

SURVEILLANCE WEEKS 51 & 52 (December 19, 2010– January 1, 2011)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from December 19, 2010 to January 1, 2011 (Weeks 51 & 52). **All data are for weeks 51 & 52** and data extraction and analysis for this issue of the Bulletin occurred on January 5, 2011 unless otherwise specified.

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	Six hundred and forty two influenza cases were reported in weeks 51 and 52, which is higher than weeks 49 and 50* (302 influenza cases). The percent positivity of laboratory tests for influenza A in Ontario was 28.7% for week 52. This is higher than week 50 (19.1%) (Figure 6). Enteroviruses continue to circulate in Ontario (Table 5).
Influenza Outbreaks	Higher	33 new institutional influenza A outbreaks were reported for the current reporting weeks from Toronto (18), Central West (8), South West (4), Eastern (1) and Central East (2) health regions.
Influenza Activity Levels Reported by Health Units	Higher	Toronto reported 'widespread' level influenza activity. Central East, Central West, Eastern and South West health regions reported 'localized' level influenza activity while the remaining health regions reported either sporadic, no influenza activity or did not report for week 52.
ILI Consultation Rate reported by Sentinel Physicians	Higher	The overall ILI consultation rate has increased from 32.52/1,000 patient visits in Week 50 to 104.80/1,000 patient visits in Week 52. The ILI rate is higher than the average rate for week 52 from previous years.
Hospitalizations Among Lab Confirmed Cases of Influenza	Slightly higher	There were 74 new hospitalized cases reported from December 19 to January 1, which is slightly higher than the 67 that were reported from December 5 to December 18.
Deaths Among Lab Confirmed Cases of Influenza	Higher	Six deaths were reported from December 19 to January 1, which is more than the two that were reported from December 5 to December 18.
OVERALL ASSESSMENT	Influenza activity in Ontario is <i>higher</i> compared to the previous report in Week 50.	Overall, the indicators show that influenza activity was <i>higher</i> during weeks 51 & 52 compared to week 50.

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

Overall, influenza activity in Ontario during weeks 51 & 52, 2010, was higher when compared to week 50, 2010. Ontario health units reported 642 new confirmed cases of influenza A for the current week through the integrated Public Health Information System (iPHIS). A total of 281 institutional respiratory infection outbreaks have been reported in 2010 up to Weeks 51 & 52, including 33 new influenza A outbreaks from Toronto (18), Central West (8), South West (4), Eastern (1) and Central East (2) health regions. For week 52, Toronto reported widespread influenza activity; Central East, Central West, Eastern and South West health regions reported 'localized' level influenza activity; and the remaining health regions reported either sporadic, no influenza activity or did not report for week 52. The ILI rate is higher than the average rate for week 52 from previous years.

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 (Weeks 51 & 52, 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	4	11	0	1	16
Influenza A (Not Subtyped/No Subtype)	4	8	3	63	141	38	95	352
Influenza A (Seasonal H1)	0	0	0	0	0	0	0	0
Influenza A (Seasonal H3)	2	2	8	99	137	8	15	271
Influenza A** (Other)	0	0	0	0	0	0	0	0
Influenza B	0	0	0	0	2	0	1	3
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	6	10	11	166	291	46	112	642
Institutional outbreaks of Influenza A‡	0	0	1	2	18	4	8	33
Institutional outbreaks of Influenza B‡	0	0	0	0	0	0	0	0

