

SURVEILLANCE WEEK 48 (November 28, 2010– December 4, 2010)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from November 28, 2010 to December 4, 2010 (Week 48). **All data are for week 48 unless otherwise specified.** Data extraction and analysis for this issue of the Bulletin occurred on December 8, 2010.

In order to enable our readers to better assess influenza activity in Ontario, we have combined various sources of information in the following table.

Assessment of Influenza Activity in Ontario

Measure	Assessment of measure compared to previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory Confirmed Cases	Higher	Forty-six influenza cases were reported in week 48, which is higher than week 47* (31 influenza cases). The percent positivity of laboratory tests for influenza A in Ontario was 8.6% for week 48. This is higher than week 47 (5.5%) (Figure 6). Enteroviruses continue to circulate in Ontario (Table 5).
Influenza Outbreaks	Similar	No new institutional influenza outbreaks were reported for the current reporting week.
Influenza Activity Levels Reported by Health Units	Higher	Peel and York reported 'localized' level influenza activity while Toronto, Halton, Northwestern, Durham, Haliburton, Perth, and Hamilton reported 'sporadic' activity. The remaining health units reported either no influenza activity or did not report for week 48.
ILI Consultation Rate reported by Sentinel Physicians	Higher	The overall ILI consultation rate has increased from 28.27/1,000 patient visits in Week 47 to 35.59/1,000 patient visits in Week 48. The ILI rate is higher than the average rate for week 48 from previous years.
Hospitalizations Among Lab Confirmed Cases of Influenza	No change	There were 8 new hospitalized cases reported from November 28 to December 4, which is the same number reported from November 21 to November 27.
Deaths Among Lab Confirmed Cases of Influenza	No change	No deaths were reported from November 28 to December 4, which is the same as November 21 to November 27.
OVERALL ASSESSMENT	Influenza activity in Ontario is <i>higher</i> compared to the previous week.	Overall, the indicators show that influenza activity was <i>higher</i> in week 48 compared to week 47.

*Counts from previous weeks may be updated and therefore may not match reports in earlier Bulletins

Overall, influenza activity in Ontario during week 48, 2010, was higher when compared to week 47, 2010. Ontario health units reported 46 new confirmed cases of influenza A for the current week through the integrated Public Health Information System (iPHIS). A total of 179 institutional respiratory infection outbreaks have been reported in 2010 up to Week 48. For week 48, Peel and York health units reported localized level influenza activity. Toronto, Halton, Northwestern, Durham, Haliburton, Perth, and Hamilton health units reported sporadic activity, while the remaining health units either reported no influenza activity or did not report their activity level. The ILI rate is higher than the average rate for week 48 from previous years.

Holiday Schedule Update

The last Influenza Bulletin for 2010 will be published on December 24, 2010, for week 50 and will be a shortened version. There will be no bulletin released on December 31, 2010. An Ontario Influenza Bulletin covering weeks 51 and 52 (December 19, 2010 – January 1, 2011) will be published on January 7, 2011. Health units are advised to report data for weeks 51 and 52 on January 4, 2011 (please refer to page 23 for a modified schedule). Happy holidays and best wishes for a happy and healthy 2011!

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) or Michael Whelan (michael.whelan@ontario.ca, 416-327-9174).

Table 1: Summary of confirmed influenza cases and institutional influenza outbreaks by health region (Week 48, 2010-2011)

Confirmed influenza cases*†	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Pandemic (H1N1) 2009	0	0	0	0	2	0	0	2
Influenza A (Not Subtyped/No Subtype)	0	0	0	7	7	1	2	17
Influenza A (Seasonal H1)	0	0	0	0	0	0	0	0
Influenza A (Seasonal H3)	1	0	0	8	16	0	1	26
Influenza A** (Other)	0	0	0	0	0	0	0	0
Influenza B	0	0	0	1	0	0	0	1
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	1	0	0	16	25	1	3	46
Institutional outbreaks of Influenza A‡	0	0	0	0	0	0	0	0
Institutional outbreaks of Influenza B‡	0	0	0	0	0	0	0	0

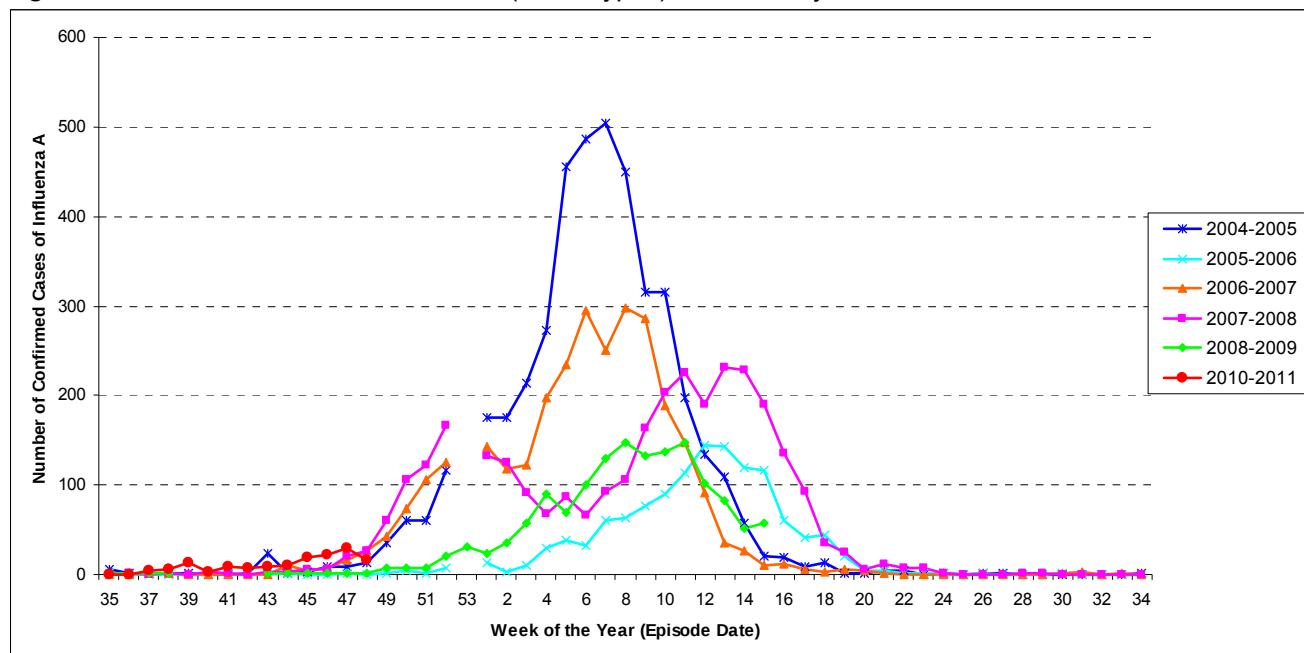
SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/12/2010].

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

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

** Includes indeterminate, untypeable and other subtypes.

Figure 1: Confirmed cases of Influenza A (all subtypes) in Ontario by week, 2004-2010[†]*



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/12/2010].

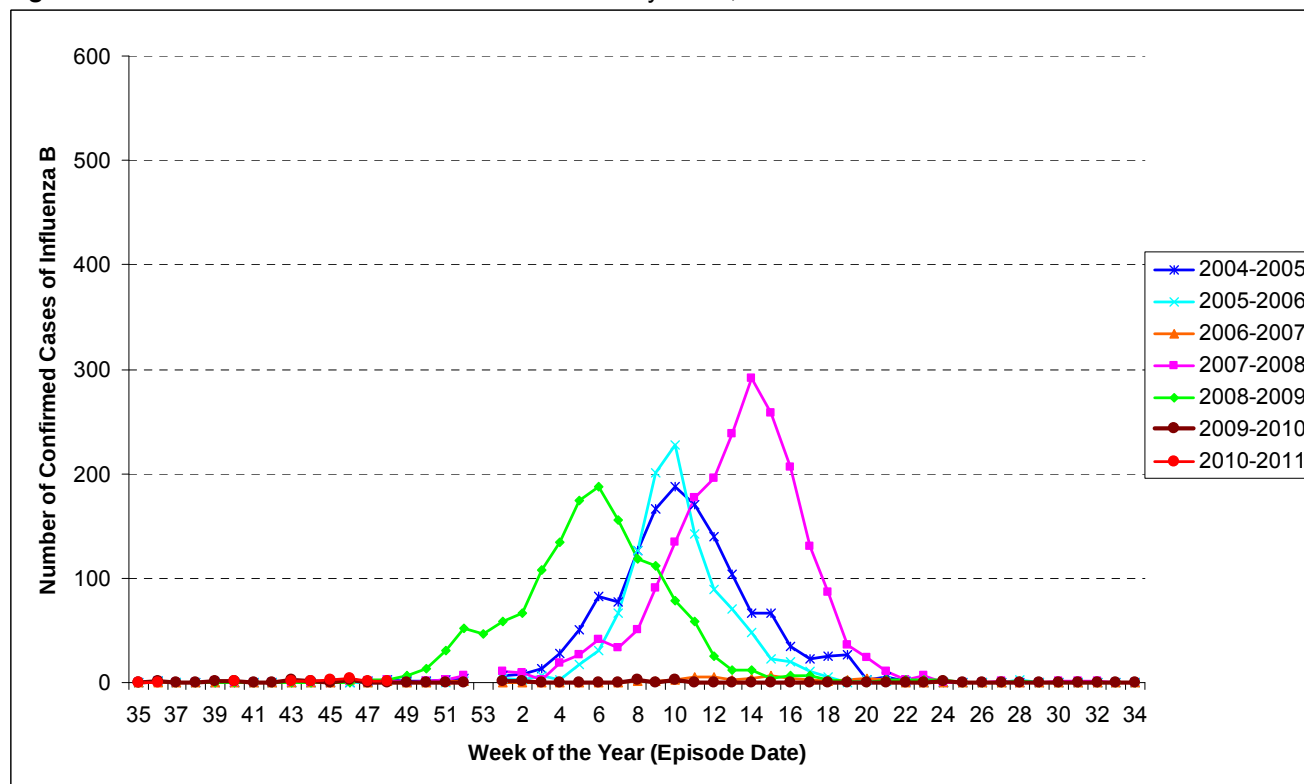
[†] Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Note: Cases from weeks 15 and onwards during the 2008-09 season were excluded because of the pH1N1 pandemic. Seasonal influenza cases occurring during this period may have been detected due to heightened surveillance for all influenza-like illness, therefore this period is not comparable to a regular flu season.

