0)         | 4 (55)            | 12 (185)     | 33.3 (29.7)            |
| EASTERN ONTARIO                             | 7 (234)             | 0 (0)       | 2 (46)                                   | 0 (0)         | 3 (79)            | 7 (229)      | 42.9 (34.5)            |
| GREY BRUCE                                  | 25 (524)            | 0 (2)       | 0 (92)                                   | 0 (1)         | 1 (134)           | 21 (503)     | 4.8 (26.6)             |
| HALTON REGIONAL                             | 30 (757)            | 0 (3)       | 0 (71)                                   | 0 (3)         | 0 (147)           | 22 (716)     | 0.0 (20.5)             |
| HALDIMAND-NORFOLK                           | 6 (192)             | 0 (3)       | 0 (21)                                   | 0 (0)         | 0 (46)            | 3 (176)      | 0.0 (26.1)             |
| HALIBURTON-KAWARTHA-PINE RIDGE DISTRICT     | 10 (533)            | 0 (4)       | 0 (49)                                   | 0 (1)         | 1 (129)           | 4 (519)      | 25.0 (24.9)            |
| HASTINGS AND PRINCE EDWARD COUNTIES         | 7 (520)             | 0 (1)       | 0 (110)                                  | 0 (0)         | 0 (139)           | 6 (511)      | 0.0 (27.2)             |
| HURON COUNTY                                | 2 (233)             | 0 (1)       | 0 (30)                                   | 0 (1)         | 0 (59)            | 2 (231)      | 0.0 (25.5)             |
| KINGSTON-FRONTENAC AND LENNOX AND ADDINGTON | 17 (787)            | 0 (5)       | 1 (140)                                  | 0 (5)         | 4 (250)           | 12 (774)     | 33.3 (32.3)            |
| LAMBTON                                     | 12 (314)            | 0 (2)       | 0 (30)                                   | 0 (1)         | 0 (63)            | 11 (312)     | 0.0 (20.2)             |
| LEEDS-GRENVILLE AND LANARK DISTRICT         | 5 (271)             | 0 (5)       | 0 (52)                                   | 0 (1)         | 0 (80)            | 4 (268)      | 0.0 (29.9)             |
| MIDDLESEX-LONDON                            | 11 (494)            | 0 (1)       | 0 (78)                                   | 1 (3)         | 1 (118)           | 11 (476)     | 9.1 (24.8)             |

