# Ontario Influenza Bulletin 2008-2009 Season

Ministry of Health & Long-Term Care
Public Health Division

## SURVEILLANCE WEEK 24 (June 14, 2009– June 20, 2009)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from June 14, 2009- June 20, 2009, (Week 24). The analysis for this issue occurred on June 25, 2009, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during week 24, 2009, was similar as compared to week 23, 2009. There were 216 new confirmed cases of influenza reported through integrated Public Health Information System (iPHIS) from health units; this count includes 165 laboratory confirmed cases of the novel H1N1 influenza A virus. During week 24, new laboratory confirmed cases of Novel H1N1 Influenza A continued to be seen across the province with the Greater Toronto Area and Ottawa still experiencing most of these cases. A large number of cases were also seen in Northwestern. There was one new report of an institutional novel H1N1 influenza A outbreak. For week 24, Central East health region reported 'localized' level activity while the remaining health regions reported 'sporadic' level activity. The rate of influenza-like illness (ILI) in patients seen by sentinel physicians is well above what is expected for this time of the year, particularly for those less than 19 years of age.

For a definition of ILI activity levels and links to websites providing current influenza information from other sources, please refer to the attached Appendix- I. If you would like to provide feedback on the Bulletin, please contact Christine D'Souza (christine.dsouza1@ontario.ca, 416-212-5323), Michael Whelan (michael.whelan@ontario.ca, 416-327-9174) or Anne-Luise Winter (anne-luise.winter@ontario.ca, 416-327-7301).

**Table 1:** Summary of confirmed influenza cases and institutional influenza outbreaks by health region (Week 24, 2009)

| Confirmed influenza cases*† | HEALTH REGION | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | North West | North East | Eastern | Central East | Toronto | South West | Central West | |
| Novel Influenza A H1N1 | 11 | 1 | 40 | 62 | 41 | 2 | 8 | 165 |
| Influenza A (Other Subtypes/Not Subtyped) | 0 | 1 | 4 | 13 | 15 | 3 | 15 | 51 |
| Influenza B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Influenza A & B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***Total new cases*** | 11 | 2 | 44 | 75 | 56 | 5 | 23 | 216 |
| **Institutional outbreaks of novel Influenza A H1N1 ‡** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **1** |
| **Institutional outbreaks of Influenza (Other Subtypes/Not Subtpyed)‡** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

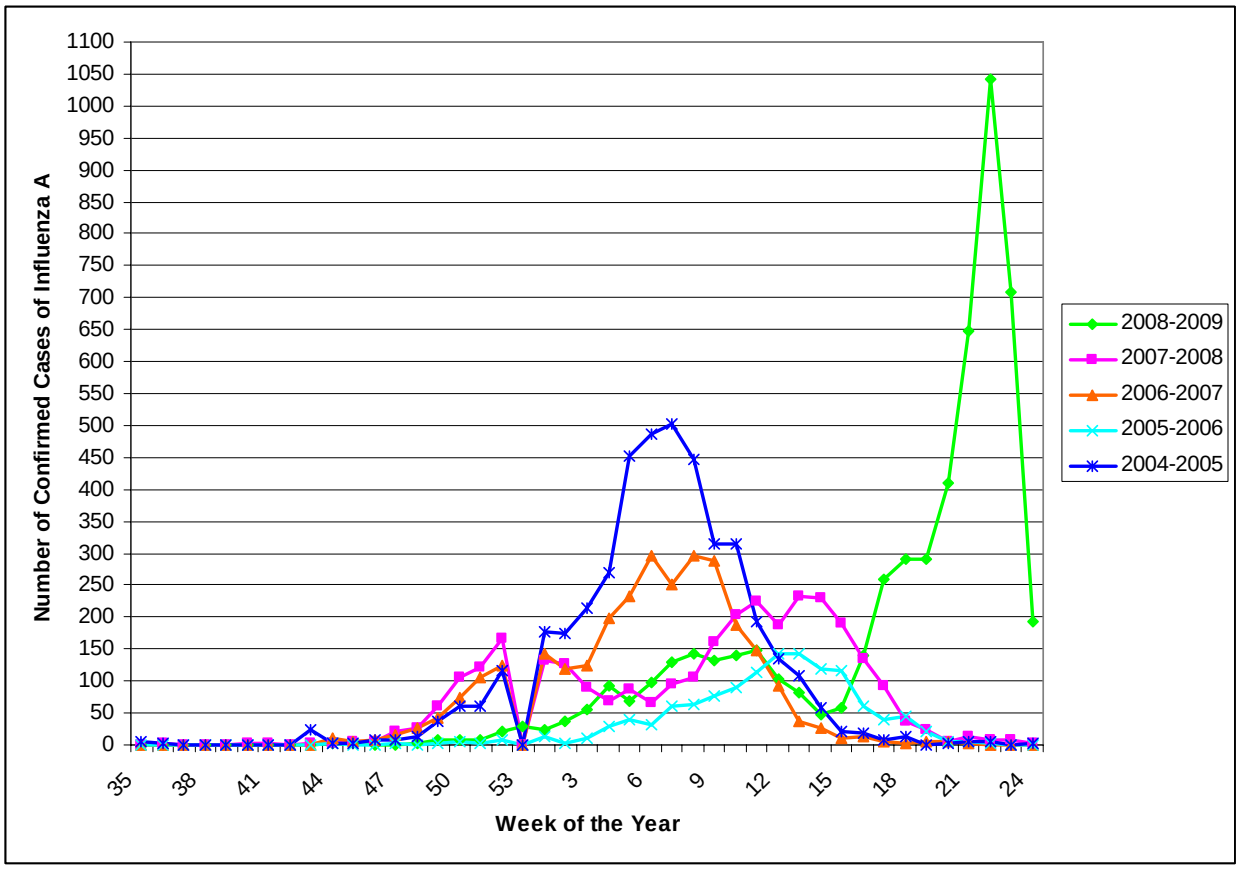
**SOURCE:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database,extracted [25/06/2009].

* Includes reports of confirmed influenza through iPHIS, as well as cases in institutional outbreaks, with dates of onset In the first case in the surveillance period.

‡ Confirmed outbreaks in institutions with onset date of symptoms during the surveillance period.

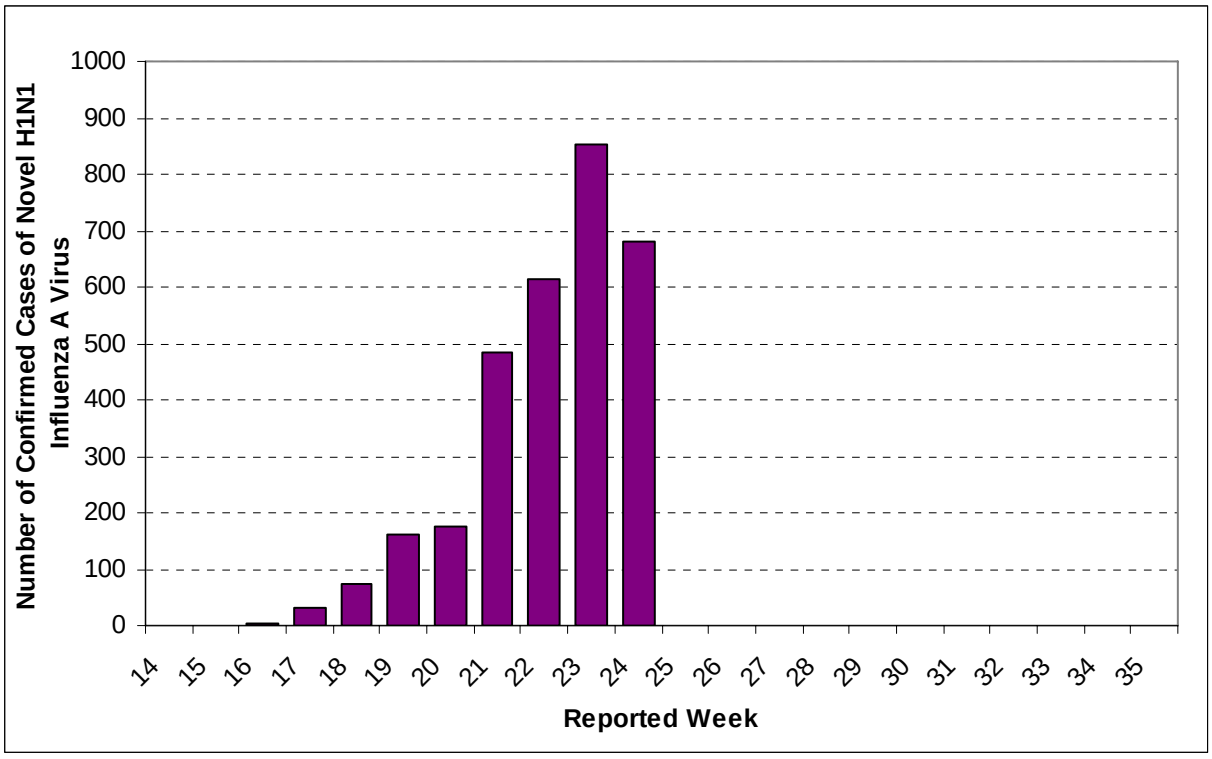
† 'To date 5 cases of Novel Influenza A H1N1 cases have been reported in people who reside outside of Ontario.