Note: All cases from the 2009-10 influenza season were excluded from this graph due to its incomparability to a regular flu season as a result of the pH1N1 pandemic.

Note: Data points for certain seasons are 'missing' for week 53 for those years without a 53rd week.

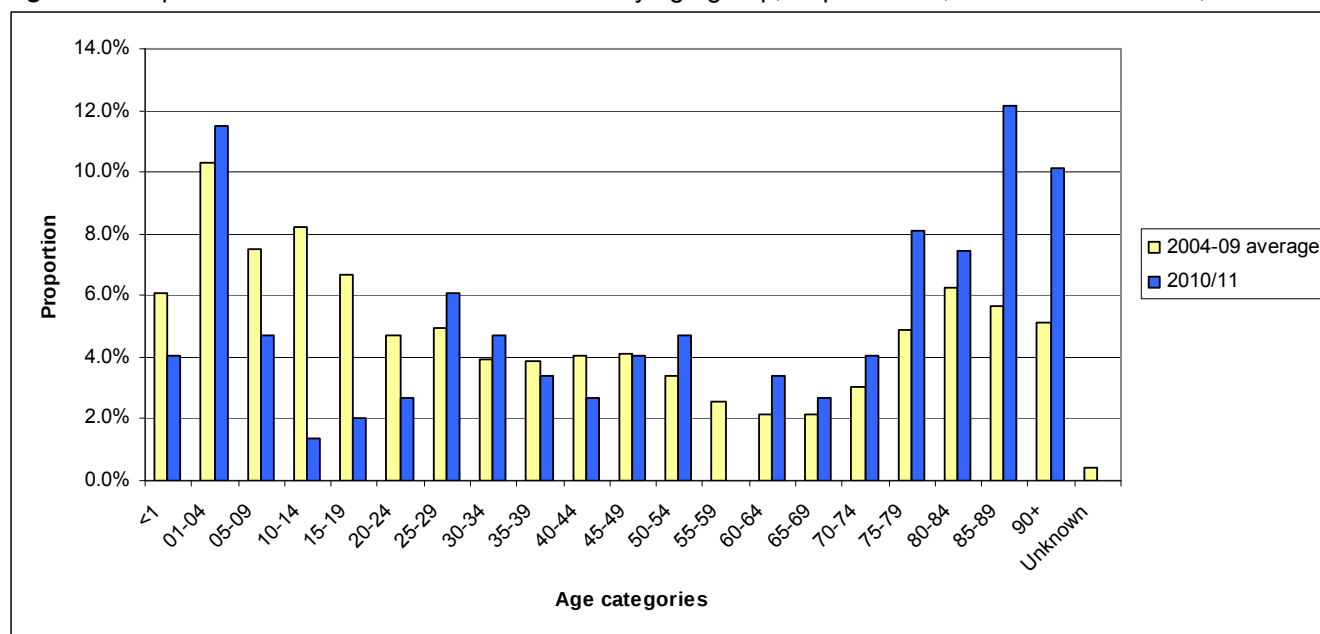
Figure 2: Confirmed cases of Influenza B in Ontario by week, 2004-2010[†]



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/12/2010].

[†] 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)

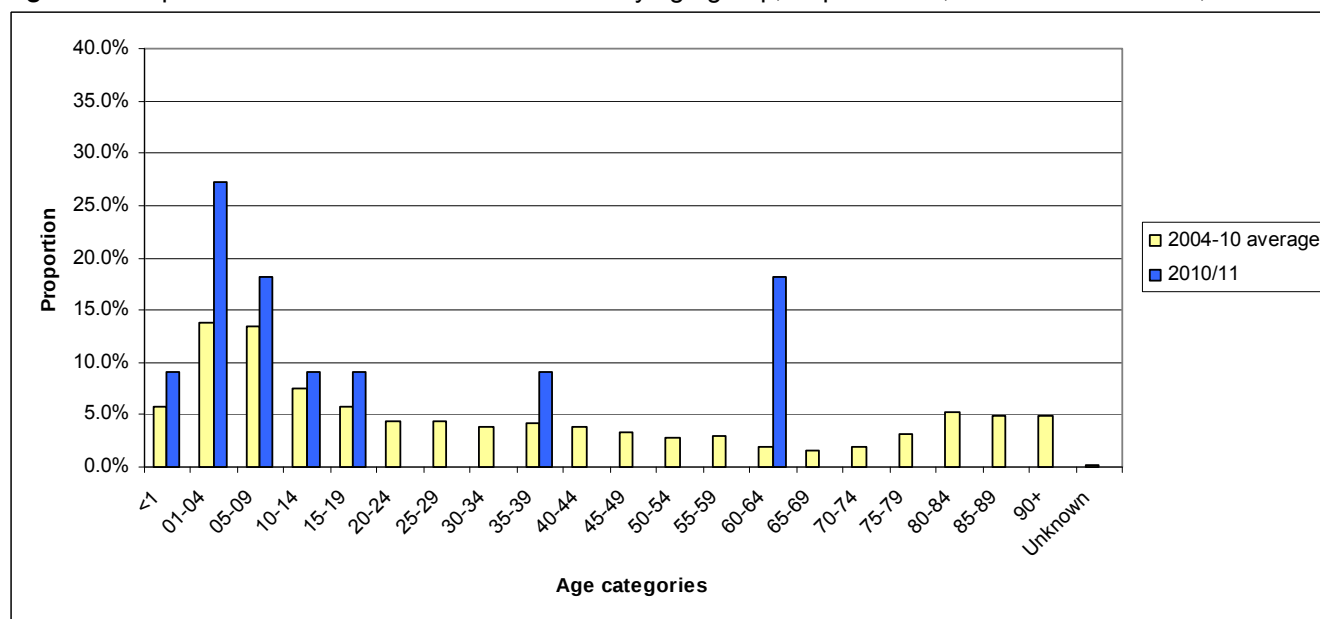
Figure 3. Proportion of influenza A cases in Ontario by age group, September 1, 2004 to December 4, 2010



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/12/2010].

Note: The 2009-10 influenza season has been excluded since the majority were pandemic H1N1 cases. These counts were excluded for comparability of seasonal influenza between the seasons.

Figure 4. Proportion of influenza B cases in Ontario by age group, September 1, 2004 to December 4, 2010



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/12/2010].

Table 2: Confirmed cases of influenza by health unit & health region with a reported date during Week 48, 2010-2011

Region	Health Unit	Influenza A					Influenza A & B	Influenza B	TOTAL
		pH1N1	No Subtype/ Not Subtyped	Other*	H1	H3			
North West	Northwestern	0	0	0	0	1	0	0	1
	Thunder Bay District	0	0	0	0	0	0	0	0
	TOTAL NORTH WEST	0	0	0	0	1	0	0	1
North East	Algoma	0	0	0	0	0	0	0	0
	North Bay Parry Sound District	0	0	0	0	0	0	0	0
	Porcupine	0	0	0	0	0	0	0	0
	Sudbury & District	0	0	0	0	0	0	0	0
	Timiskaming	0	0	0	0	0	0	0	0
	TOTAL NORTH EAST	0	0	0	0	0	0	0	0
Eastern	City of Ottawa	0	0	0	0	0	0	0	0
	Eastern Ontario	0	0	0	0	0	0	0	0
	Hastings & Prince Edward Counties	0	0	0	0	0	0	0	0
	Kingston, Frontenac, Lennox & Addington	0	0	0	0	0	0	0	0
	Leeds, Grenville And Lanark District	0	0	0	0	0	0	0	0
	Renfrew County And District	0	0	0	0	0	0	0	0
	TOTAL EASTERN	0	0	0	0	0	0	0	0
Central East	Durham Region	0	0	0	0	2	0	0	2
	Haliburton, Kawartha, Pine Ridge	0	0	0	0	1	0	0	1
	Peel Region	0	6	0	0	2	0	1	9
	Peterborough County-City	0	0	0	0	0	0	0	0
	Simcoe Muskoka District	0	1	0	0	1	0	0	2
	York Region	0	0	0	0	2	0	0	2
	TOTAL CENTRAL EAST	0	7	0	0	8	0	1	16
Toronto	Toronto								
		2	7	0	0	16	0	0	25
	TOTAL TORONTO	2	7	0	0	16	0	0	25
South West	Chatham-Kent	0	0	0	0	0	0	0	0
	Elgin-St. Thomas	0	0	0	0	0	0	0	0
	Grey Bruce	0	0	0	0	0	0	0	0
	Huron County	0	0	0	0	0	0	0	0
	Lambton County	0	0	0	0	0	0	0	0
	Middlesex-London	0	1	0	0	0	0	0	1
	Oxford County	0	0	0	0	0	0	0	0
	Perth District	0	0	0	0	0	0	0	0
	Windsor-Essex County	0	0	0	0	0	0	0	0
	TOTAL SOUTHWEST	0	1	0	0	0	0	0	1
Central West	Brant County	0	0	0	0	0	0	0	0
	City Of Hamilton	0	1	0	0	0	0	0	1
	Haldimand-Norfolk	0	0	0	0	0	0	0	0
	Halton Region	0	0	0	0	1	0	0	1
	Niagara Region	0	0	0	0	0	0	0	0
	Waterloo Region	0	0	0	0	0	0	0	0
	Wellington-Dufferin-Guelph	0	1	0	0	0	0	0	1
	TOTAL CENTRAL WEST	0	2	0	0	1	0	0	3
	TOTAL ONTARIO	2	17	0	0	26	0	1	46

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/12/2010].