**Ontario Respiratory Virus Bulletin, 2012-2013 (Week 7: February 10, 2013 – February 16, 2013)**

| Health Unit                    | Specimens submitted | Influenza B     | Number of positive influenza A specimens |                |                   | Total tested        | % positive influenza A |
|--------------------------------|---------------------|-----------------|------------------------------------------|----------------|-------------------|---------------------|------------------------|
|                                |                     |                 | H3                                       | A(H1N1) pdm09  | Total influenza A |                     |                        |
| NIAGARA REGIONAL AREA          | 25 (812)            | 0 (3)           | 1 (83)                                   | 0 (2)          | 1 (203)           | 19 (756)            | 5.3 (26.9)             |
| NORTH BAY PARRY SOUND DISTRICT | 12 (589)            | 0 (2)           | 0 (74)                                   | 0 (0)          | 1 (113)           | 8 (578)             | 12.5 (19.6)            |
| NORTHWESTERN                   | 15 (322)            | 0 (2)           | 0 (20)                                   | 0 (0)          | 1 (44)            | 15 (318)            | 6.7 (13.8)             |
| OXFORD COUNTY                  | 3 (208)             | 0 (0)           | 0 (34)                                   | 0 (1)          | 0 (55)            | 3 (201)             | 0.0 (27.4)             |
| PERTH DISTRICT                 | 12 (290)            | 0 (1)           | 1 (36)                                   | 0 (2)          | 4 (54)            | 10 (286)            | 40.0 (18.9)            |
| PEEL REGIONAL                  | 80 (3,100)          | 2 (20)          | 1 (299)                                  | 2 (31)         | 4 (557)           | 43 (2,976)          | 9.3 (18.7)             |
| PORCUPINE                      | 15 (342)            | 0 (0)           | 0 (32)                                   | 0 (0)          | 1 (57)            | 10 (333)            | 10.0 (17.1)            |
| PETERBOROUGH COUNTY-CITY       | 10 (321)            | 0 (0)           | 0 (42)                                   | 1 (2)          | 1 (72)            | 5 (302)             | 20.0 (23.8)            |
| RENFREW COUNTY AND DISTRICT    | 2 (155)             | 0 (6)           | 0 (17)                                   | 0 (1)          | 0 (37)            | 1 (153)             | 0.0 (24.2)             |
| SIMCOE MUSKOKA DISTRICT        | 60 (2,094)          | 1 (6)           | 1 (124)                                  | 0 (4)          | 3 (393)           | 38 (2,037)          | 7.9 (19.3)             |
| SUDBURY AND DISTRICT           | 24 (488)            | 0 (0)           | 0 (61)                                   | 0 (2)          | 2 (103)           | 20 (471)            | 10.0 (21.9)            |
| THUNDER BAY DISTRICT           | 13 (284)            | 2 (4)           | 0 (53)                                   | 0 (0)          | 0 (75)            | 11 (268)            | 0.0 (28.0)             |
| TIMISKAMING                    | 3 (87)              | 0 (0)           | 1 (12)                                   | 0 (2)          | 3 (26)            | 3 (84)              | 100.0 (31.0)           |
| WATERLOO                       | 22 (892)            | 0 (4)           | 0 (172)                                  | 0 (9)          | 0 (252)           | 20 (879)            | 0.0 (28.7)             |
| WELLINGTON-DUFFERIN-GUELPH     | 30 (776)            | 0 (4)           | 5 (100)                                  | 0 (5)          | 8 (208)           | 28 (740)            | 28.6 (28.1)            |
| WINDSOR-ESSEX COUNTY           | 7 (339)             | 2 (8)           | 0 (42)                                   | 0 (3)          | 1 (94)            | 6 (330)             | 16.7 (28.5)            |
| YORK REGIONAL                  | 48 (1,366)          | 0 (4)           | 7 (156)                                  | 0 (12)         | 8 (246)           | 25 (1,284)          | 32.0 (19.2)            |
| OUT OF PROVINCE                | 1 (71)              | 0 (1)           | 0 (5)                                    | 0 (1)          | 0 (17)            | 1 (70)              | 0.0 (24.3)             |
| <b>TOTAL ONTARIO</b>           | <b>804 (26,244)</b> | <b>16 (149)</b> | <b>40 (3,549)</b>                        | <b>7 (220)</b> | <b>76 (5,986)</b> | <b>567 (25,220)</b> | <b>13.4 (23.7)</b>     |

**Source:** Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/02/19].

**Notes:**

Cumulative numbers are from September 2, 2012, and are displayed in brackets.

Health unit reflects the jurisdiction where the patient resides. In the event this is not available, health unit of the specimen submitter is used.

The PHOL performs the majority of testing for influenza and other respiratory viruses, but other laboratories also perform these tests. Therefore, the numbers reported here do not represent the total number of respiratory viruses identified in Ontario laboratories.

The data in this table are presented by specimen collection date. Because of the lag time from the date the specimens were collected to the date test results are confirmed (up to 10 days for negative results to be finalized), not all specimens collected during the current weeks are included and the percent positivity for the most current week may be overestimated. Therefore, the most appropriate comparison for week 49, for example, is the percent positivity for week 48 that was reported in the Bulletin for week 48.

These data represent the number of specimens tested which may not necessarily correspond with the number of patients as more than one specimen may have been submitted per patient.



**Table II.** Strain characterization completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2012 to February 21, 2013

| Influenza strains                                         | Ontario | Canada |
|-----------------------------------------------------------|---------|--------|
| <b>Influenza A (H3N2)</b><br>A/Victoria/361/2011-like     | 120     | 405    |
| <b>Influenza A (H1N1)pdm09</b><br>A/California/07/09-like | 67      | 76     |
| <b>Influenza B</b><br>B/Brisbane/60/2008-like*            | 5       | 15     |
| <b>Influenza B</b><br>B/Wisconsin/01/2010-like            | 50      | 73     |

**Source:** Influenza and Respiratory Viruses Section, National Microbiology Laboratory (NML).

**Note:** The World Health Organization (WHO) recommended influenza vaccine strains for the Northern Hemisphere for the [2012-2013 season](#) are: A/California/7/2009-like (A H1N1pdm09-like virus); A/Victoria/361/2011 (H3N2)-like virus; and B/Wisconsin/1/2010-like virus.