**Figure 1:** Confirmed Cases of Influenza A in Ontario by week between September 1 and June 20, 2004-2009[†*]



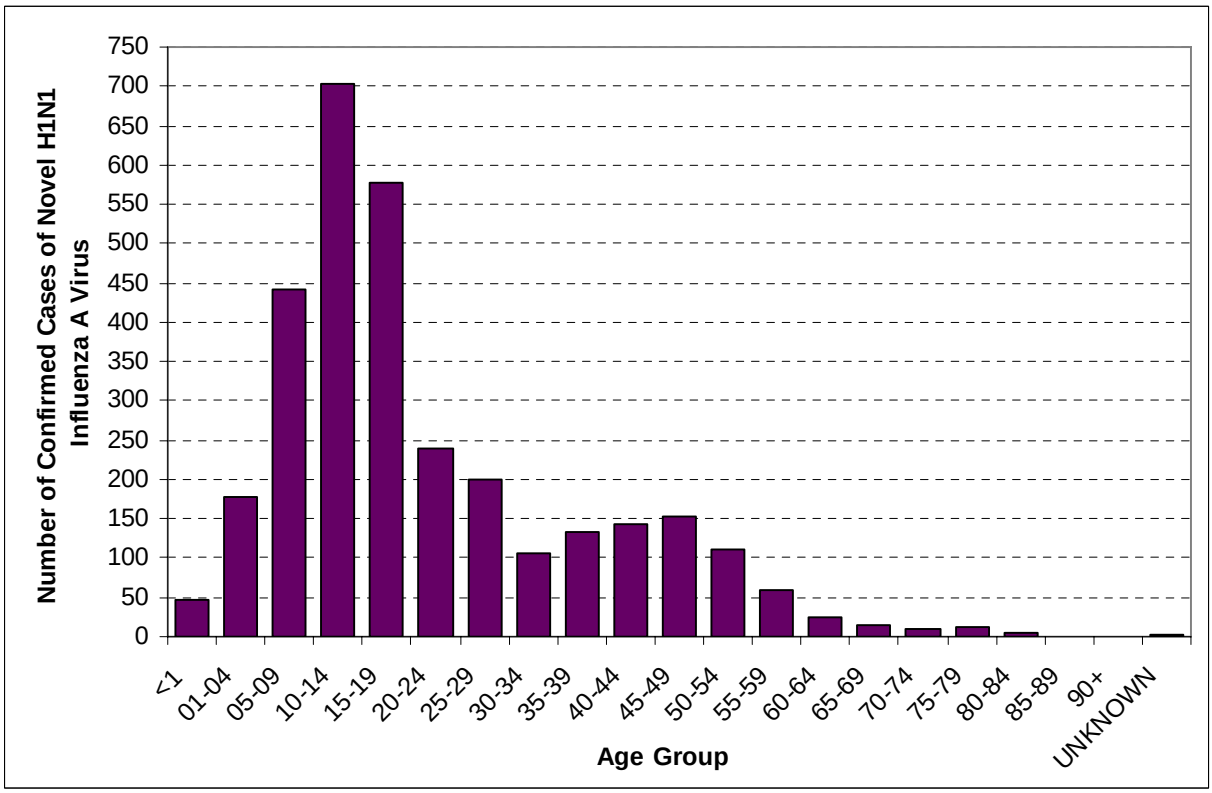

**SOURCE:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [25/06/2009].
† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)
*For Week 24, decreased influenza case counts may be attributed in part to reporting delays

**Figure 2:** Laboratory **c**onfirmed Cases of novel H1N1 Influenza A in Ontario by week between April 13 and June 20, 2009†




**SOURCE:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [25/06/2009].

**Figure 3:** Laboratory **c**onfirmed Cases of novel H1N1 Influenza A in Ontario by age group between April 13 and June 20, 2009†




**SOURCE:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [25/06/2009].

**Table 2:** Confirmed cases of influenza by health unit & health region, with an episode date† during Week 24, 2008-09

| Region | Health Unit | Confirmed Influenza | | | | |
|---|---|---|---|---|---|---|
| | | Novel Influenza A H1N1 | Influenza A (Other subtypes) | Influenza A & B | Influenza B | TOTAL |
| North West | Northwestern | 11 | 0 | 0 | 0 | 11 |
| | Thunder Bay District | 0 | 0 | 0 | 0 | 0 |
| | **TOTAL NORTH WEST** | **11** | **0** | **0** | **0** | **11** |
| North East | Algoma | 0 | 0 | 0 | 0 | 0 |
| | North Bay Parry Sound District | 1 | 1 | 0 | 0 | 2 |
| | Porcupine | 0 | 0 | 0 | 0 | 0 |
| | Sudbury & District | 0 | 0 | 0 | 0 | 0 |
| | Timiskaming | 0 | 0 | 0 | 0 | 0 |
| | **TOTAL NORTH EAST** | **1** | **1** | **0** | **0** | **2** |
| Eastern | City of Ottawa | 36 | 1 | 0 | 0 | 37 |
| | Eastern Ontario | 2 | 1 | 0 | 0 | 3 |
| | Hastings & Prince Edward Counties | 1 | 0 | 0 | 0 | 1 |
| | Kingston, Frontenac, Lennox & Addington | 0 | 2 | 0 | 0 | 2 |
| | Leeds, Grenville And Lanark District | 1 | 0 | 0 | 0 | 1 |
| | Renfrew County And District | 0 | 0 | 0 | 0 | 0 |
| | **TOTAL EASTERN** | **40** | **4** | **0** | **0** | **44** |
| Central East | Durham Region | 12 | 1 | 0 | 0 | 13 |
| | Haliburton, Kawartha, Pine Ridge | 0 | 0 | 0 | 0 | 0 |
| | Peel Region | 42 | 11 | 0 | 0 | 53 |
| | Peterborough County-City | 0 | 0 | 0 | 0 | 0 |
| | Simcoe Muskoka District | 2 | 0 | 0 | 0 | 2 |
| | York Region | 6 | 1 | 0 | 0 | 7 |
| | **TOTAL CENTRAL EAST** | **62** | **13** | **0** | **0** | **75** |
| Toronto | Toronto | 41 | 15 | 0 | 0 | 56 |
| | **TOTAL TORONTO** | **41** | **15** | **0** | **0** | **56** |
| South West | Chatham-Kent | 0 | 0 | 0 | 0 | 0 |
| | Elgin-St. Thomas | 0 | 0 | 0 | 0 | 0 |
| | Grey Bruce | 1 | 0 | 0 | 0 | 1 |
| | Huron County | 0 | 0 | 0 | 0 | 0 |
| | Lambton County | 0 | 0 | 0 | 0 | 0 |
| | Middlesex-London | 0 | 3 | 0 | 0 | 3 |
| | Oxford County | 1 | 0 | 0 | 0 | 1 |
| | Perth District | 0 | 0 | 0 | 0 | 0 |
| | Windsor-Essex County | 0 | 0 | 0 | 0 | 0 |
| | **TOTAL SOUTHWEST** | **2** | **3** | **0** | **0** | **5** |
| Central West | Brant County | 0 | 0 | 0 | 0 | 0 |
| | City Of Hamilton | 3 | 10 | 0 | 0 | 13 |
| | Haldimand-Norfolk | 0 | 1 | 0 | 0 | 1 |
| | Halton Region | 4 | 3 | 0 | 0 | 7 |
| | Niagara Region | 0 | 1 | 0 | 0 | 1 |
| | Waterloo Region | 1 | 0 | 0 | 0 | 1 |
| | Wellington-Dufferin-Guelph | 0 | 0 | 0 | 0 | 0 |
| | **TOTAL CENTRAL WEST** | **8** | **15** | **0** | **0** | **23** |
| | ***Out of Province*** | **0** | | | | |
| | ***TOTAL ONTARIO*** | **165** | **51** | **0** | **0** | **216** |

**SOURCE:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [25/06/2009].
† 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)

**Table 3:** Cumulative* confirmed cases of influenza by health unit & health region with an episode date† between September 1, 2008 – June 20, 2009

| Region | Health Unit | Confirmed Influenza | | | | |
|---|---|---|---|---|---|---|
| | | Novel Influenza A H1N1 | Influenza A (Other subtypes) | Influenza A & B | Influenza B | TOTAL |
| North West | Northwestern | 45 | 3 | 0 | 7 | **55** |
| | Thunder Bay District | 1 | 4 | 0 | 7 | **12** |
| | **TOTAL NORTH WEST** | **46** | **7** | **0** | **14** | **67** |
| North East | Algoma | 0 | 5 | 0 | 10 | **15** |
| | North Bay Parry Sound District | 2 | 17 | 0 | 74 | **93** |
| | Porcupine | 0 | 18 | 0 | 30 | **48** |
| | Sudbury & District | 7 | 15 | 0 | 7 | **29** |
| | Timiskaming | 0 | 4 | 0 | 5 | **9** |
| | **TOTAL NORTH EAST** | **9** | **59** | **0** | **126** | **194** |
| Eastern | City Of Ottawa | 264 | 128 | 2 | 56 | **450** |
| | Eastern Ontario | 11 | 15 | 0 | 39 | **65** |
| | Hastings & Prince Edward Counties | 4 | 9 | 0 | 19 | **32** |
| | Kingston, Frontenac, Lennox & | 2 | 34 | 0 | 32 | **68** |
| | Leeds, Grenville And Lanark District | 5 | 21 | 0 | 22 | **48** |
| | Renfrew County And District | 1 | 9 | 0 | 10 | **20** |
| | **TOTAL EASTERN** | **287** | **216** | **2** | **178** | **683** |
| Central East | Durham Region | 100 | 82 | 1 | 61 | **244** |
| | Haliburton, Kawartha, Pine Ridge | 10 | 73 | 0 | 49 | **132** |
| | Peel Region | 590 | 350 | 0 | 145 | **1,085** |
| | Peterborough County-City | 0 | 29 | 0 | 10 | **39** |
| | Simcoe Muskoka District | 36 | 63 | 0 | 77 | **176** |
| | York Region | 446 | 144 | 0 | 43 | **633** |
| | **TOTAL CENTRAL EAST** | **1,182** | **741** | **1** | **385** | **2,309** |
| Toronto | Toronto | 1,328 | 625 | 3 | 242 | **2,198** |
| | **TOTAL TORONTO** | **1,328** | **625** | **3** | **242** | **2,198** |
| South West | Chatham-Kent | 3 | 5 | 0 | 4 | **12** |
| | Elgin-St. Thomas | 0 | 2 | 0 | 1 | **3** |
| | Grey Bruce | 6 | 23 | 1 | 54 | **84** |
| | Huron County | 2 | 15 | 0 | 33 | **50** |
| | Lambton County | 0 | 5 | 0 | 6 | **11** |
| | Middlesex-London | 12 | 41 | 0 | 9 | **62** |
| | Oxford County | 3 | 15 | 0 | 10 | **28** |
| | Perth District | 0 | 26 | 0 | 12 | **38** |
| | Windsor-Essex County | 6 | 27 | 0 | 33 | **66** |
| | **TOTAL SOUTHWEST** | **32** | **159** | **1** | **162** | **354** |
| Central West | Brant County | 2 | 20 | 0 | 19 | **41** |
| | City Of Hamilton | 33 | 135 | 0 | 97 | **265** |
| | Haldimand-Norfolk | 2 | 9 | 0 | 11 | **22** |
| | Halton Region | 191 | 97 | 0 | 59 | **347** |
| | Niagara Region | 7 | 73 | 0 | 56 | **136** |
| | Waterloo Region | 15 | 119 | 0 | 85 | **219** |
| | Wellington-Dufferin-Guelph | 15 | 57 | 0 | 41 | **113** |
| | **TOTAL CENTRAL WEST** | **265** | **510** | **0** | **368** | **1,143** |
| | ***Out of Province*** | **5** | | | | |
| | ***TOTAL ONTARIO*** | **3,154** | **2,312** | **7** | **1,475** | **6,948** |