*includes indeterminate, untypeable and other subtypes

Table 3: Cumulative* confirmed cases of influenza by health unit & health region with a reported date between September 1, 2010 – December 4, 2010

Region	Health Unit	Influenza A					Influenza A & B	Influenza B	TOTAL Cumulative
		pH1N1	No Subtype/ Not Subtyped	Other*	H1	H3			
North West	Northwestern	0	0	0	0	1	0	0	1
	Thunder Bay District	0	0	0	0	0	0	0	0
	TOTAL NORTH WEST	0	0	0	0	1	0	0	1
North East	Algoma	0	0	0	0	0	0	0	0
	North Bay Parry Sound District	0	0	0	0	2	0	0	2
	Porcupine	0	0	0	0	0	0	0	0
	Sudbury & District	0	0	0	0	0	0	0	0
	Timiskaming	0	0	0	0	0	0	0	0
	TOTAL NORTH EAST	0	0	0	0	2	0	0	2
Eastern	City of Ottawa	0	0	0	0	0	0	0	0
	Eastern Ontario	0	0	0	0	0	0	0	0
	Hastings & Prince Edward Counties	0	0	0	0	0	0	0	0
	Kingston, Frontenac, Lennox & Addington	0	2	0	0	0	0	0	2
	Leeds, Grenville And Lanark District	0	0	0	0	0	0	0	0
	Renfrew County And District	0	0	0	0	0	0	0	0
	TOTAL EASTERN	0	2	0	0	0	0	0	2
Central East	Durham Region	0	1	0	0	4	0	1	6
	Haliburton, Kawartha, Pine Ridge	0	0	0	0	1	0	0	1
	Peel Region	1	8	0	0	9	0	3	21
	Peterborough County-City	0	0	0	0	0	0	0	0
	Simcoe Muskoka District	0	1	0	0	2	0	0	3
	York Region	0	2	0	1	9	0	0	12
	TOTAL CENTRAL EAST	1	12	0	1	25	0	4	43
Toronto	Toronto								
		3	19	1	0	59	0	6	88
	TOTAL TORONTO	3	19	1	0	59	0	6	88
South West	Chatham-Kent	0	0	0	0	0	0	0	0
	Elgin-St. Thomas	0	0	0	0	0	0	0	0
	Grey Bruce	0	0	0	0	0	0	0	0
	Huron County	0	0	0	0	0	0	0	0
	Lambton County	0	0	0	0	0	0	0	0
	Middlesex-London	1	1	0	0	3	0	0	5
	Oxford County	0	0	0	0	0	0	0	0
	Perth District	0	0	0	0	0	0	0	0
	Windsor-Essex County	0	0	0	0	0	0	0	0
	TOTAL SOUTHWEST	1	1	0	0	3	0	0	5
Central West	Brant County	0	0	0	0	2	0	0	2
	City Of Hamilton	0	1	0	0	2	0	0	3
	Haldimand-Norfolk	0	0	0	0	0	0	0	0
	Halton Region	0	0	0	0	7	0	1	8
	Niagara Region	0	0	0	0	3	0	0	3
	Waterloo Region	0	0	0	0	0	0	0	0
	Wellington-Dufferin-Guelph	1	1	0	0	0	0	0	2
	TOTAL CENTRAL WEST	1	2	0	0	14	0	1	18
	TOTAL ONTARIO	6	36	1	1	104	0	11	159

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/12/2010].

Cumulative case counts include late reports and records that are otherwise reconciled. Therefore, cumulative counts may not equal new cases plus previous cumulative value.

*includes indeterminate, untypeable and other subtypes

Hospitalizations and deaths among laboratory confirmed influenza cases, Sep. 1, 2010 – Dec. 4, 2010

As of December 4, 2010, 48 hospitalizations and two deaths have been reported among lab confirmed influenza cases reported in Ontario for the 2010-2011 season. Most of the hospitalizations and both of the deaths have occurred in influenza A cases.

Table 4a. Incidence of hospitalizations among lab confirmed influenza cases in Ontario, Sep. 1, 2010 – Dec. 4, 2010

Age Group	Influenza A		Influenza B		Total Influenza	
	Number	Rate/100,000	Number	Rate/100,000	Number	Rate/100,000
<1	4	2.99	0	0.00	4	2.99
1-4	5	0.92	2	0.37	7	1.28
5-14	4	0.26	1	0.06	5	0.32
15-24	2	0.11	0	0.00	2	0.11
25-44	4	0.11	0	0.00	4	0.11
45-64	6	0.17	1	0.03	7	0.20
65+	19	1.10	0	0.00	19	1.10
TOTAL	44	0.34	4	0.03	48	0.37

Source (incidence): Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted at 8:30 am [09/12/2010]

Source (incidence): Ontario population projections for 2008: Ontario Ministry of Health and Long-Term Care, Public Health Planning Database (PHPDB), extracted [12/02/2009]

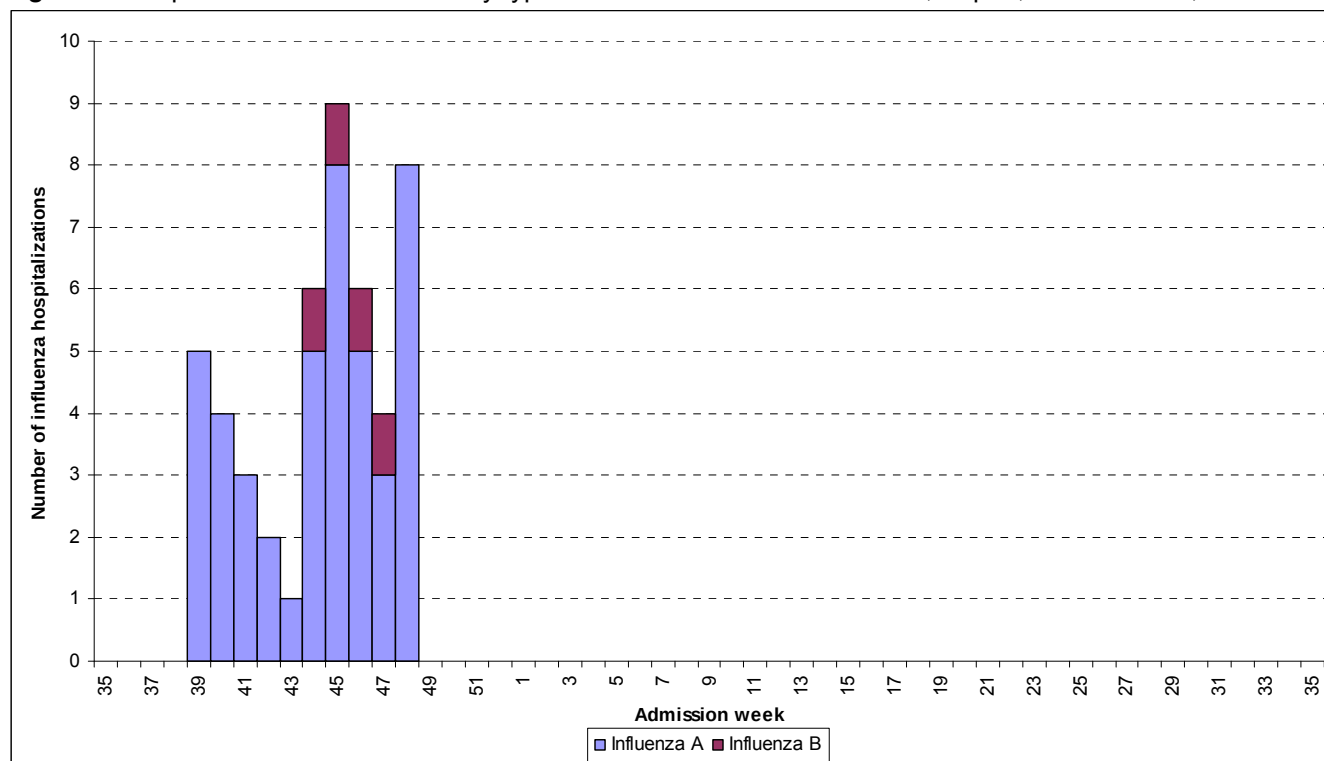
Table 4b. Incidence of deaths among lab confirmed influenza cases in Ontario, Sep. 1, 2010 – Dec. 4, 2010