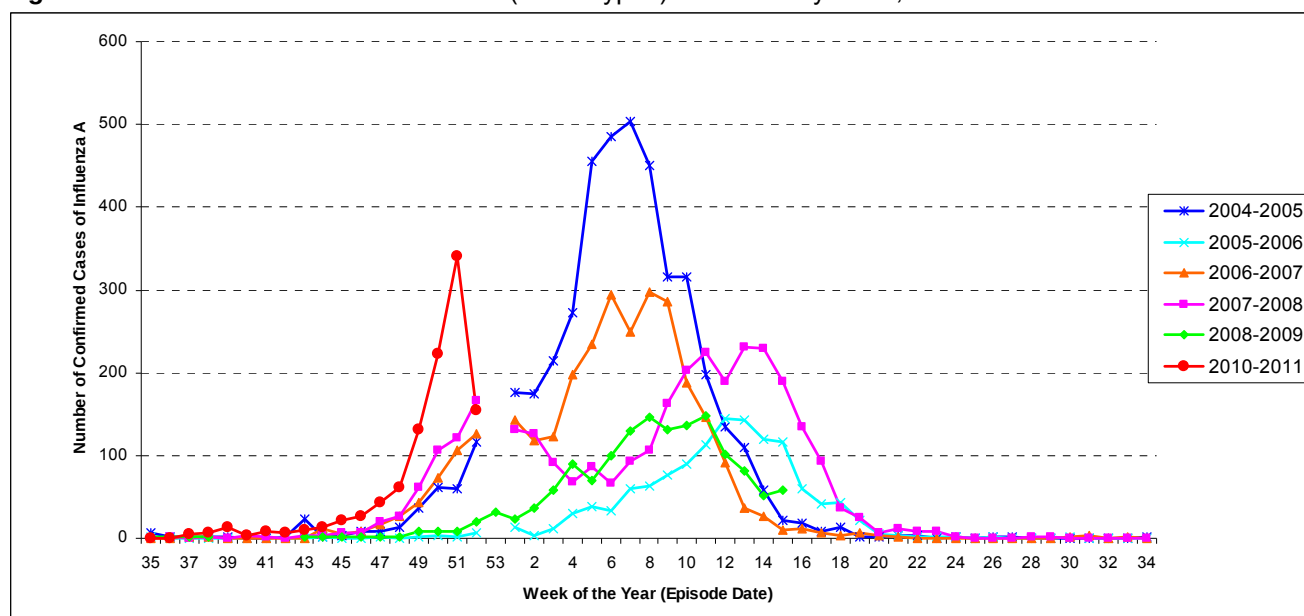
SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [06/01/2010].

* 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. Note: Several influenza A cases have been reported as seasonal H1N1; however, these cases have been classified as 'No subtype/not subtyped' in this table until the subtype has been verified.

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 [06/01/2010].

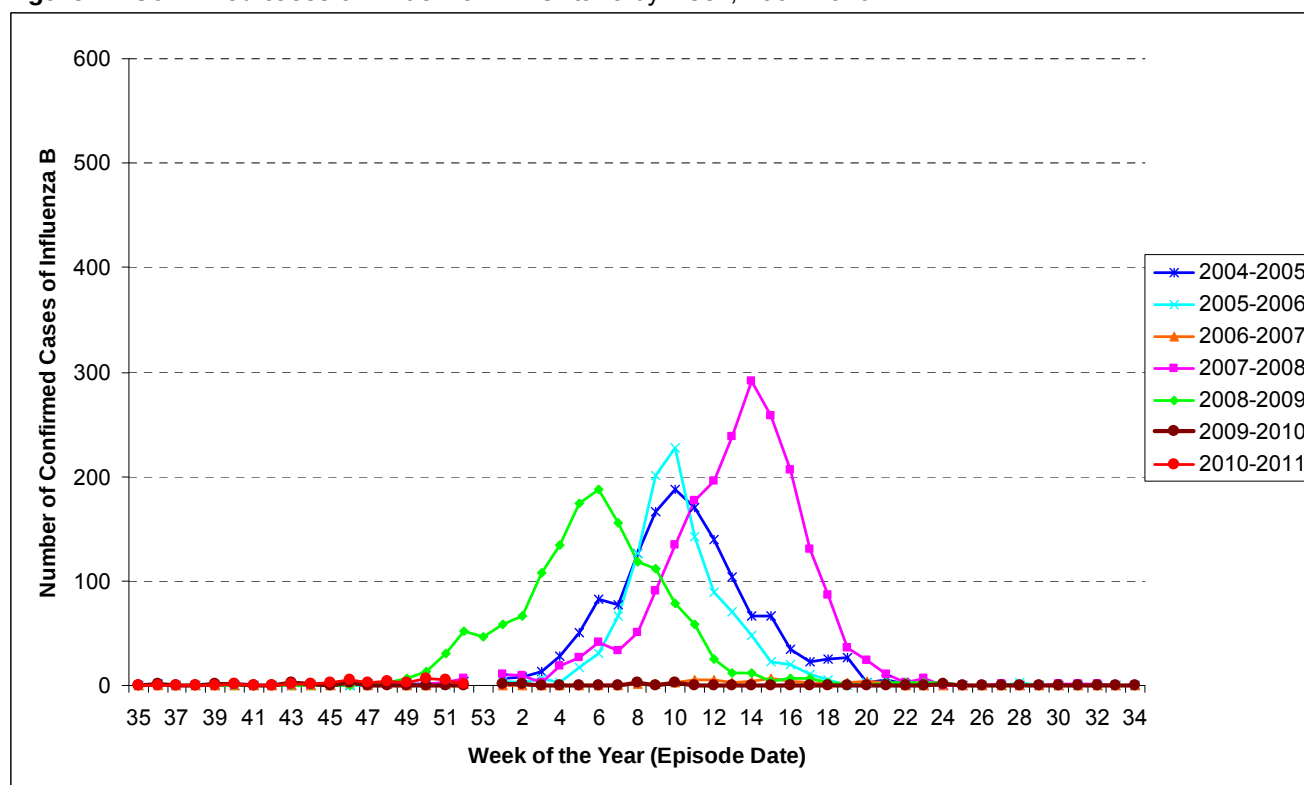
[†] Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