**SOURCE:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [25/06/2009].
* Cumulative case counts include late reports and records that are otherwise reconciled. Therefore, cumulative counts may not equal new cases plus previous cumulative value.
† 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)

## Deaths Among Novel H1N1 Influenza A Virus, April 13 – June 25, 2009

Seven deaths have been reported among laboratory confirmed cases. There are more than twice as many deaths occurring in males (5) than females (2). Fatal cases range in age from 6 to 78 years of age. Five of the deaths occurred in individuals over the age of 40. Among cases that have died, the most frequently reported symptoms are fever, cough, chills, shortness of breath and malaise. The symptom onset dates of the fatal cases range from May 6 to June 19, 2009.

Among confirmed cases that have died, all except one case had underlying medical conditions reported. These include cardiovascular disease, diabetes and other endocrine disorders.

## Hospitalizations Among Novel H1N1 Influenza A Virus Cases, April 13 – June 25, 2009

Ninety-eight of the laboratory confirmed cases of novel H1N1 Influenza A virus have been hospitalized to date. Of these, 65 have been discharged from hospital. There have been four deaths among the hospitalized cases. The average length of hospital stay was 4.5 days (the median length of stay was 3 days), ranging from under 24 hours to 20 days. Currently, 33 cases are still hospitalized.

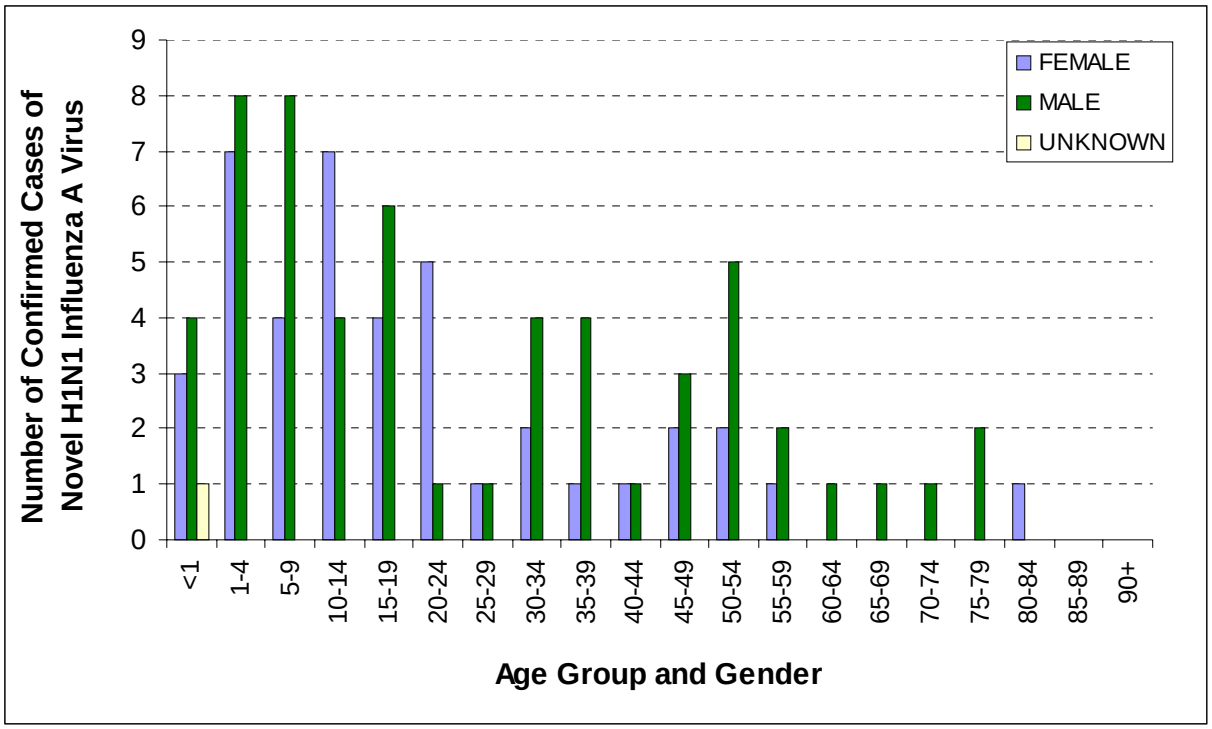
Among cases that are currently or have previously been hospitalized, a number of underlying medical conditions have been reported, including but not limited to diabetes, cardiovascular conditions, renal conditions and pulmonary conditions. Of the 33 cases that are currently hospitalized, a total of 10 were placed on a ventilator and/or were admitted to ICU.

**Table 4.** Hospitalizations among confirmed cases of novel H1N1 Influenza A in Ontario, April 13 – June 25, 2009

| Hospitalization Status | Ventilator and/or ICU | Not in ICU and not on ventilator | Total cases hospitalized to date |
|---|---|---|---|
| Number Currently Hospitalized | 10 | 23 | 33 |
| Number Hospitalized and Discharged | 2 | 63 | 65 |

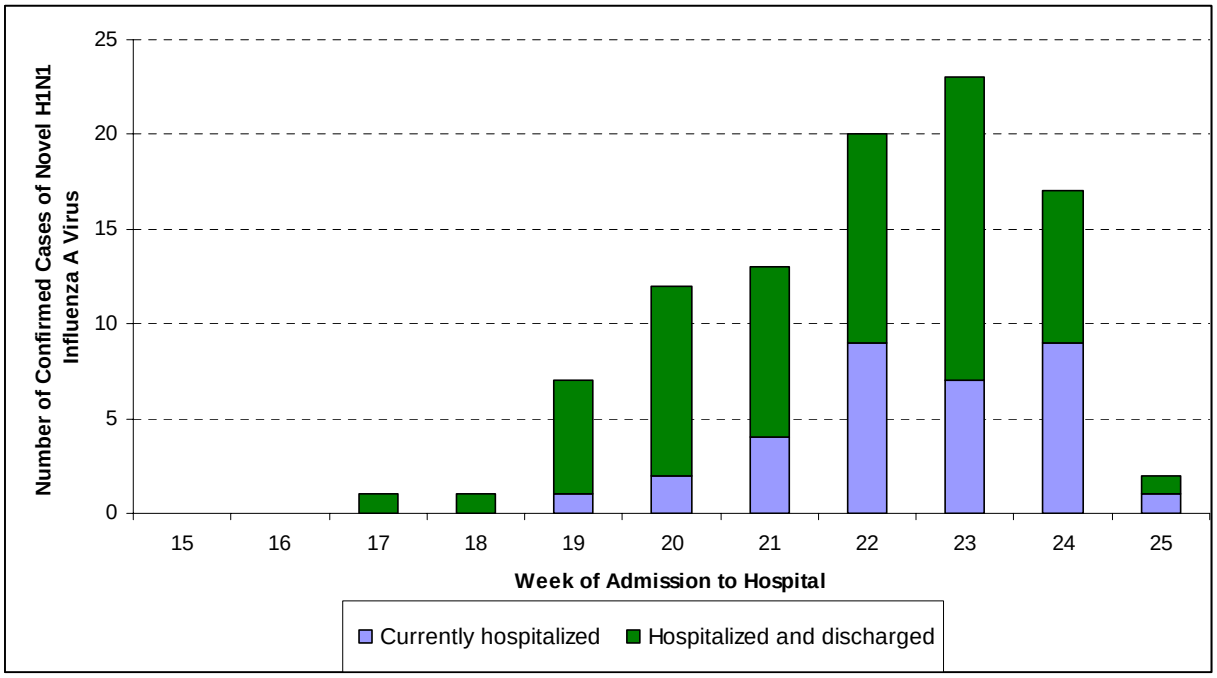
Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted at 8:30 am [25/06/2009]

**Figure 4:** Hospitalized cases of novel H1N1 Influenza A in Ontario by age group and gender, April 13 to June 25, 2009




Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted at 8:30 am [25/06/2009]
**Note:** Gender is unknown for 1 case.

**Figure 5:** Hospitalized cases of novel H1N1 Influenza A by hospital admission date in Ontario, April 13 – June 25, 2009




Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted at 8:30 am [25/06/2009]
*For Week 24 and 25, decreased counts may be attributed in part to reporting delays

### Influenza Subtype(s):

During week 24, a total of 6967 isolates were received by the Public Health Agency of Canada, with 1267 testing positive for influenza A and 6 positive for influenza B. 289 of the reported influenza A isolates were from Quebec (22.8%), 274 were from Saskatchewan (21.6%), 221 were from Manitoba (17.4%) and 209 (16.5%) were from Ontario. Two of the influenza B isolates each were from Ontario, British Columbia and Alberta (33.3%).*

### Antigenic Characterization (National) – Seasonal Influenza:

Since September 1, 2008, National Microbiology Laboratory (NML) has antigenically characterized 976 seasonal human influenza viruses (168 influenza A/H3N2, 242 influenza A/H1N1 and 566 B viruses) that were received from Canadian provincial and hospital laboratories and 92 novel influenza A(H1N1) viruses. All 168 influenza A/H3N2 isolates characterized were antigenically similar to A/Brisbane/10/07, which is the influenza A (H3N2) component recommended for the 2008-09 influenza vaccine. All 242 influenza A/H1N1 isolates characterized were antigenically similar to A/Brisbane/59/2007, which is the influenza A (H1N1) component recommended for the 2008-09 influenza vaccine.