Age Group	Influenza A		Influenza B		Total Influenza	
	Number	Rate/100,000	Number	Rate/100,000	Number	Rate/100,000
<1	0	0.00	0	0.00	0	0.00
1-4	0	0.00	0	0.00	0	0.00
5-14	0	0.00	0	0.00	0	0.00
15-24	0	0.00	0	0.00	0	0.00
25-44	0	0.00	0	0.00	0	0.00
45-64	0	0.00	0	0.00	0	0.00
65+	2	0.12	0	0.00	2	0.12
TOTAL	2	0.02	0	0.00	2	0.02

Source (incidence): Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted at 8:30 am [09/12/2010]

Source (incidence): Ontario population projections for 2008: Ontario Ministry of Health and Long-Term Care, Public Health Planning Database (PHPDB), extracted [12/02/2009]

Figure 5: Hospitalized influenza cases by type and admission week in Ontario, Sep. 1, 2010 – Dec 4, 2010



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted at 8:30 am [09/12/2010]

Note: Interpret tail with caution due to reporting lags

Influenza Subtype(s) *:

During week 48, a total of 2728 results of isolate testing were received by the Public Health Agency of Canada, 215 isolates tested positive for influenza A and five isolates tested positive for influenza B. Ninety-one of the reported influenza A isolates were from Ontario (42.3%), seventy-five isolates were from Quebec (34.9%), forty-two isolates were from Manitoba (19.5%), four isolates were from Alberta (1.9%) and three isolates were from British Columbia (1.4%). Three of the reported influenza B isolates were from Ontario (60.0%) and one isolate each was from Saskatchewan and Quebec (20.0%).

Antigenic Characterization (National):

Since September 1, 2010, the National Microbiology Laboratory (NML) has antigenically characterized 51 influenza viruses (42 H3N2, 3 H1N1 and 6 B virus) that were received from Canadian laboratories.

Influenza A (H3N2):

The 42 influenza A (H3N2) viruses characterized were related to A/Perth/16/2009-like, which is the influenza A/H3N2 component recommended for the 2010-11 influenza vaccine.

Influenza A (H1N1):

The three influenza A (H1N1) virus characterized was antigenically related to the pandemic vaccine virus A/California/7/2009, which is the recommended H1N1 component for the 2010-11 influenza vaccine.

Influenza B:

The six influenza B viruses characterized were antigenically related to B/Brisbane/60/08 (Victoria lineage), which is the recommended influenza B component for the 2010-11 influenza vaccine.

Antigenic Characterization (Provincial):

Since September 1, 2010, the National Microbiology Laboratory (NML) has antigenically characterized the following strains from Ontario: 23 influenza A /Perth/16/2009-like (H3N2), three influenza A/California/7/2009 and three influenza B/Brisbane/60/2008-like.

Antiviral Resistance and Sensitivity (National) †:

a) Amantadine:

All 33 H3N2 isolates and the two pandemic H1N1 isolate tested for resistance to amantadine were found to be resistant.

b) Oseltamivir:

Forty-one influenza isolates (33 H3N2, 6 B and 2 pandemic H1N1) were tested for resistance to oseltamivir by phenotypic assay and/or sequencing. All 33 H3N2, the six B isolates and the two pandemic H1N1 isolates were sensitive to oseltamivir.

c) Zanamivir:

Forty-one influenza isolates (33 H3N2, 6 B and 2 pandemic H1N1) were tested for resistance to zanamivir by phenotypic assay. All 33 H3N2 isolates, the six B isolates and the two pandemic H1N1 isolates were sensitive to zanamivir.

Antiviral Resistance and Sensitivity (Provincial) †:

a) Amantadine:

Of the 21 H3N2 isolates and the two pandemic H1N1 isolates tested, all influenza A (H3N2) isolates and the pandemic H1N1 isolates were resistant to amantadine.

b) Oseltamivir:

Of the 16 H3N2 isolates, the three influenza B isolate and the two pandemic H1N1 isolate tested, all influenza A (H3N2) isolates, the influenza B isolates and the pandemic H1N1 isolates were sensitive to oseltamivir.

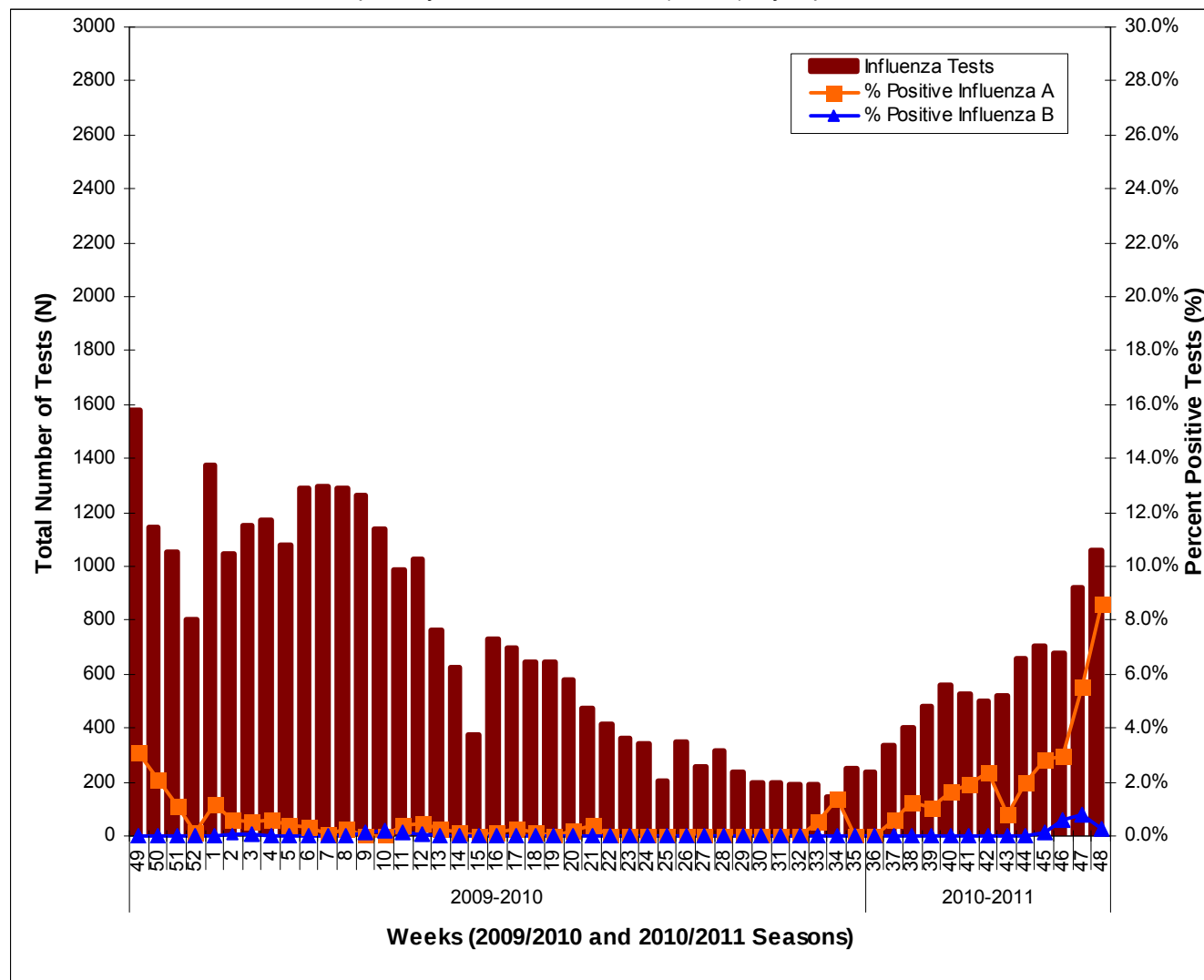
c) Zanamivir:

Of the 16 H3N2 isolates, the three influenza B isolates and two pandemic H1N1 isolates tested, all influenza A (H3N2) isolates, the influenza B isolates and the pandemic H1N1 isolates were sensitive to zanamivir.

†National Antigenic Characterization and Antiviral Resistance data are current as of December 9, 2010.

* 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 48, 2010. Please note that the last version received from PHAC as of 4:00PM on December 9, 2010 was used.

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. These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada from 17 labs in Ontario and do not include data from late reports to PHAC for the current season: Week 48, 2010. Please note that the last version received from PHAC as of 4:00PM on December 8, 2010 was used.

* Total numbers reported include late reports from previous seasons; 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 5: Summary of other respiratory virus detections/isolations in Ontario in Week 48

Organism Name	Number of Positive Tests	Number of Tests	% Positive
Respiratory Syncytial Virus	16	743	2.15
Parainfluenza (all types)	15	709	2.12
Adenovirus	8	709	1.13
Human Metapneumovirus	2	399	0.50
Rhinovirus	28	580	4.83
Coronavirus	3	291	1.03

SOURCE: These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada from 17 labs in Ontario and do not include data from late reports to PHAC: Week 48, 2010. Please note that the last version received from PHAC as of 4:00PM on December 8, 2010 was used.