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[†]

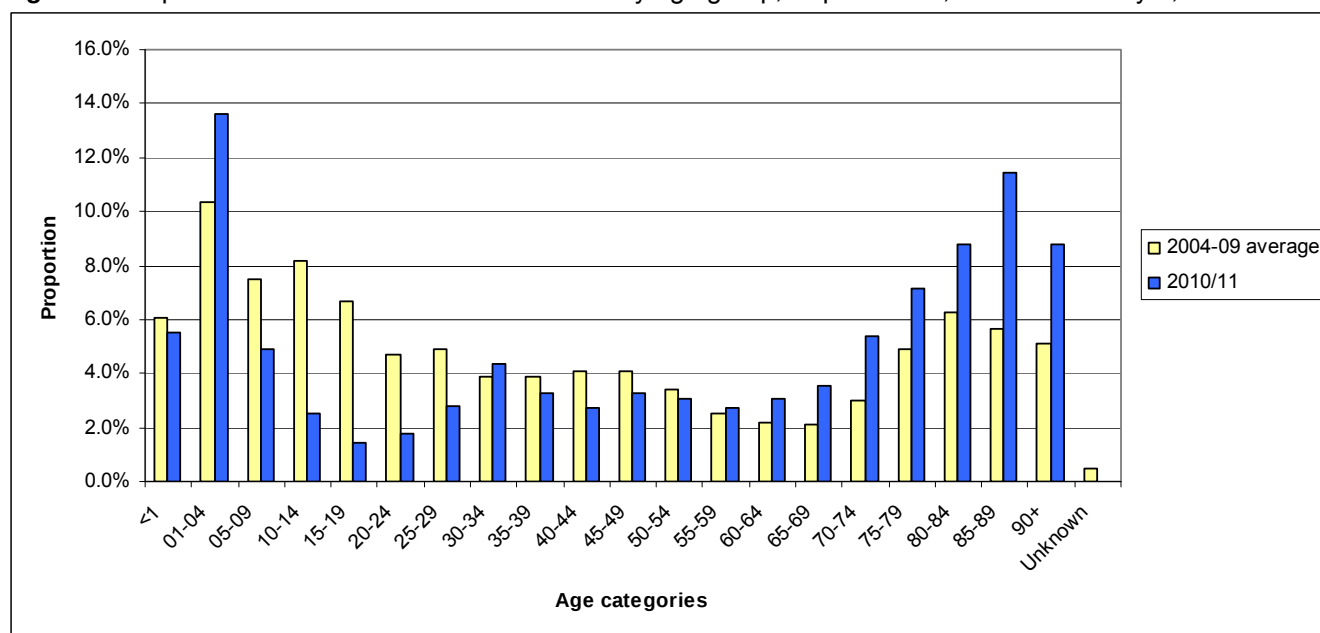


SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [06/01/2010].