**Update (February 21, 2013):** The WHO has released the recommended influenza vaccine strains for the Northern Hemisphere for the [2013-2014 season](#): A/California/7/2009-like (A H1N1pdm09-like virus); A/Victoria/361/2011 (H3N2)-like virus; and B/Massachusetts/2/2012-like virus.

\* This strain was the recommended influenza B component for the 2011-2012 influenza vaccine.

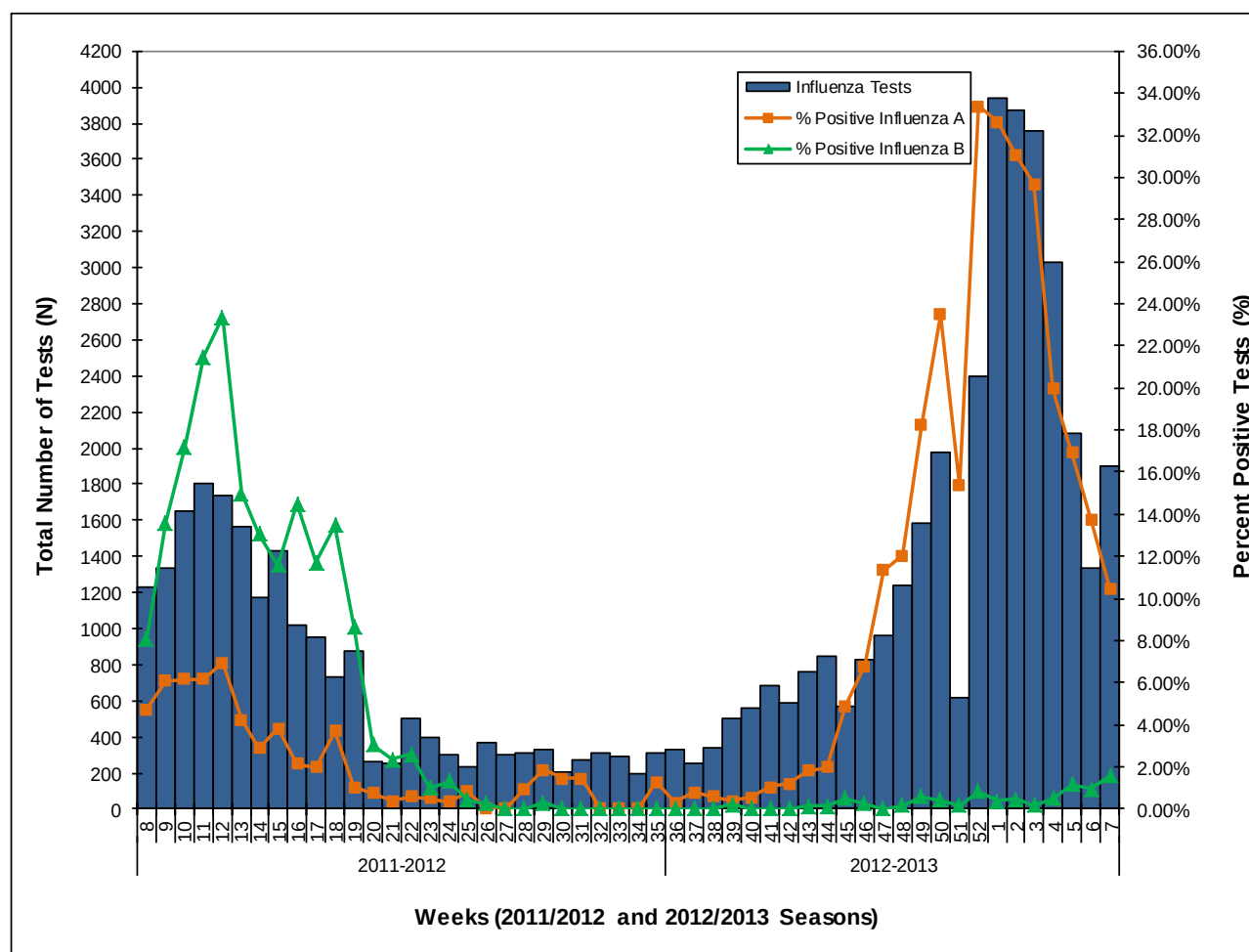
**Table III.** Amantadine, Oseltamivir and Zanamivir susceptibility assays completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2012 to February 21, 2013