Influenza B viruses currently circulating can be divided into two antigenically distinct lineages represented by B/Yamagata/16/88 and B/Victoria/2/87 viruses. Of the 566 influenza B isolates characterized, 11 were antigenically similar to B/Florida/4/2006, which is the B component recommended for the 2008-09 influenza vaccine and belongs to B/Yamagata lineage. 379 B isolates were characterized as B/Malaysia/2506/04-like and 176 were characterized as B/Brisbane/60/08-like, which belong to the Victoria lineage.B/Brisbane/60/08 is the recommended B component for the 2009-2010 influenza vaccine.

### Antigenic Characterization - Novel Influenza A (H1N1) swl (Human Swine Influenza):

NML has antigenically characterized 99 novel influenza A (H1N1) isolates by HI assay. The results reveal that these viruses are antigenically related to A/California/7/2009 (H1N1), which is the variant reference virus selected by WHO as a potential candidate for novel influenza A(H1N1) vaccine. Antigenic characterization also indicates that these viruses are antigenically and genetically unrelated to seasonal influenza A (H1N1) viruses, which suggests that there is little or no protection to be expected from vaccination with seasonal influenza vaccine.

The National Microbiology Laboratory (NML) has antigenically characterized the following strains from Ontario: 6 influenza A/California/07/2009-like

### Antigenic Characterization (Provincial) – Seasonal Influenza:

The National Microbiology Laboratory (NML) has antigenically characterized the following strains from Ontario: 79 influenza A/Brisbane/59/2007(H1N1)-like, 21 influenza A (H3N2)A/Brisbane/10/2007-like, 40 B/Brisbane/60/2008-like, 6 influenza B/Florida/4/2006-like, and 177 B/Malaysia/2506/2004-like.†

### Antiviral Resistance (National) – Seasonal Influenza:

Since the start of the season, the NML has tested 562 influenza A isolates (257 H1N1 and 305 H3N2) for amantadine resistance. All of the H1N1 isolates were sensitive; however all of the H3N2 isolates were resistant to amantadine. The NML has also tested 1042 influenza isolates (291 A/H1N1, 183 A/H3N2 & 569 B) for oseltamivir (Tamiflu) resistance. All of the A/H3N2 and B isolates were sensitive; however 290 of the A/H1N1 isolates were resistant to oseltamivir due to the H274Y mutation (resistance = 100% or 290/290). One H1N1 isolate was sensitive to oseltamivir.

All 994 influenza isolates (240 A/H1N1, 180 A/H3N2 & 574 B) tested for zanamivir resistance to date were sensitive to zanamivir.†

The WHO recommends that the vaccines to be used in the 2009-2010 season (northern hemisphere) contain the following: an A/Brisbane/59/2007 (H1N1)-like virus; an A/Brisbane/10/2007 (H3N2)-like virus; and a B/Brisbane/60/2008-like virus. <http://www.who.int/csr/disease/influenza/recommendations2009_10north/en/index.html>

### Antiviral Resistance - Novel Influenza A (H1N1) swl (Human Swine Influenza):

201 novel influenza A (H1N1) swl have been tested for resistance to amantadine by sequencing. The testing results showed that all 201 isolates were to resistant amantadine. 100 novel influenza A (H1N1) swl have been tested for resistance to oseltamivir by sequencing; all were sensitive. 52 of the novel H1N1 were tested for zanamivir resistance. The testing results showed that all 52 isolates were sensitive to zanamivir.

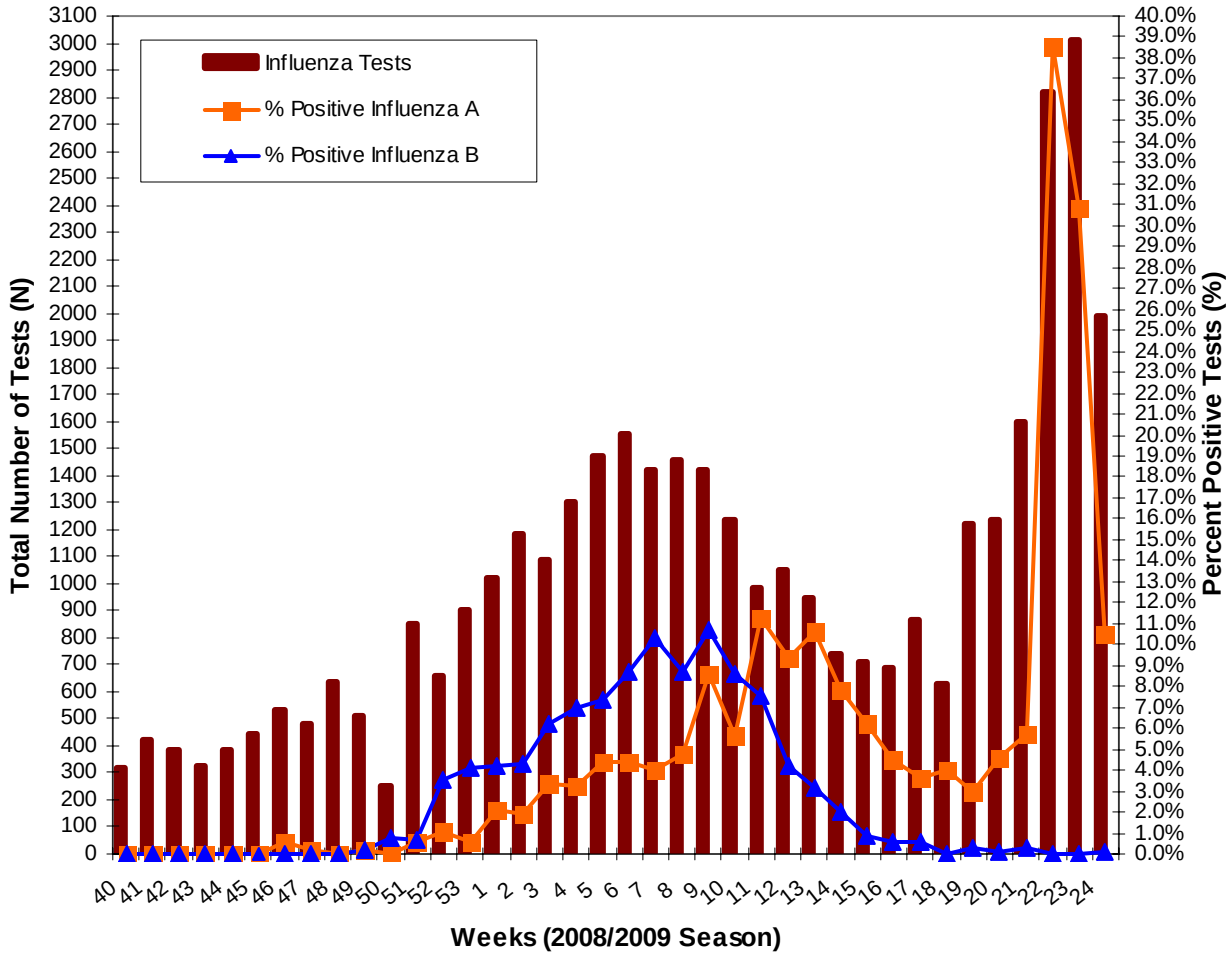
### Antiviral Resistance (Provincial) – Seasonal Influenza:

All 83 A/H3N2 isolates tested were resistant to amantadine in Ontario. All of the 100 H1N1 isolates tested were sensitive to amantadine. Ninety-nine of the 100 tested A/H1N1 isolates were resistant to oseltamivir due to the H274Y mutation, one H1N1 isolate was sensitive.†

***** These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada and do not include data from late reports to PHAC: Week 24, 2009

† These data have been obtained from the National Microbiology Laboratory of the Public Health Agency of Canada for Week 24, 2009.

**Figure 6:** Total number of influenza tests performed and percent of positive tests in Ontario reported to the Centre for Immunization and Respiratory Infectious Diseases (CIRID), by report week*.




**Source:** Public Health Agency of Canada

* Total numbers reported include late reports; therefore totals may not be equal to the sum of the weekly numbers.

**Note**: Cumulative numbers for season to date are available through FluWatch: http://www.phac-aspc.gc.ca/fluwatch/

**Table 5a:** Institutional respiratory infection outbreaks in Ontario: New Outbreaks* in Week 24 and Total Outbreaks for the Season**

| **Institutional Respiratory Infection Outbreaks** | | |
|---|---|---|
| **New Outbreaks*** | **N** | **% (of outbreaks)** |
| Influenza A (All subtypes) | 0 | 0.0 |
| Influenza B | 0 | 0.0 |
| Influenza A and B | 0 | 0.0 |
| Parainfluenza (All types) | 0 | 0.0 |
| RSV | 0 | 0.0 |
| Other organisms | 0 | 0.0 |
| No organism identified | 1 | 100.0 |
| ***TOTAL*** | ***1*** | ***100.0*** |
| **Total Respiratory Infection Outbreaks of the Season to date**** | **N** | **% (of outbreaks)** |
| Influenza A | 71 | 11.2 |
| Influenza B | 18 | 2.8 |
| Influenza A and B | 1 | 0.2 |
| Parainfluenza (All types) | 39 | 6.1 |
| RSV | 56 | 8.8 |
| Combined Outbreaks† | 0 | 0.0 |
| Other organisms | 47 | 7.4 |
| No organism identified | 404 | 63.5 |
| ***TOTAL*** | ***636*** | ***100.0*** |
| **Types of Institutions (All Outbreaks) **** | **N** | **% (of outbreaks)** |
| Long-Term Care Homes | 408 | 64.2 |
| Hospitals | 27 | 4.2 |
| Retirement Homes | 54 | 8.5 |
| Other | 2 | 0.3 |
| Unknown | 145 | 22.8 |
| ***TOTAL*** | ***636*** | ***100.0*** |
| | | |
| **New Outbreaks (Influenza A H1N1)*** | **N** | **% (of outbreaks)** |
| | 1 | 100.0 |
| **Total Influenza A H1N1 Infection Outbreaks of the Season to date**** | **N** | **% (of outbreaks)** |
| | 3 | 100.0 |
| **Types of Institutions (Influenza A H1N1 Outbreaks) **** | **N** | **% (of outbreaks)** |
| Long-Term Care Homes | 2 | 66.7 |
| Hospitals | 1 | 33.3 |
| Retirement Homes | 0 | 0.0 |
| Other | 0 | 0.0 |
| Unknown | 0 | 0.0 |
| ***TOTAL*** | 3 | 100.0 |