Table 6: Institutional respiratory infection outbreaks in Ontario: new outbreaks* in Week 48 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 ^α	0	0.0
Combined Outbreaks [†]	0	0.0
Enterovirus/rhinovirus	2	100.0
No organism identified	0	0.0
TOTAL	2	100.0
Total Respiratory Infection Outbreaks of the Season to date**	N	% (of outbreaks)
Influenza A (All subtypes)	11	6.1
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	2	1.1
RSV	1	0.6
Combined Outbreaks [†]	6	3.4
Other organisms ^α	1	0.6
Enterovirus/rhinovirus	116	64.8
No organism identified	42	23.5
TOTAL	179	100.0
Types of Institutions – All Outbreaks **	N	% (of outbreaks)
Long-Term Care Homes	107	59.8
Hospitals	8	4.5
Retirement Homes	16	8.9
Other	0	0.0
Unknown	48	26.8
TOTAL	179	100.0

SOURCE: Ontario Ministry of Health and Long-Term Care, Integrated Public Health Information System (iPHIS) database, extracted [08/12/2010]

* 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. November 28, 2010 – December 4, 2010

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to Week 48.

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

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

Table 7: Outbreak related complications in institutional respiratory infection outbreaks in Ontario during the surveillance season*[†]

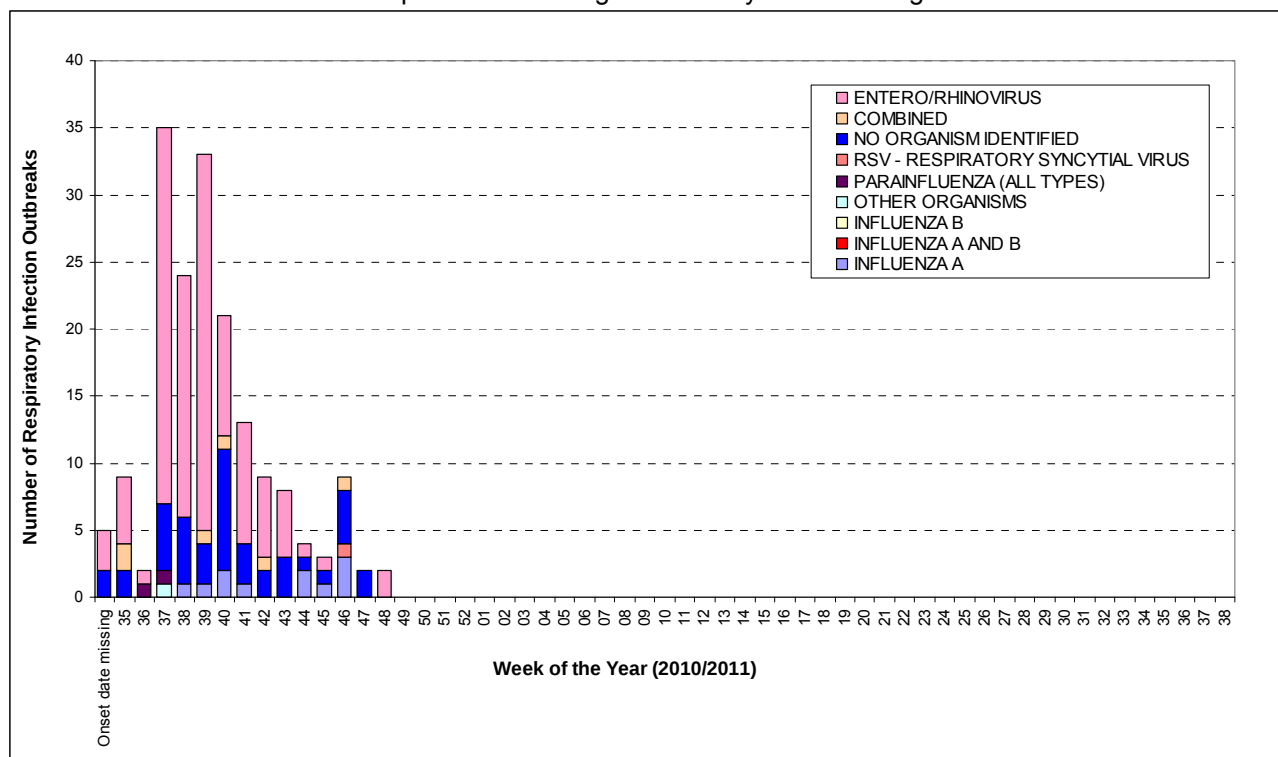
Outbreak Related Cases – All Outbreaks	N	% (of total cases)
Residents	2174	70.5
Patients	55	1.8
Staff	854	27.7
Total Cases	3083	100.0
Deaths		% (of cases per role)
Residents	36	1.7
Patients	0	0.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	51	2.3
Patients	0	0.0
Staff	1	0.1
Hospitalizations		% (of cases per role)
Residents	71	3.3
Staff	2	0.2
Outbreak Related Cases – All Influenza Outbreaks	N	% (of total cases)
Residents	142	75.5
Patients	0	0.0
Staff	46	24.5
Total Cases	188	100.0
Deaths		% (of cases per role)
Residents	6	4.2
Patients	0	0.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	7	4.9
Patients	0	0.0
Staff	0	0.0
Hospitalizations		% (of cases per role)
Residents	12	8.5
Staff	0	0.0

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/12/2010]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2010 – December 4, 2010

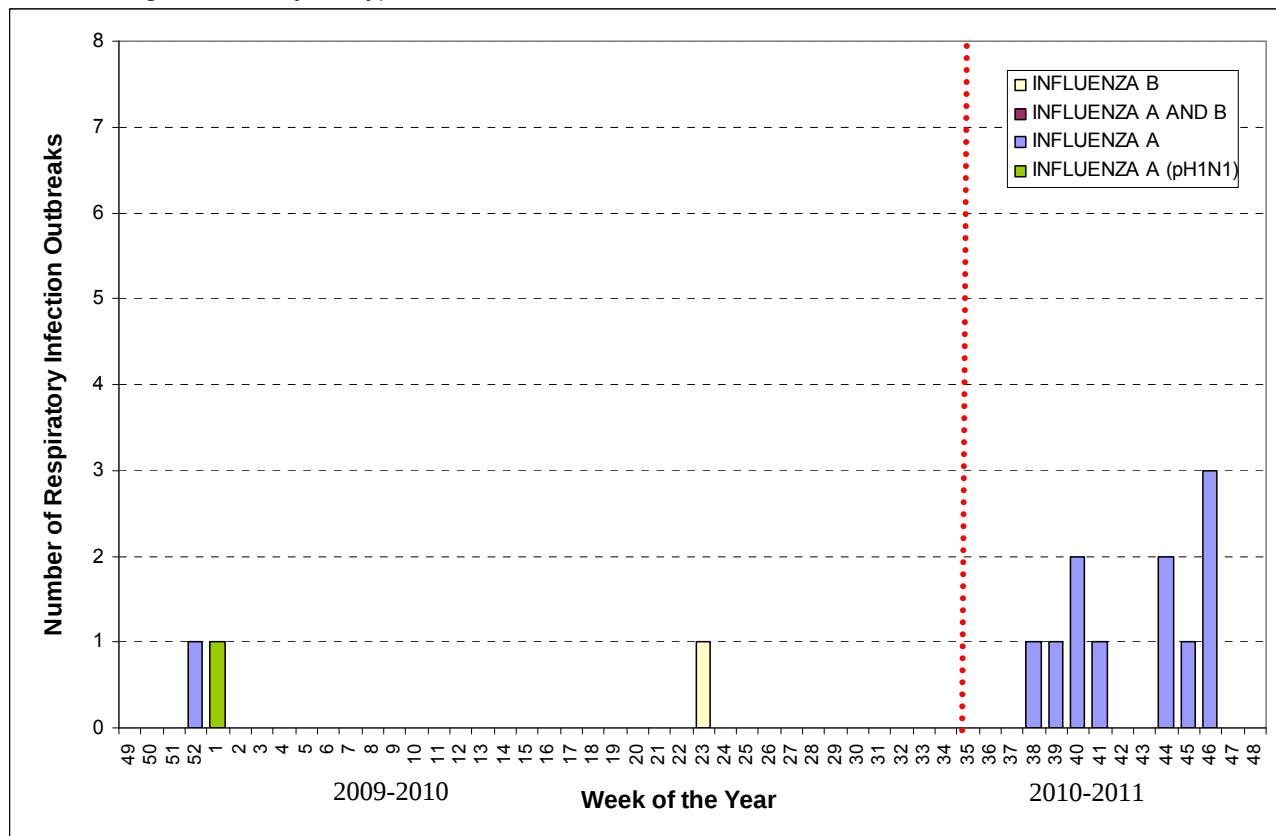
[†] Outbreak related case counts are based on aggregate case counts submitted for each outbreak and include laboratory and epidemiologically linked cases.