| Influenza strains              | Amantadine |    |        |    | Oseltamivir |     |        |     | Zanamivir |     |        |     |
|--------------------------------|------------|----|--------|----|-------------|-----|--------|-----|-----------|-----|--------|-----|
|                                | ONTARIO    |    | CANADA |    | ONTARIO     |     | CANADA |     | ONTARIO   |     | CANADA |     |
|                                | R          | S  | R      | S  | R           | S   | R      | S   | R         | S   | R      | S   |
| <b>Influenza A (H3N2)</b>      | 212        | 0  | 589    | 0  | 0           | 116 | 0      | 382 | 0         | 116 | 0      | 381 |
| <b>Influenza A (H1N1)pdm09</b> | 51         | 0  | 62     | 0  | 0           | 49  | 0      | 58  | 0         | 48  | 0      | 56  |
| <b>Influenza B</b>             | NA         | NA | NA     | NA | 0           | 47  | 0      | 77  | 0         | 47  | 0      | 77  |

(R = Resistant, S = Susceptible, NA = Not Applicable)

**Source:** Influenza and Respiratory Viruses Section, National Microbiology Laboratory (NML).

**Figure I.** Total number of influenza tests performed and percent of positive tests by report week: Ontario, February 19, 2012 to February 16, 2013



**Source:** Public Health Agency of Canada (PHAC). These data have been obtained from the PHAC Respiratory Virus Detection tables from 16 labs in Ontario and do not include data from late reports to PHAC. Please note that the last version received from PHAC as of 1:30 PM on February 21, 2013 was used.

**Notes:**

The data in figure is based on when test results are reported.

Cumulative numbers for the season to date are also available through FluWatch: <http://www.phac-aspc.gc.ca/fluwatch/>

The numbers reported in this table represent respiratory viruses identified in both Public Health Ontario Laboratories and other microbiology laboratories in Ontario.

These data represent the number of specimens tested which may not necessarily correspond with the number of patients as more than one specimen may have been submitted per patient.

**Bacterial respiratory pathogens identified at PHOL, week 7**

**Table IV.** Number and percent positivity (in brackets) of respiratory specimens tested by all methods at PHOL for any *Mycoplasma pneumoniae* and *Chlamydophila pneumoniae* species: Ontario, week 7 and cumulative for the 2012-2013 season

| Detected organism               | Number and percent positive specimens |                  | Total number of specimens tested |              |
|---------------------------------|---------------------------------------|------------------|----------------------------------|--------------|
|                                 | Current n (%)                         | Cumulative n (%) | Current n                        | Cumulative n |
| <i>Mycoplasma pneumoniae</i>    | 0 (0.0)                               | 15 (2.0)         | 10                               | 769          |
| <i>Chlamydophila pneumoniae</i> | 0 (0.0)                               | 1 (0.1)          | 10                               | 769          |

**Source:** Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/02/19].

**Table V.** Number and percent positivity (in brackets) of respiratory specimens tested by all methods at PHOL for any *Bordetella* species: Ontario, week 7 and cumulative for the year since January 1, 2013

| Detected organism               | Number and percent positive specimens |                  | Total number of specimens tested |              |
|---------------------------------|---------------------------------------|------------------|----------------------------------|--------------|
|                                 | Current n (%)                         | Cumulative n (%) | Current n                        | Cumulative n |
| <i>Bordetella pertussis</i>     | 1 (1.2)                               | 18 (2.8)         | 81                               | 637          |
| <i>Bordetella parapertussis</i> | 0 (0.0)                               | 0 (0.0)          | 81                               | 637          |
| <i>Bordetella holmesii</i>      | 0 (0.0)                               | 0 (0.0)          | 81                               | 637          |

**Source:** Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/02/19].