**SOURCE:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [25/06/2009]

* New outbreaks are those in which the date of onset of illness in the first case occurred and recorded through iPHIS in the current surveillance period; i.e. June 14, 2009 – June 20, 2009

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2008 – June 20, 2009

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

**Table 5b:** Outbreak Related Complications in institutional respiratory infection outbreaks in Ontario during the Surveillance Season*

| **Outbreak Related Cases (All Outbreaks)** | **N** | **% (of total cases)** |
|---|---|---|
| Residents | 7910 | 73.9 |
| Patients | 373 | 3.5 |
| Staff | 2351 | 22.0 |
| **Total Cases** | **10708** | **100.0** |
| ***Deaths*** | | **% (of cases per role)** |
| Residents | 171 | 2.2 |
| Patients | 9 | 2.4 |
| Staff | 0 | 0.0 |
| ***Pneumonia (Chest x-ray confirmed)*** | | **% (of cases per role)** |
| Residents | 280 | 3.5 |
| Patients | 28 | 7.5 |
| Staff | 10 | 0.4 |
| ***Hospitalizations*** | | **% (of cases per role)** |
| Residents | 334 | 4.2 |
| Staff | 5 | 0.2 |
| **Outbreak Related Cases (All Influenza Outbreaks)** | **N** | **% (of total cases)** |
| Residents | 1088 | 70.6 |
| Patients | 47 | 3.1 |
| Staff | 378 | 24.5 |
| **Total Cases** | **1541** | **100.0** |
| ***Deaths*** | | **% (of cases per role)** |
| Residents | 37 | 3.4 |
| Patients | 0 | 0.0 |
| Staff | 0 | 0.0 |
| ***Pneumonia (Chest x-ray confirmed)*** | | **% (of cases per role)** |
| Residents | 68 | 6.3 |
| Patients | 3 | 6.4 |
| Staff | 5 | 1.3 |
| ***Hospitalizations*** | | **% (of cases per role)** |
| Residents | 81 | 7.5 |
| Staff | 0 | 0.0 |
| **Outbreak Related Cases (Influenza A H1N1 Outbreaks)** | **N** | **% (of total cases)** |
| Residents | 1 | 20.0 |
| Patients | 3 | 60.0 |
| Staff | 1 | 20.0 |
| **Total Cases** | **5** | **100.0** |
| ***Deaths*** | | **% (of cases per role)** |
| Residents | 0 | 0.0 |
| Patients | 0 | 0.0 |
| Staff | 0 | 0.0 |
| ***Pneumonia (Chest x-ray confirmed)*** | | **% (of cases per role)** |
| Residents | 0 | 0.0 |
| Patients | 0 | 0.0 |
| Staff | 0 | 0.0 |
| ***Hospitalizations*** | | **% (of cases per role)** |
| Residents | 1 | 100.0 |
| Staff | 0 | 0.0 |

**SOURCE:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [25/06/2009]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2008 – June 20, 2009

**Figure 7:** Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2008 – June 20, 2009 by causative organism

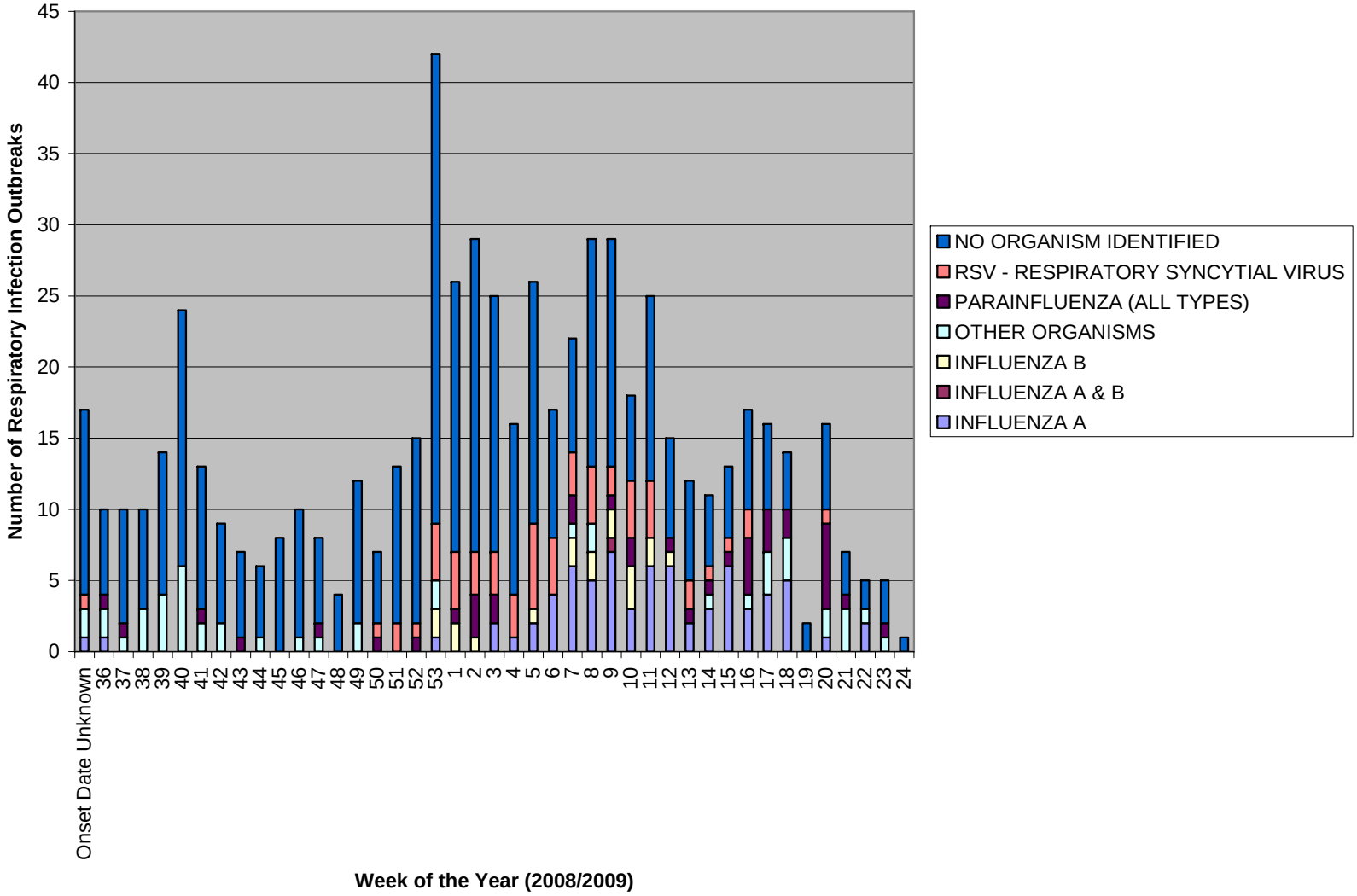


**Figure 8:** Institutional influenza outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2008 – June 20, 2009 by subtype