Figure 7: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including Week 48 by causative organism



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/12/2010]

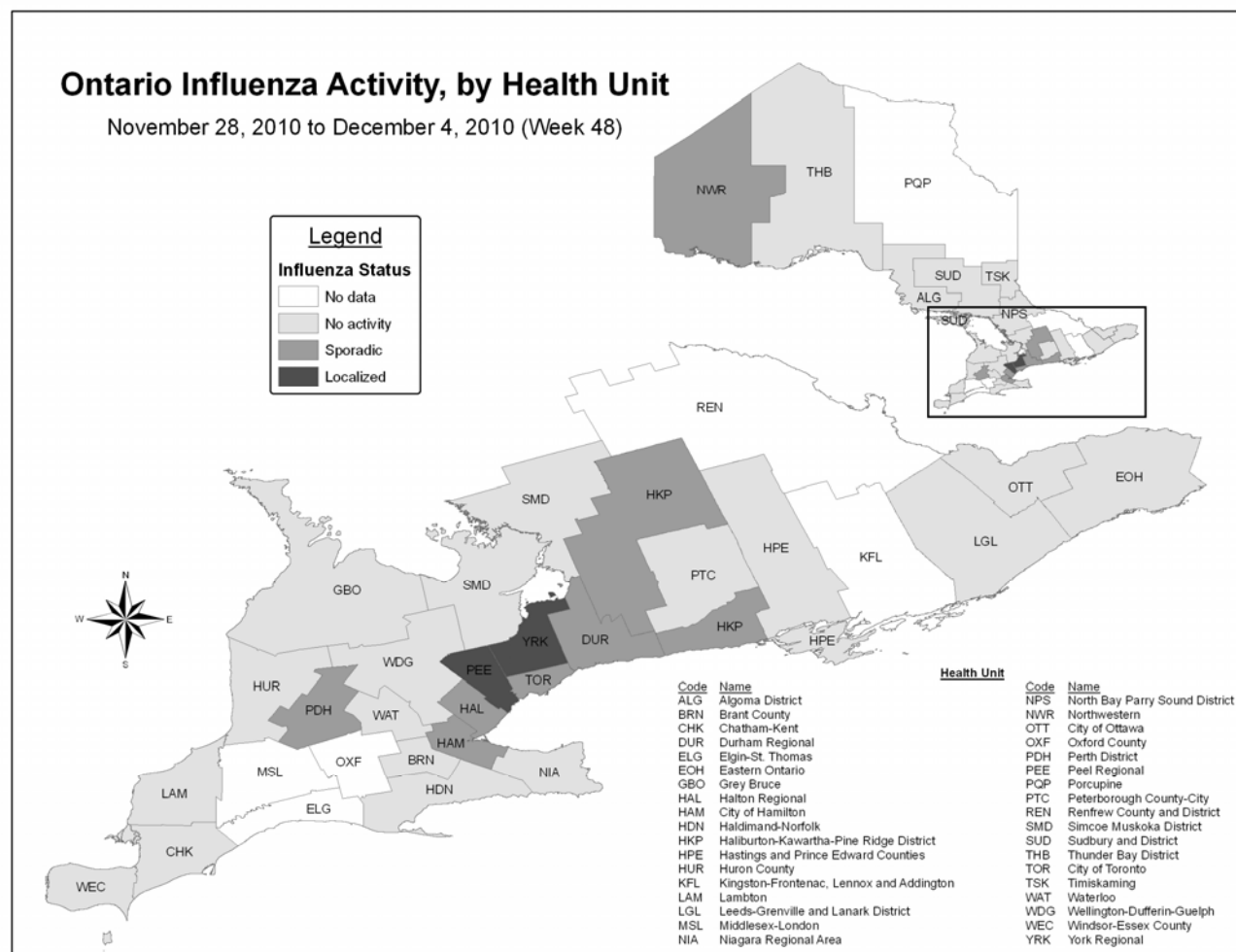
Figure 8: Institutional influenza outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including Week 48 by subtype*



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/12/2010]

*School outbreaks are not included in this chart.

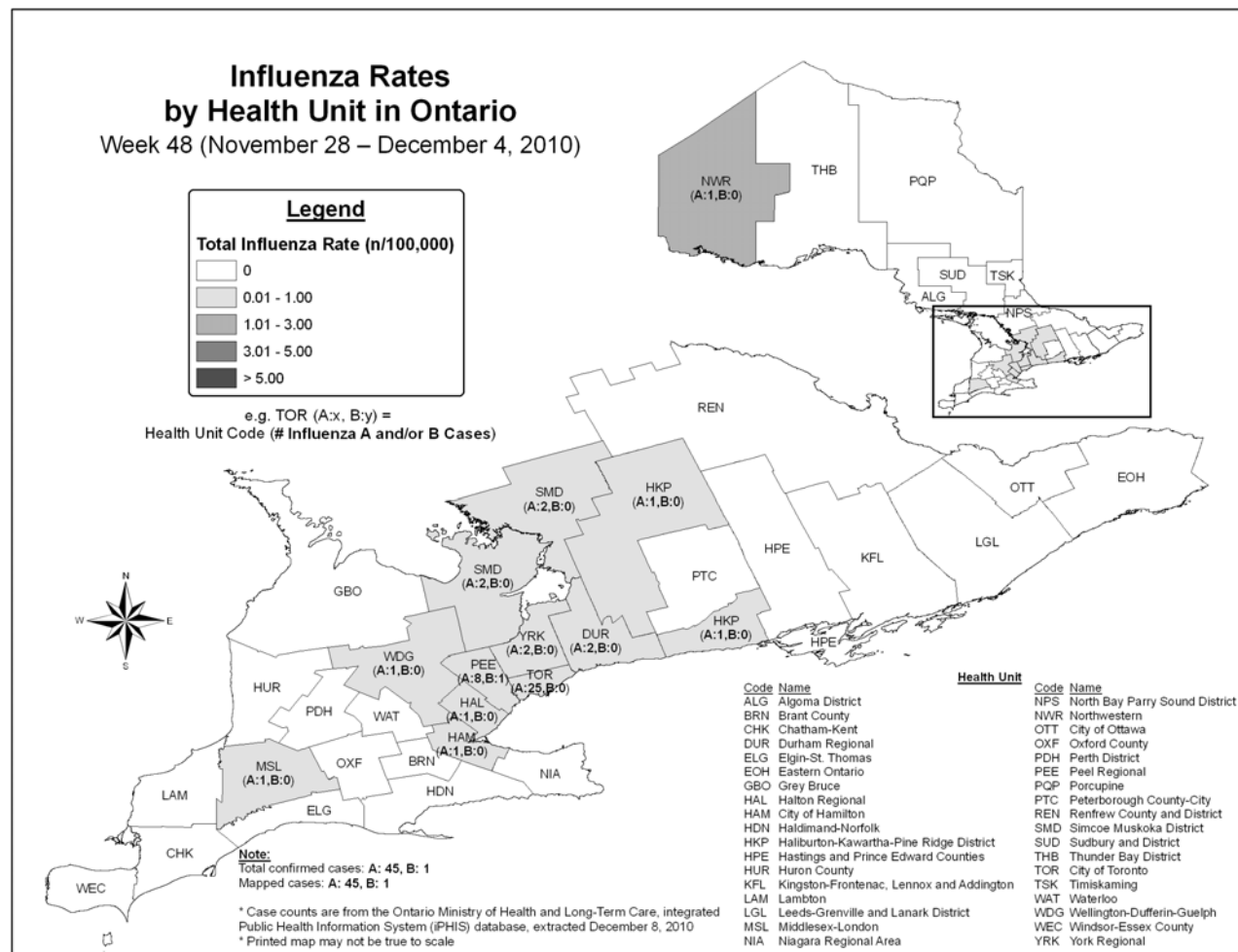
Figure 9: Influenza activity* levels in Ontario by health unit for Week 48, 2010



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

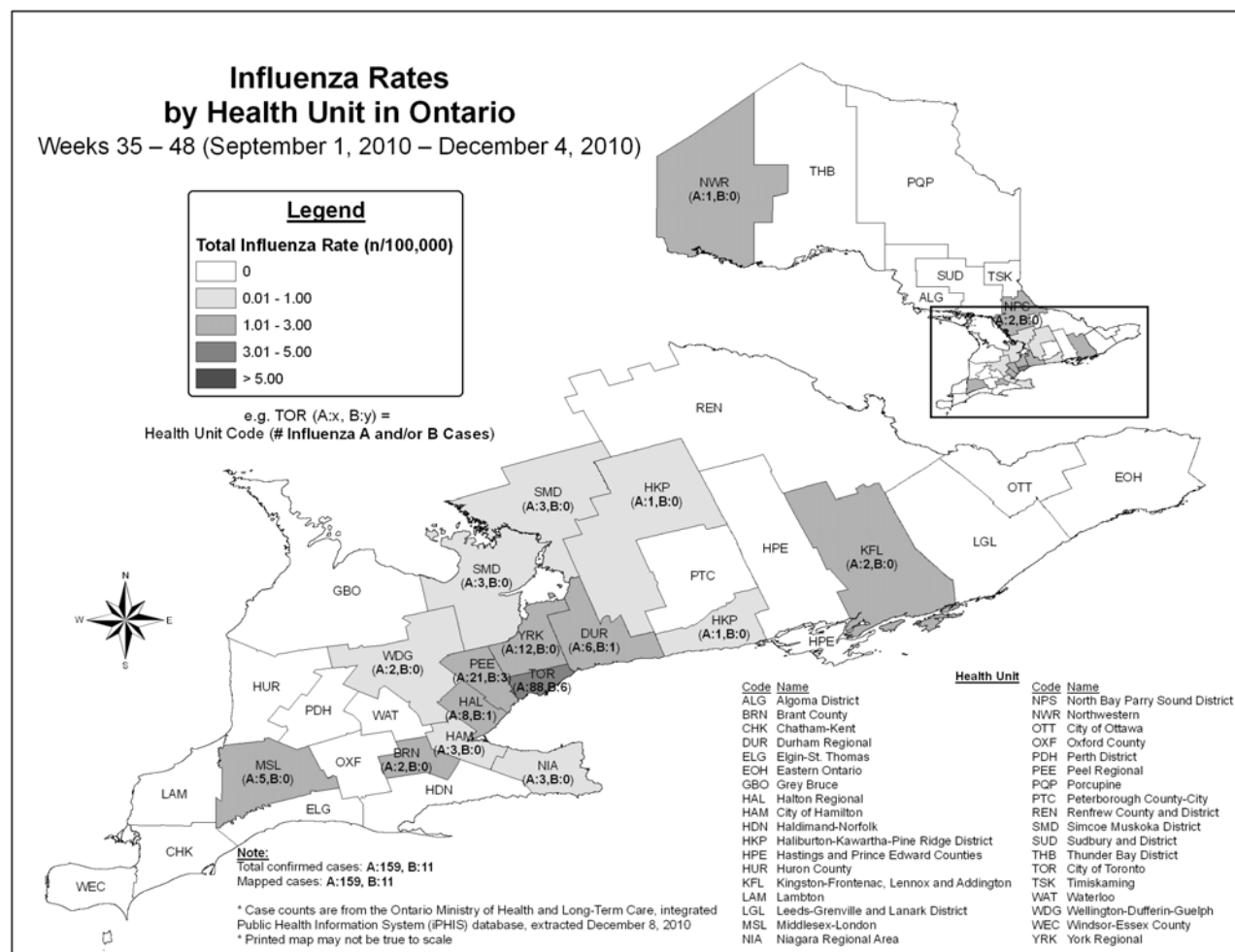
* Influenza activity levels are assigned by local public health units and reported to the MOHLTC by the Tuesday following the end of the surveillance week at 4 pm. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory confirmed institutional outbreaks. Please refer to detailed definitions for the 2010-2011 season included in the Appendix-1]