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

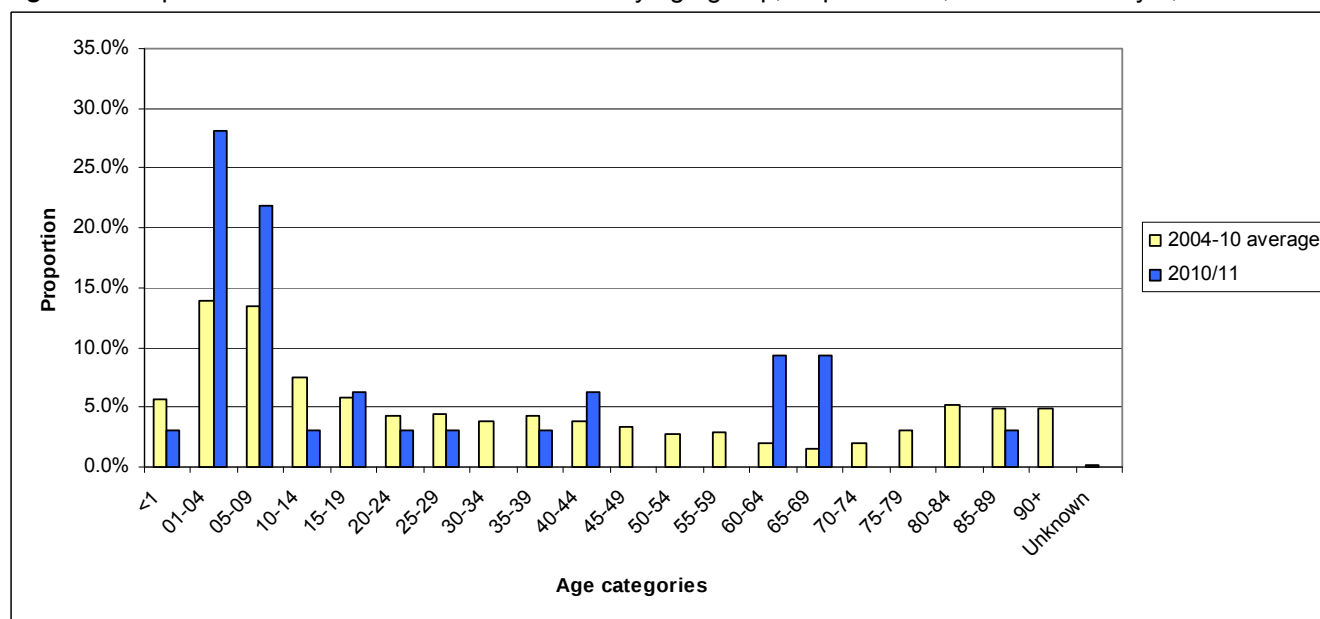
Figure 3. Proportion of influenza A cases in Ontario by age group, September 1, 2004 to January 1, 2010



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [06/01/2010].

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 January 1, 2010



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [06/01/2010].

Table 2: Confirmed cases of influenza by health unit & health region with a reported date during Week 52, 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	4	0	0	0	0	4
	Thunder Bay District	0	0	0	0	0	0	0	0
	TOTAL NORTH WEST	0	0	4	0	0	0	0	4
North East	Algoma	0	0	0	0	0	0	0	0
	North Bay Parry Sound District	0	0	2	0	0	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	2	0	0	0	0	2
Eastern	City of Ottawa	0	0	1	0	2	0	0	3
	Eastern Ontario	0	0	0	0	0	0	0	0
	Hastings & Prince Edward Counties	0	0	1	0	3	0	0	4
	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	2	0	5	0	0	7
Central East	Durham Region	1	0	1	0	3	0	0	5
	Haliburton, Kawartha, Pine Ridge	0	1	1	0	1	0	0	3
	Peel Region	0	1	13	0	28	0	0	42
	Peterborough County-City	0	0	0	0	0	0	0	0
	Simcoe Muskoka District	0	0	2	0	3	0	0	5
	York Region	0	0	6	0	5	0	0	11
	TOTAL CENTRAL EAST	1	2	23	0	40	0	0	66
Toronto	Toronto	5	0	88	0	46	0	2	141
	TOTAL TORONTO	5	0	88	0	46	0	2	141
South West	Chatham-Kent	0	0	1	0	0	0	0	1
	Elgin-St. Thomas	0	0	1	0	0	0	0	1
	Grey Bruce	0	0	1	0	0	0	0	1
	Huron County	0	0	1	0	0	0	0	1
	Lambton County	0	0	0	0	0	0	0	0
	Middlesex-London	0	7	4	0	0	0	0	11
	Oxford County	0	0	5	0	3	0	0	8
	Perth District	0	0	8	0	0	0	0	8
	Windsor-Essex County	0	0	1	0	0	0	0	1
	TOTAL SOUTHWEST	0	7	22	0	3	0	0	32
Central West	Brant County	0	0	0	0	0	0	0	0
	City Of Hamilton	0	0	42	0	0	0	1	43
	Haldimand-Norfolk	0	0	1	0	0	0	0	1
	Halton Region	0	0	1	0	2	0	0	3
	Niagara Region	0	0	0	0	0	0	0	0
	Waterloo Region	0	0	11	0	2	0	0	13
	Wellington-Dufferin-Guelph	0	0	5	0	0	0	0	5
	TOTAL CENTRAL WEST	0	0	60	0	4	0	1	65
	TOTAL ONTARIO	6	9	201	0	98	0	3	317