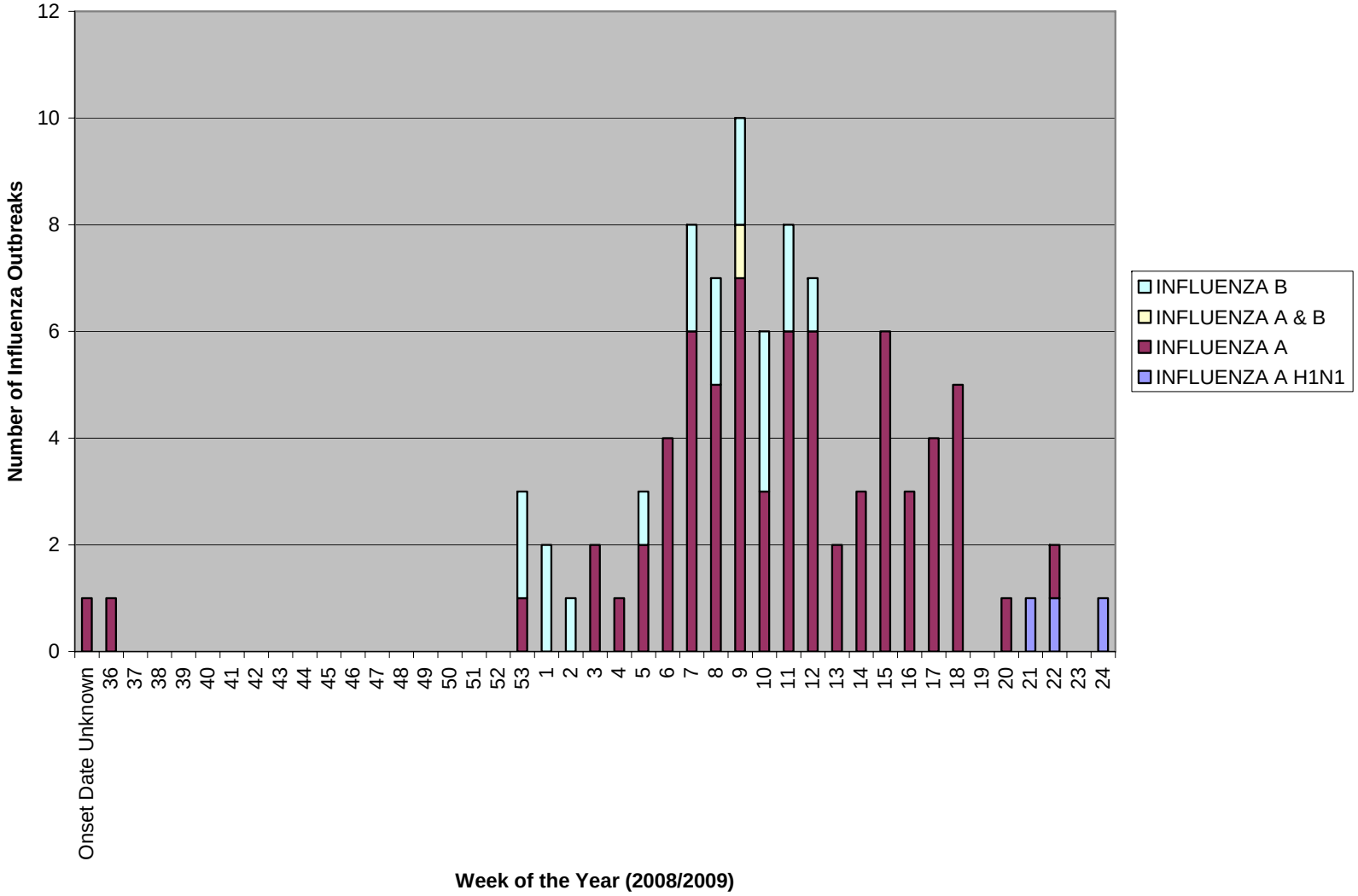
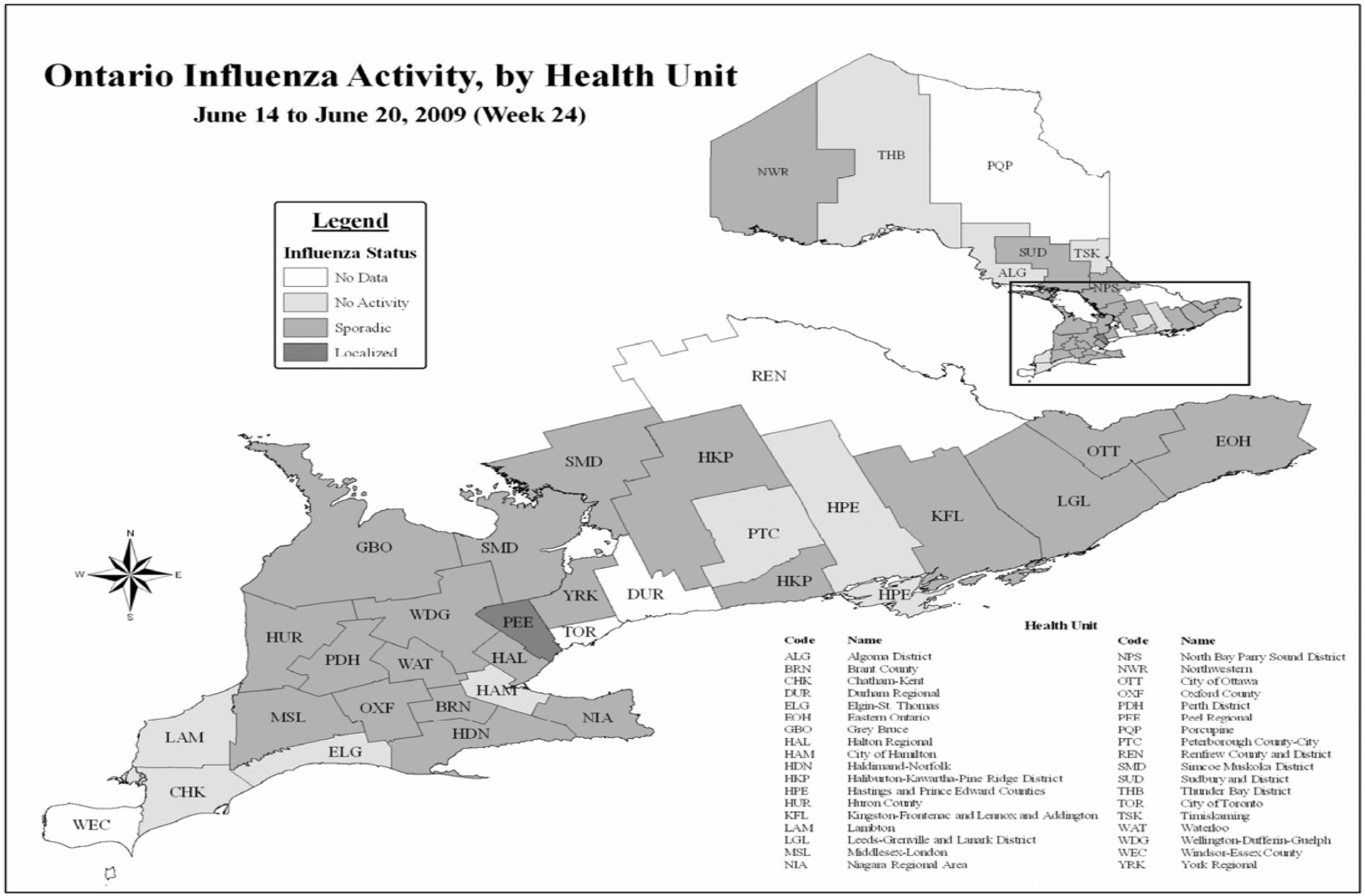


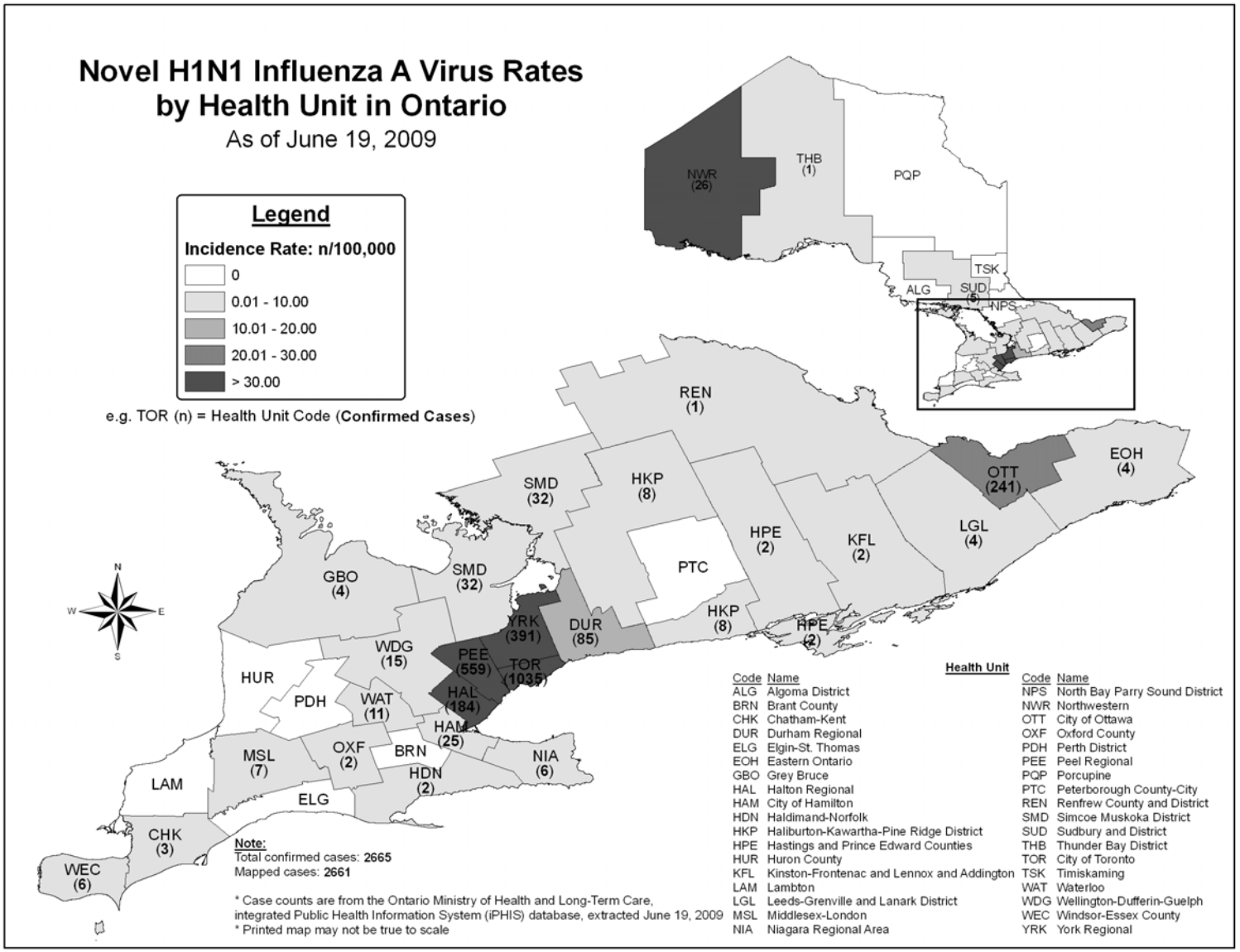
**Figure 9: Influenza Activity* levels in Ontario by health unit for Week 24, 2009**




**SOURCE:** MOHLTC [Provincial Influenza Activity Report (Appendix C) Database]

Influenza activity levels are assigned by local public health units and reported to the MOHLTC by the Tuesday following the end of the surveillance week at 4 pm. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory confirmed institutional outbreaks. Please refer to detailed definitions for the 2008-2009 season included in the Appendix-1]