Figure 10: Influenza incidence rates and counts in Ontario by health unit for Week 48, 2010



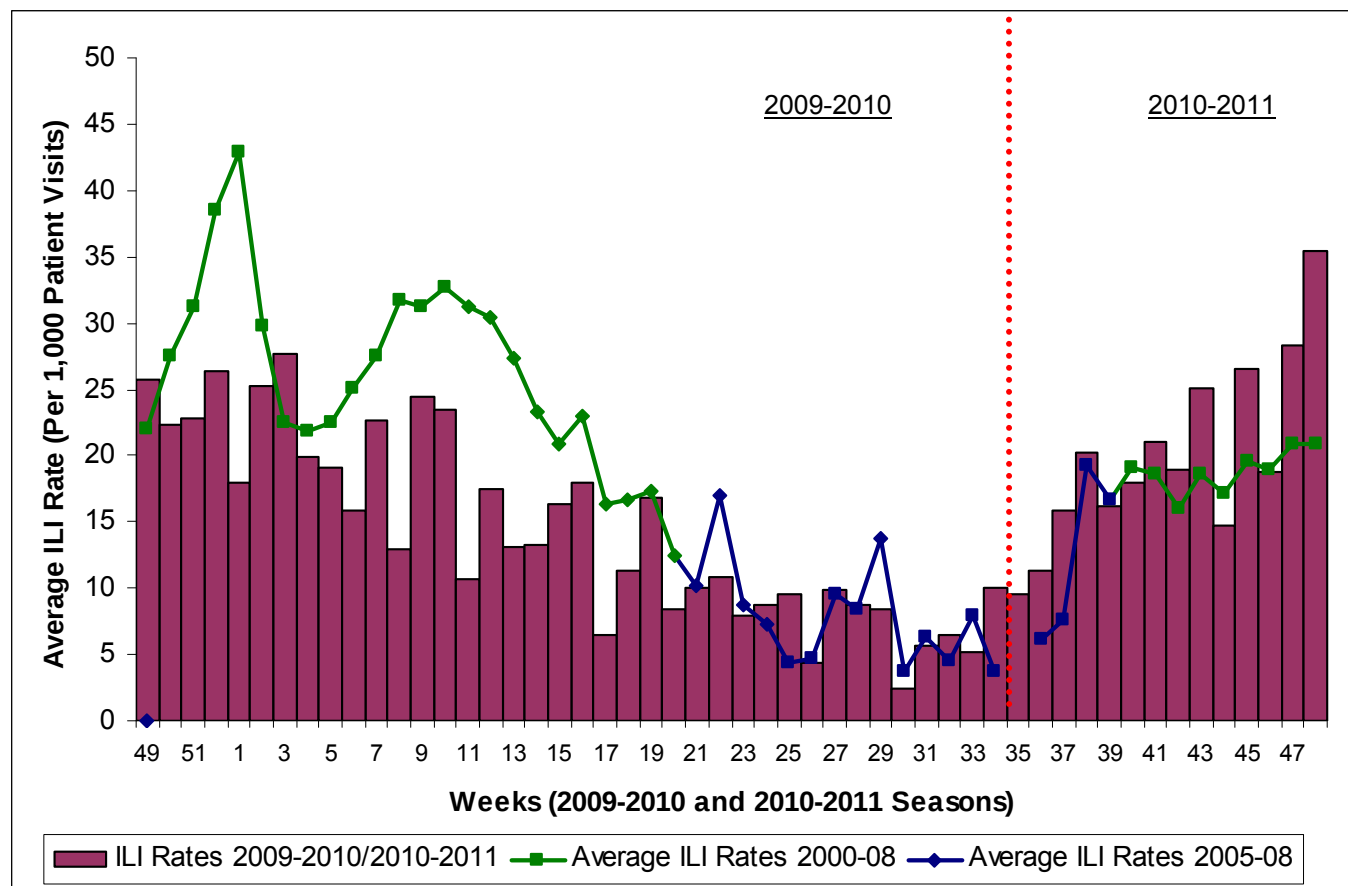
Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/12/2010]

Figure 11: Influenza cumulative incidence rates and counts in Ontario by health unit, Weeks 35 - 48 (September 1, 2010 – December 4, 2010)



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/12/2010]

Figure 12: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario up to the 2010-11 surveillance season, by report week, compared to Ontario average† (1999/2000 to 2007/08 seasons).

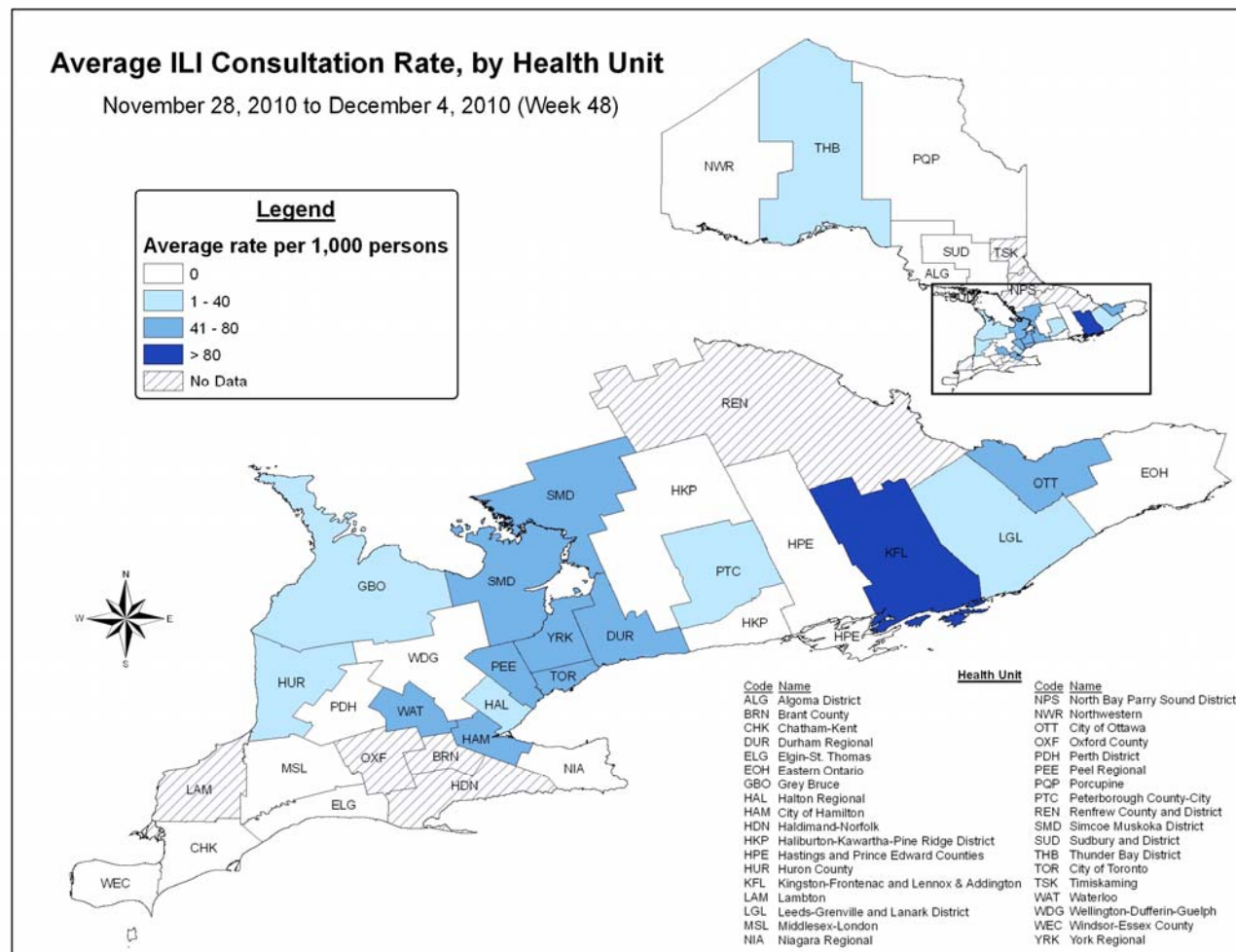


Source: Public Health Agency of Canada

* Sentinel physician information is reported to Public Health Agency of Canada, 107 sentinels reported in week 48.