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [06/01/2010]

*includes indeterminate, untypeable and other subtypes

Note: Several influenza A cases have been reported as seasonal H1N1; however, these cases have been classified as 'No subtype/not subtyped' in this table until the subtype has been verified

Table 3: Cumulative* confirmed cases of influenza by health unit & health region with a reported date between September 1, 2010 – January 1, 2011

Region	Health Unit	Influenza A					Influenza A & B	Influenza B	TOTAL Cumulative
		pH1N1	No Subtype/ Not Subtyped	Other*	H1	H3			
North West	Northwestern	0	6	0	0	4	0	0	10
	Thunder Bay District	0	0	0	0	0	0	1	1
	TOTAL NORTH WEST	0	6	0	0	4	0	1	11
North East	Algoma	0	0	0	0	0	0	0	0
	North Bay Parry Sound District	0	9	0	0	3	0	0	12
	Porcupine	0	0	0	0	1	0	0	1
	Sudbury & District	0	0	0	0	0	0	0	0
	Timiskaming	0	0	0	0	0	0	0	0
	TOTAL NORTH EAST	0	9	0	0	4	0	0	13
Eastern	City of Ottawa	0	3	0	0	2	0	0	5
	Eastern Ontario	0	0	0	0	3	0	0	3
	Hastings & Prince Edward Counties	0	1	0	0	4	0	1	6
	Kingston, Frontenac, Lennox & Addington	0	1	0	0	3	0	0	4
	Leeds, Grenville And Lanark District	0	0	0	0	0	0	0	0
	Renfrew County And District	0	0	0	0	1	0	0	1
	TOTAL EASTERN	0	5	0	0	13	0	1	19
Central East	Durham Region	5	9	0	0	22	0	4	40
	Haliburton, Kawartha, Pine Ridge	0	3	0	0	9	0	0	12
	Peel Region	1	53	0	0	73	0	5	132
	Peterborough County-City	0	2	0	0	0	0	0	2
	Simcoe Muskoka District	1	10	0	0	14	0	0	25
	York Region	3	29	0	0	50	0	3	85
	TOTAL CENTRAL EAST	10	106	0	0	168	0	12	296
Toronto	Toronto	23	187	2	0	295	0	11	518
	TOTAL TORONTO	23	187	2	0	295	0	11	518
South West	Chatham-Kent	0	1	0	0	0	0	0	1
	Elgin-St. Thomas	0	1	0	0	1	0	0	2
	Grey Bruce	0	2	0	0	0	0	0	2
	Huron County	0	9	0	0	1	0	0	10
	Lambton County	0	0	0	0	1	0	0	1
	Middlesex-London	1	14	0	0	7	0	0	22
	Oxford County	0	6	0	0	4	0	0	10
	Perth District	0	11	0	0	4	0	0	15
	Windsor-Essex County	0	1	0	0	0	0	1	2
	TOTAL SOUTHWEST	1	45	0	0	18	0	1	65
Central West	Brant County	0	2	0	0	2	0	0	4
	City Of Hamilton	0	70	0	0	4	0	1	75
	Haldimand-Norfolk	0	1	0	0	1	0	0	2
	Halton Region	0	9	0	0	31	0	3	43
	Niagara Region	0	2	0	0	11	0	0	13
	Waterloo Region	0	25	0	0	7	0	2	34
	Wellington-Dufferin-Guelph	1	6	0	0	6	0	0	13
	TOTAL CENTRAL WEST	1	115	0	0	62	0	6	184
	TOTAL ONTARIO	35	473	2	0	564	0	32	1106

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [06/01/2010].