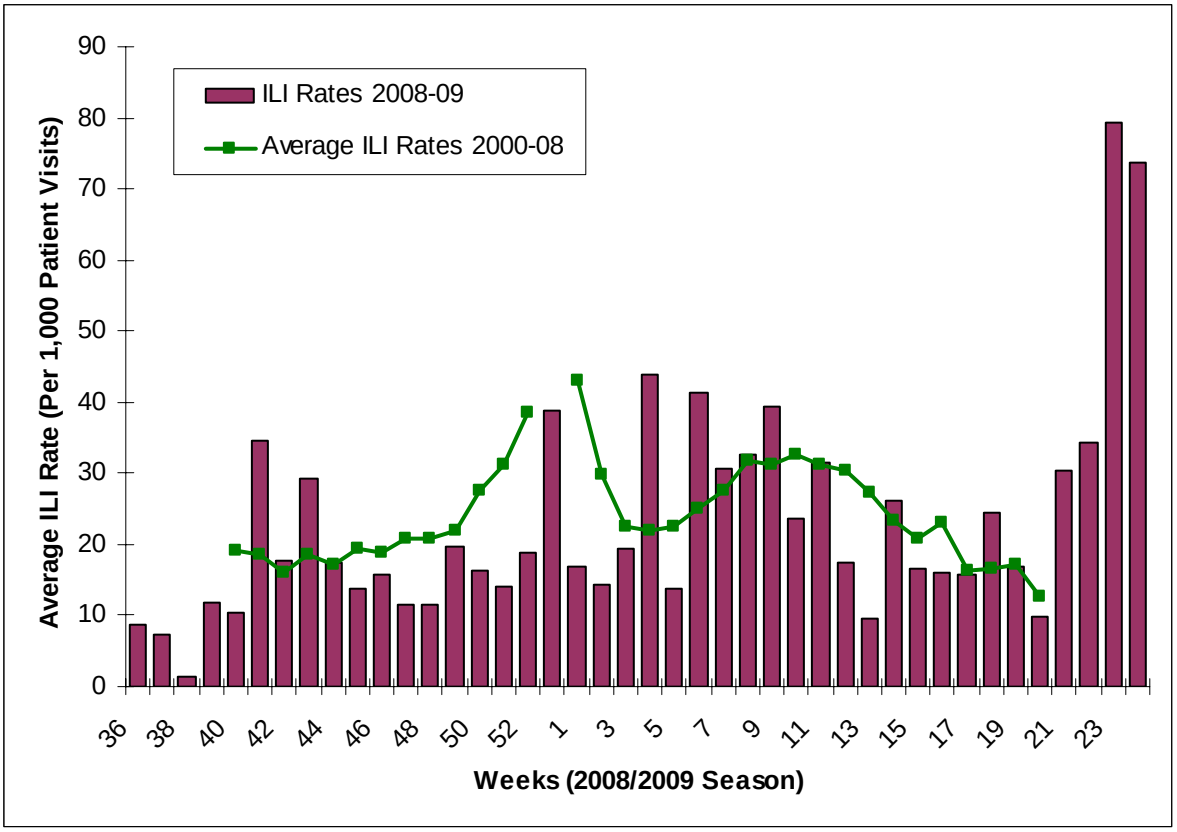
**Figure 10:** Novel H1N1 Influenza A Virus Incidence Rates and Counts in Ontario by health unit April 13 - June 19, 2009†




**Source:** Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [19/06/2009]

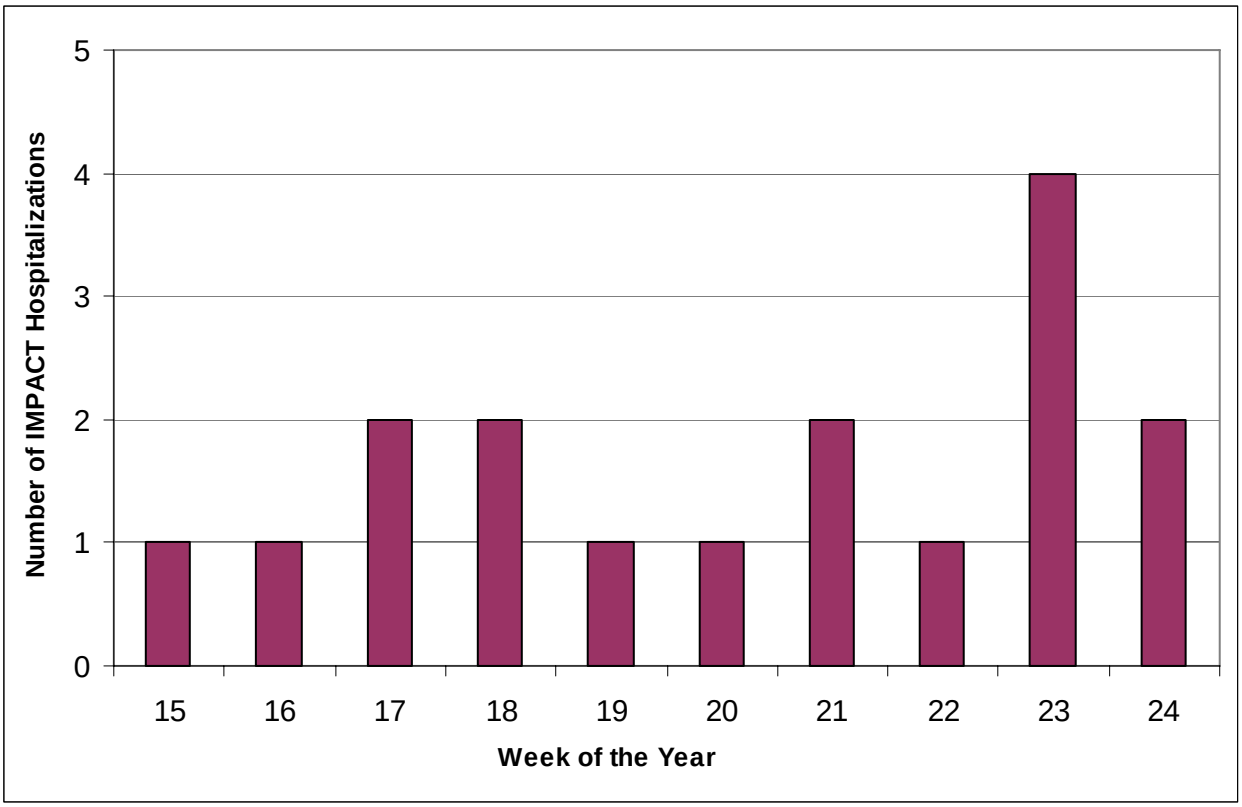
**† Please note that mapping is not available this week. Thus, the map presented includes iPHIS data current only to June 19, 2009**

**Figure 11:** Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario in 2008- 2009 season, by report week, compared to Ontario average† (1999/2000 to 2007/08 seasons).




**Source:** Public Health Agency of Canada
* Sentinel physician information is reported to Public Health Agency of Canada.
†No data available for mean rate in previous years for weeks 21 to 39 (1999-2000 through 20048-20059 seasons). During weeks 20-39, 2002-2003/2004-2005 seasons, ILI is reported once every two weeks, on even weeks only.
Note: For Week 41, the number of sentinel physicians reporting is lower than previous years, which may affect the average ILI rate for this period. Also, since Week 23, 2009, the number of sentinel physicians has increased, which might affect ILI rate starting from week 23.

**Figure 12: Number of IMPACT Hospitalizations in Ontario in the 2008- 2009 season, by report week.**




**Source:** Public Health Agency of Canada

Immunization Monitoring Program ACTive, is a paediatric hospital-based national active surveillance network for adverse events following immunization and selected infectious diseases in children including influenza-associated pediatric hospitalizations

**Table 6: Average Influenza-like illness consultation rate (per 1,000 patient visits) by age group and postal code as reported by Sentinel Physicians* in Ontario, for Week 24.**