† No data available for mean rate in previous years for weeks 21 to 39 (1999-2000 through 2004-2005 seasons). During weeks 20-39, 2002-2003/2004-2005 seasons, ILI is reported once every two weeks, on even weeks only.

Figure 13: Average influenza-like illness consultation rate (per 1,000 patient visits) by health unit as reported by sentinel physicians* in Ontario, for Week 48.



Source: Public Health Agency of Canada

* Sentinel physicians report ILI and patient data to the Public Health Agency of Canada; 107 sentinels reported this week of which all were matched to a health unit and represented in the above map.

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

Table 8: Average influenza-like illness consultation rate (per 1,000 patient visits) by age group as reported by sentinel physicians* in Ontario, for Week 48.

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
ILI Sum	27	17	47	9	0	100
ILI Consultation Rate (per 1,000 patient visits)	113.92	51.83	29.07	14.33	0.00	35.59

Source: Public Health Agency of Canada

Sentinel physician information is reported to the Public Health Agency of Canada; 107 sentinels reported this week.

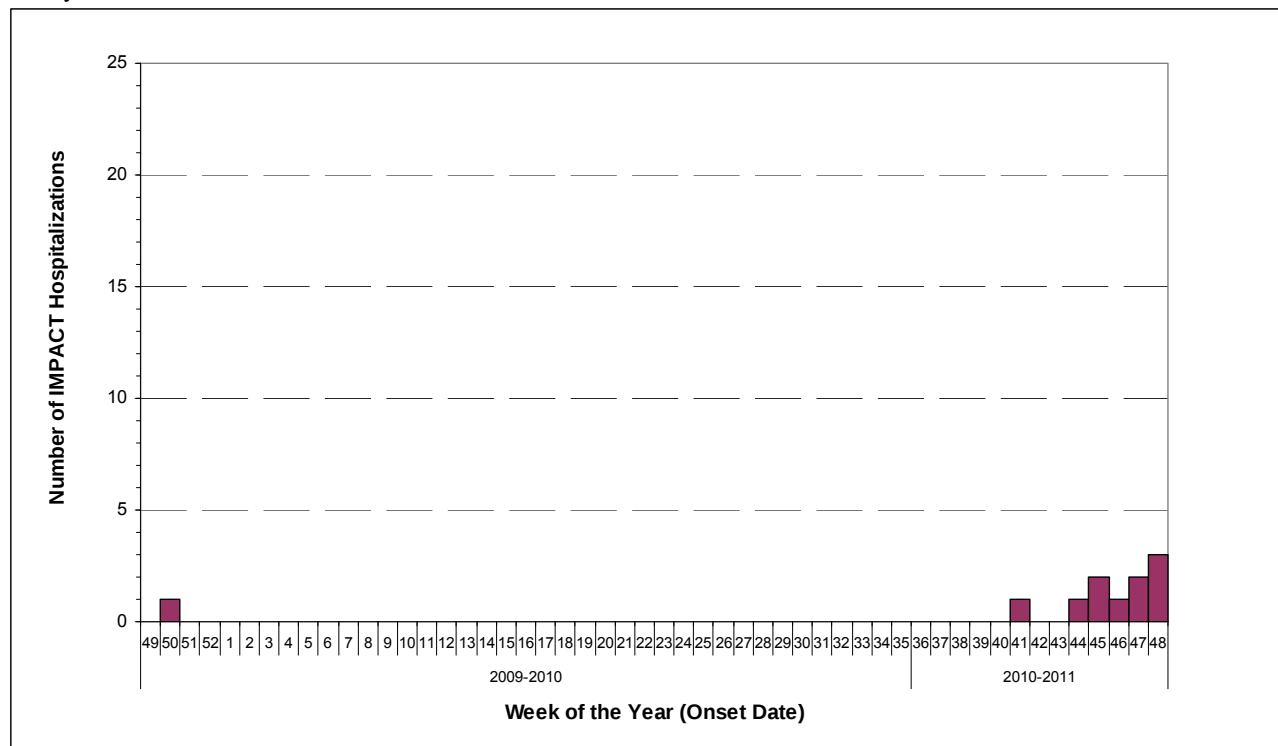
Ontario Influenza Bulletin, 2010-2011

Surveillance Week 48 (November 28, 2010 – December 4, 2010)

Immunization Monitoring Program ACTive (IMPACT) is a pediatric hospital-based national active surveillance network for adverse events following immunization and selected infectious diseases in children, including influenza-associated pediatric hospitalizations and complements the [Canadian Adverse Event Following Immunization Surveillance System](#) (CAEFISS). It involves 12 Canadian centres, two of which are in Ontario (Children's Hospital of Eastern Ontario in Ottawa and the Hospital for Sick Children, Toronto).

Reports of adverse events following immunization are reported to the Vaccine Safety Unit at the Immunization Division of the Public Health Agency of Canada. Note that the number of IMPACT hospitalizations presented in this week's bulletin has been updated with the latest data received from PHAC.

Figure 14: Number of influenza A related hospitalizations in Ontario reported through IMPACT up to Week 48, by onset date.



Source: Public Health Agency of Canada

*Note: The numbers of IMPACT hospitalizations presented reflect the latest data received at the time of publication, thus lower numbers of cases reported in recent weeks may be attributed in part to reporting delays.

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/en/pro/programs/publichealth/flu/bulletins/2010/default.aspx>

When referencing material from the Ontario Influenza Bulletin please use the following format:
Ontario Ministry of Health and Long-Term Care, Ontario Influenza Bulletin 2010-2011 Season, Surveillance Week ##. <URL>
2. Ontario Agency for Health Protection and Promotion
OAHPP Weekly Laboratory Surveillance Update
<http://www.oahpp.ca/SRI%20Bulletin.php>
3. Public Health Agency of Canada
Issues of FluWatch can be accessed at:
www.phac-aspc.gc.ca/fluwatch/
4. United States Centers for Disease Control and Prevention
<http://www.cdc.gov/flu/weekly/fluactivity.htm>
5. European Influenza Surveillance Scheme
<http://www.ecdc.europa.eu/en/activities/surveillance/EISN/Pages/home.aspx>

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>

Influenza Surveillance Weeks 2010-2011 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
WK49	5-Dec-10	11-Dec-10	14-Dec-10
WK50	12-Dec-10	18-Dec-10	21-Dec-10
WK51	19-Dec-10	25-Dec-10	4-Jan-11
WK52	26-Dec-10	1-Jan-11	4-Jan-11
WK1	2-Jan-11	8-Jan-11	11-Jan-11
WK2	9-Jan-11	15-Jan-11	18-Jan-11
WK3	16-Jan-11	22-Jan-11	25-Jan-11
WK4	23-Jan-11	29-Jan-11	1-Feb-11
WK5	30-Jan-11	5-Feb-11	8-Feb-11
WK6	6-Feb-11	12-Feb-11	15-Feb-11
WK7	13-Feb-11	19-Feb-11	22-Feb-11
WK8	20-Feb-11	26-Feb-11	1-Mar-11
WK9	27-Feb-11	5-Mar-11	8-Mar-11
WK10	6-Mar-11	12-Mar-11	15-Mar-11
WK11	13-Mar-11	19-Mar-11	22-Mar-11
WK12	20-Mar-11	26-Mar-11	29-Mar-11
WK13	27-Mar-11	2-Apr-11	5-Apr-11
WK14	3-Apr-11	9-Apr-11	12-Apr-11
WK15	10-Apr-11	16-Apr-11	19-Apr-11
WK16	17-Apr-11	23-Apr-11	26-Apr-11
WK17	24-Apr-11	30-Apr-11	3-May-11
WK18	1-May-11	7-May-11	10-May-11
WK19	8-May-11	14-May-11	17-May-11
WK20	15-May-11	21-May-11	24-May-11
WK21	22-May-11	28-May-11	31-May-11
WK22	29-May-11	4-Jun-11	7-Jun-11
WK23	5-Jun-11	11-Jun-11	14-Jun-11
WK24	12-Jun-11	18-Jun-11	21-Jun-11
WK25	19-Jun-11	25-Jun-11	28-Jun-11
WK26	26-Jun-11	2-Jul-11	5-Jul-11
WK27	3-Jul-11	9-Jul-11	12-Jul-11
WK28	10-Jul-11	16-Jul-11	19-Jul-11
WK29	17-Jul-11	23-Jul-11	26-Jul-11

WEEKS	START	END	Appendix C Submission to MOHLTC
WK30	24-Jul-11	30-Jul-11	2-Aug-11
WK31	31-Jul-11	6-Aug-11	9-Aug-11
WK32	7-Aug-11	13-Aug-11	16-Aug-11
WK33	14-Aug-11	20-Aug-11	23-Aug-11
WK34	21-Aug-11	27-Aug-11	30-Aug-11
WK35	28-Aug-11	3-Sep-11	6-Sep-11

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

§Health units have been requested to consider laboratory confirmed pH1N1 outbreaks in camps in their region when evaluating ILI activity levels

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.