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

Note: Several influenza A cases have been reported as seasonal H1N1; however, these cases have been classified as 'No subtype/not subtyped' in this table until the subtype has been verified

Hospitalizations and deaths among laboratory confirmed influenza cases, Sep. 1, 2010 – Jan. 1, 2011

As of January 1, 2011, 189 hospitalizations and ten deaths have been reported among lab confirmed influenza cases reported in Ontario for the 2010-2011 season. Most of the hospitalizations and all of the deaths have occurred in influenza A cases. The highest rates of hospitalization have been observed in people under the age of five and 65 years of age and older.

Table 4a. Incidence of hospitalizations among lab confirmed influenza cases in Ontario, Sep. 1, 2010 – Jan. 1, 2011

Age Group	Influenza A		Influenza B		Total Influenza	
	Number	Rate/100,000	Number	Rate/100,000	Number	Rate/100,000
<1	16	11.73	0	0.00	16	11.73
1-4	22	3.99	3	0.54	25	4.53
5-14	10	0.66	1	0.07	11	0.73
15-24	4	0.23	0	0.00	4	0.23
25-44	18	0.48	1	0.03	19	0.51
45-64	18	0.49	1	0.03	19	0.52
65+	95	5.24	0	0.00	95	5.24
TOTAL	183	1.39	6	0.05	189	1.43

Source (incidence): Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted at 8:30 am [06/01/2011]

Source (incidence): Ontario population projections for 2008: Ontario Ministry of Health and Long-Term Care, Public Health Planning Database (PHPDB), extracted [30/11/2010]

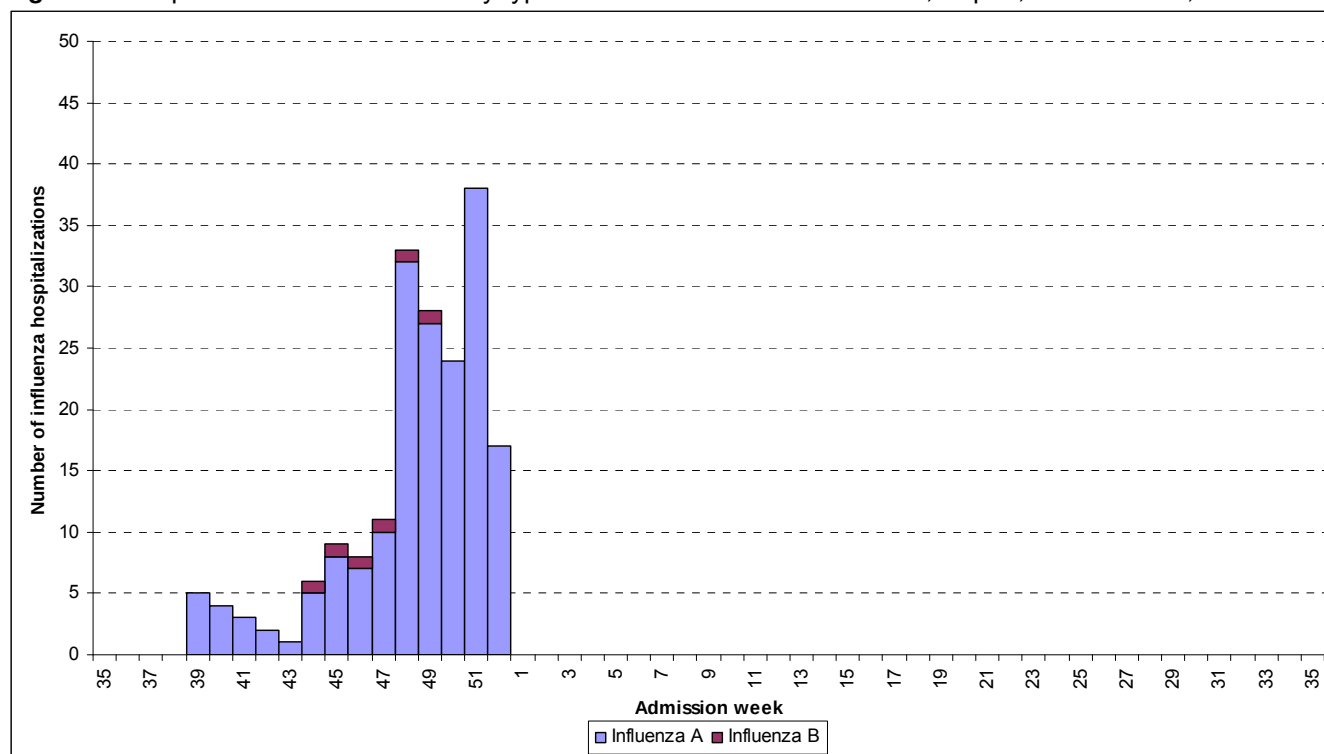
Table 4b. Incidence of deaths among lab confirmed influenza cases in Ontario, Sep. 1, 2010 – Jan. 1, 2011