| Postal Code | 0 – 4 | 5 – 19 | 20 – 64 | 65 + | Unknown | TOTAL |
|---|---|---|---|---|---|---|
| K0C2K0 | 0 | 0 | 0 | 0 | 0 | N/A |
| K1L8H2 | 0 | 0 | 0 | 0 | 0 | N/A |
| K1C1G1 | 0 | 1 | 1 | 0 | 0 | N/A |
| K2K2V9 | 2 | 4 | 7 | 0 | 0 | N/A |
| K1V2G2 | 3 | 3 | 2 | 0 | 0 | N/A |
| K4M2A2 | 2 | 1 | 6 | 1 | 0 | N/A |
| K0A2W0 | 0 | 0 | 0 | 0 | 0 | N/A |
| K0E1L0 | 0 | 0 | 0 | 0 | 0 | N/A |
| K7H2W6 | 0 | 0 | 0 | 0 | 0 | N/A |
| K7H2J9 | 0 | 0 | 0 | 0 | 0 | N/A |
| K0H2P0 | 0 | 0 | 1 | 0 | 0 | N/A |
| K7L5E9 | 0 | 0 | 0 | 0 | 0 | N/A |
| K7L5E9 | 0 | 0 | 0 | 0 | 0 | N/A |
| K7L5E4 | 0 | 2 | 3 | 2 | 0 | N/A |
| K0K2T0 | 0 | 0 | 0 | 0 | 0 | N/A |
| L1A3W4 | 0 | 0 | 1 | 0 | 0 | N/A |
| K0M1A0 | 0 | 0 | 0 | 0 | 0 | N/A |
| L1S2H6 | 0 | 0 | 0 | 0 | 0 | N/A |
| L1S7K8 | 2 | 0 | 0 | 0 | 0 | N/A |
| L1B1H8 | 0 | 1 | 1 | 0 | 0 | N/A |
| L4L4Y7 | 0 | 0 | 0 | 0 | 0 | N/A |
| L4J7Y3 | 0 | 0 | 0 | 0 | 0 | N/A |
| L3P7P2 | 0 | 1 | 0 | 0 | 0 | N/A |
| L3R3P9 | 2 | 7 | 2 | 0 | 0 | N/A |
| L4J8W3 | 0 | 0 | 0 | 0 | 0 | N/A |
| L4C5E7 | 0 | 4 | 7 | 1 | 0 | N/A |
| M5M1B2 | 0 | 0 | 0 | 0 | 0 | N/A |
| M5M1B2 | 0 | 0 | 0 | 0 | 0 | N/A |
| M4X1W4 | 0 | 0 | 0 | 0 | 0 | N/A |
| M6G4A1 | 1 | 1 | 1 | 0 | 0 | N/A |
| M8Y1W3 | 0 | 0 | 0 | 0 | 0 | N/A |
| M1S4V5 | 0 | 2 | 3 | 0 | 0 | N/A |
| M1R1V2 | 1 | 2 | 3 | 0 | 0 | N/A |
| M1H2V6 | 0 | 0 | 0 | 0 | 0 | N/A |
| M1V4A1 | 0 | 3 | 0 | 0 | 0 | N/A |
| M1M1R4 | 0 | 5 | 1 | 0 | 0 | N/A |
| M1V1V2 | 0 | 2 | 0 | 0 | 0 | N/A |
| M4K1N2 | 0 | 0 | 0 | 0 | 0 | N/A |
| M3M1A4 | 0 | 0 | 1 | 0 | 0 | N/A |
| M6H3M2 | 0 | 0 | 0 | 0 | 0 | N/A |
| M2J2Z1 | 0 | 0 | 0 | 0 | 0 | N/A |
| M9W6N5 | 1 | 2 | 0 | 0 | 0 | N/A |
| M8V2Z5 | 0 | 0 | 1 | 0 | 0 | N/A |
| L4Y2N8 | 0 | 0 | 0 | 0 | 0 | N/A |
| L5B2P7 | 3 | 0 | 0 | 0 | 0 | N/A |
| L6W2A4 | 0 | 1 | 0 | 0 | 0 | N/A |
| L6V4H6 | 0 | 0 | 0 | 0 | 0 | N/A |
| L6W1E2 | 1 | 0 | 2 | 0 | 0 | N/A |
| L7C1H9 | 0 | 1 | 1 | 0 | 0 | N/A |
| L9W1G2 | 0 | 0 | 0 | 0 | 0 | N/A |
| N1H4G2 | 0 | 0 | 0 | 0 | 0 | N/A |
| N1H5J1 | 0 | 0 | 0 | 0 | 0 | N/A |
| N1H4J4 | 0 | 0 | 0 | 0 | 0 | N/A |
| L6L2X4 | 0 | 2 | 4 | 0 | 0 | N/A |
| L7G0E3 | 0 | 0 | 0 | 0 | 0 | N/A |
| L7R1M6 | 0 | 0 | 0 | 0 | 0 | N/A |
| L9H1T7 | 0 | 0 | 0 | 0 | 0 | N/A |
| L8P3A4 | 0 | 0 | 0 | 0 | 0 | N/A |
| L8P3A9 | 0 | 1 | 0 | 0 | 0 | N/A |
| L9H1V1 | 0 | 0 | 0 | 0 | 0 | N/A |
| L9H7M8 | 0 | 0 | 0 | 0 | 0 | N/A |
| L2V1P1 | 0 | 0 | 1 | 0 | 0 | N/A |
| L2E7H1 | 0 | 0 | 0 | 0 | 0 | N/A |
| L2M3W2 | 0 | 0 | 0 | 0 | 0 | N/A |
| L3M1P2 | 0 | 0 | 0 | 0 | 0 | N/A |
| N0A1H0 | 0 | 0 | 1 | 1 | 0 | N/A |
| N3R7K8 | 0 | 0 | 0 | 0 | 0 | N/A |
| N3R1G9 | 0 | 0 | 0 | 0 | 0 | N/A |
| N1R2L7 | 0 | 0 | 0 | 0 | 0 | N/A |
| N2M3B5 | 0 | 0 | 0 | 0 | 0 | N/A |
| N5H1K9 | 0 | 0 | 0 | 0 | 0 | N/A |
| N5H1L2 | 0 | 0 | 0 | 0 | 0 | N/A |

| | | | | | | |
|---|---|---|---|---|---|---|
| N7L1B4 | 1 | 1 | 0 | 0 | 0 | N/A |
| N0R1G0 | 0 | 0 | 0 | 0 | 0 | N/A |
| N9B3P4 | 0 | 0 | 0 | 0 | 0 | N/A |
| N9B3P4 | 0 | 0 | 0 | 0 | 0 | N/A |
| N8M4M7 | 0 | 0 | 0 | 0 | 0 | N/A |
| N0M1T0 | 0 | 0 | 0 | 0 | 0 | N/A |
| N6A5R9 | 0 | 0 | 0 | 0 | 0 | N/A |
| N5Y4J8 | 0 | 0 | 0 | 0 | 0 | N/A |
| N6E3Z8 | 0 | 0 | 0 | 0 | 0 | N/A |
| N0C1E0 | 0 | 0 | 0 | 1 | 0 | N/A |
| N0C1E0 | 0 | 0 | 0 | 0 | 0 | N/A |
| L3V5W5 | 0 | 0 | 0 | 0 | 0 | N/A |
| L4R4P4 | 0 | 0 | 0 | 0 | 0 | N/A |
| K0M1S0 | 0 | 0 | 0 | 0 | 0 | N/A |
| P0H2H0 | 0 | 0 | 0 | 0 | 0 | N/A |
| P0A1C0 | 0 | 0 | 1 | 0 | 0 | N/A |
| P0P1S0 | 0 | 0 | 1 | 0 | 0 | N/A |
| P0M2L0 | 0 | 0 | 0 | 0 | 0 | N/A |
| P4N1C6 | 0 | 0 | 0 | 0 | 0 | N/A |
| P0S1K0 | 2 | 0 | 0 | 0 | 0 | N/A |
| P6B1Y5 | 0 | 0 | 0 | 0 | 0 | N/A |
| P0M1Z0 | 0 | 0 | 0 | 0 | 0 | N/A |
| P7B6Y9 | 0 | 0 | 0 | 0 | 0 | N/A |
| P0W1E0 | 0 | 0 | 0 | 0 | 0 | N/A |
| X0C0A0 | 0 | 0 | 0 | 0 | 0 | N/A |
| P9N3W7 | 1 | 0 | 2 | 0 | 0 | N/A |
| **ILI Sum** | 18 | 46 | 49 | 4 | 0 | N/A |
| ***ILI Consultation Rate (per 1,000 patient visits)*** | 139.53 | 227.72 | 52.52 | 12.31 | 0.00 | 73.63 |

**Source:** Public Health Agency of Canada

* Sentinel physician information is reported to the Public Health Agency of Canada

**Note:** The small numbers of sentinel physicians reporting at the local level make the ILI rates unstable. Please interpret these data correspondingly.

## FURTHER INFORMATION

1. Ontario Ministry of Health and Long-Term Care
   Previous issues of the *Ontario Influenza Bulletin* can be accessed at:
   http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_08/flubul_mn.html

2. Public Health Agency of Canada
   Issues of FluWatch can be accessed at:
   www.phac-aspc.gc.ca/fluwatch/

3. United States Centers for Disease Control and Prevention
   http://www.cdc.gov/flu/weekly/fluactivity.htm

4. European Influenza Surveillance Scheme
   http://www.eiss.org/cgi-files/bulletin_v2.cgi

## INFORMATION ABOUT H1N1 INFLUENZA (HUMAN SWINE INFLUENZA)

1. CDC (Human swine flu investigation)
   http://www.cdc.gov/swineflu/investigation.htm

2. PHAC (Human swine flu investigation)
   http://www.phac-aspc.gc.ca/alert-alerte/swine_200904-eng.php

3. WHO Swine Flu general info
   http://www.who.int/csr/disease/swineflu/en/index.html

4. Ontario Ministry of Health (Important Health Notices)
   http://www.health.gov.on.ca/english/providers/program/emu/ihn.html

## INFORMATION ABOUT AVIAN INFLUENZA

For latest information on the status of avian influenza worldwide please use the following link:
**Public Health Agency of Canada**
http://www.phac-aspc.gc.ca/h5n1/index.html

## APPENDIX - I

### Definitions for influenza activity levels:

**No Data:** No activity report corresponding to the surveillance week was received at the Ministry of Health and Long-Term Care Call Centre by the Tuesday (at 4 p.m.) following the end of the surveillance period.

**No Activity:** **No laboratory-confirmed* influenza and NO outbreaks detected** within the health unit/ influenza surveillance area, within the prior week, although sporadically occurring ILI may or may not be present.†

**Sporadic:** Sporadically (infrequently) occurring **ILI and at least one lab-confirmed influenza* case with NO outbreaks** detected within the health unit area.†

**Localized:** sporadically occurring **ILI and lab-confirmed influenza* together with outbreaks of ILI** in schools and work sites, or laboratory-confirmed influenza in residential institutions occurring in < 50% of the health unit . Outbreaks affect a single and/or adjacent geographic area within the health unit jurisdiction, e.g. outbreaks in a nursing home and a school in close proximity to each other.†

**Widespread:** sporadically occurring **ILI and lab-confirmed influenza* together with outbreaks of ILI** in schools and work sites, or laboratory-confirmed influenza in residential institutions occurring in > 50% of the health unit. Outbreaks affect multiple and non-adjacent geographic areas within the health unit jurisdiction, such as two or more regions of the health unit, two or more municipalities, two or more electoral wards, etc.†

* Confirmation of influenza within the surveillance region at any time within the prior week
† Sub-regions within the province or territory as defined by the provincial/territorial epidemiologist

### Influenza-Like Illness (ILI) Definitions:

**A) ILI in the general population:**

Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which could be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

**B) ILI/Influenza outbreaks:**

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

**Residential institutions:** two or more cases of ILI within a seven-day period, **including at least one laboratory confirmed case**.

## Influenza Surveillance Weeks 2008-2009 and date of submission of Appendix C

| WEEKS | START | END | Appendix C Submission to MOHLTC |
|---|---|---|---|
| WK25 | 21-Jun-09 | 27-Jun-09 | 30-Jun-09 |
| WK26 | 28-Jun-09 | 4-Jul-09 | 7-Jul-09 |
| WK27 | 5-Jul-09 | 11-Jul-09 | 14-Jul-09 |
| WK28 | 12-Jul-09 | 18-Jul-09 | 21-Jul-09 |
| WK29 | 19-Jul-09 | 25-Jul-09 | 28-Jul-09 |
| WK30 | 26-Jul-09 | 1-Aug-09 | 4-Aug-09 |
| WK31 | 2-Aug-09 | 8-Aug-09 | 11-Aug-09 |
| WK32 | 9-Aug-09 | 15-Aug-09 | 18-Aug-09 |
| WK33 | 16-Aug-09 | 22-Aug-09 | 25-Aug-09 |
| WK34 | 23-Aug-09 | 29-Aug-09 | 1-Sep-09 |
| WK35 | 30-Aug-09 | 5-Sep-09 | 8-Sep-09 |