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	1	0.18	0	0.00	1	0.18
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	2	0.05	0	0.00	2	0.05
65+	7	0.39	0	0.00	7	0.39
TOTAL	10	0.08	0	0.00	10	0.08

Source (incidence): Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted at 8:30 am [06/01/2011]

Source (incidence): Ontario population projections for 2008: Ontario Ministry of Health and Long-Term Care, Public Health Planning Database (PHPDB), extracted [30/11/2010]

Figure 5: Hospitalized influenza cases by type and admission week in Ontario, Sep. 1, 2010 – Jan 1, 2011



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted at 8:30 am [06/01/2011]

Note: Interpret tail with caution due to reporting lags

Influenza Subtype(s) *:

During weeks 51 & 52, a total of 9,674 results of isolate testing were received by the Public Health Agency of Canada, 2276 isolates tested positive for influenza A and 40 isolates tested positive for influenza B. Of the reported influenza A isolates, 999 isolates were from Ontario (43.9%), 994 isolates were from Quebec (43.7%), 172 isolates were from Manitoba (7.6%), and 81 isolates were from Alberta (3.6%). Twenty-eight of the reported influenza B isolates were from Ontario (70.0%), eight were from Quebec (20.0%) and three were from Alberta (7.5%).

Antigenic Characterization (National)†:

Since September 1, 2010, the National Microbiology Laboratory (NML) has antigenically characterized 94 influenza viruses (71 H3N2, 8 H1N1 and 15 B virus) that were received from Canadian laboratories.

Influenza A (H3N2):

The 71 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 eight 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 15 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: 37 influenza A /Perth/16/2009-like (H3N2), six influenza A/California/7/2009 and eight influenza B/Brisbane/60/2008-like.

Antiviral Resistance and Sensitivity (National)†:

a) Amantadine:

A total of 89 H3N2 isolates and the eight pandemic H1N1 isolates tested for resistance to amantadine were found to be resistant. One H3N2 isolate was sensitive to amantadine.

b) Oseltamivir:

Eighty-four influenza isolates (61 H3N2, 15 B and 8 pandemic H1N1) were tested for resistance to oseltamivir by phenotypic assay and/or sequencing. All 61 H3N2, 15 B and eight pandemic H1N1 isolates were sensitive to oseltamivir.

c) Zanamivir:

Eighty-four influenza isolates (61 H3N2, 15 B and 8 pandemic H1N1) were tested for resistance to zanamivir by phenotypic assay. All 61 H3N2, 15 B and eight pandemic H1N1 isolates were sensitive to zanamivir.

Antiviral Resistance and Sensitivity (Provincial)†:

a) Amantadine:

Of the 48 H3N2 isolates and the six pandemic H1N1 isolates tested, 47 influenza A (H3N2) isolates and all of the pandemic H1N1 isolates were resistant to amantadine. One H3N2 isolate was sensitive to amantadine.

b) Oseltamivir:

Of the 27 H3N2 isolates, eight influenza B isolates and six pandemic H1N1 isolates tested, all influenza A (H3N2), influenza B and pandemic H1N1 isolates were sensitive to oseltamivir.

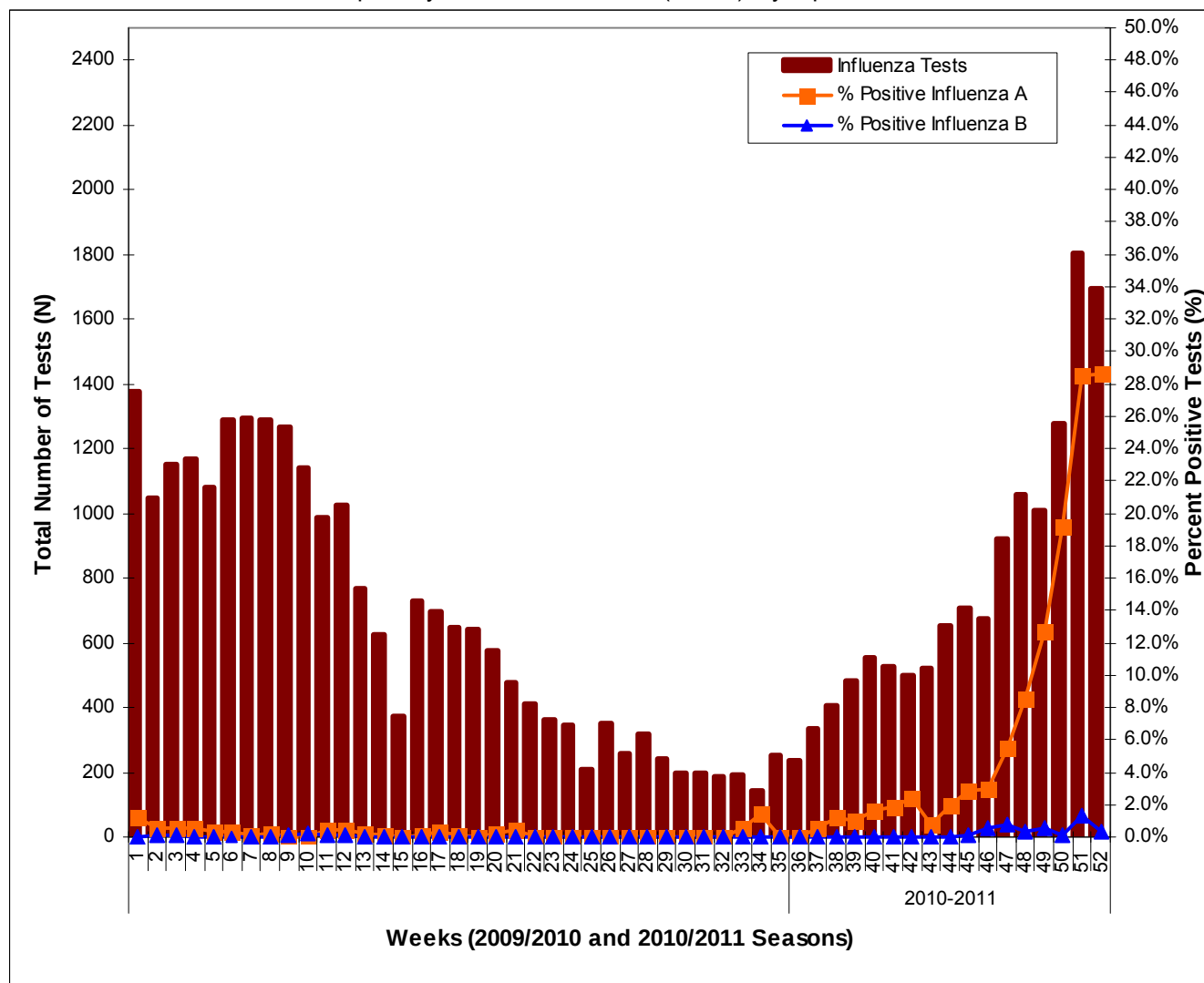
c) Zanamivir:

Of the 27 H3N2 isolates, the eight influenza B isolates and six pandemic H1N1 isolates tested, all influenza A (H3N2), influenza B and pandemic H1N1 isolates were sensitive to zanamivir.

†National Antigenic Characterization and Antiviral Resistance data are current as of January 6, 2011.

* 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 52, 2010. Please note that the last version received from PHAC as of 4:00PM on January 6, 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 52, 2010. Please note that the last version received from PHAC as of 4:00PM on January 6, 2011 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 52

Organism Name	Number of Positive Tests	Number of Tests	% Positive
Respiratory Syncytial Virus	37	1106	3.35
Parainfluenza (all types)	8	1022	0.78
Adenovirus	10	1022	0.98
Human Metapneumovirus	6	480	1.25
Rhinovirus	16	721	2.22
Coronavirus	18	342	5.26

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 52, 2010. Please note that the last version received from PHAC as of 4:00PM on January 6, 2010 was used.

Table 6: Institutional respiratory infection outbreaks in Ontario: new outbreaks* in Weeks 51 & 52 and total outbreaks for the season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A (All subtypes)	33	71.7
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	1	2.2
Other organisms ^α	1	2.2
Combined Outbreaks [†]	0	0.0
Enterovirus/rhinovirus	0	0.0
No organism identified	11	23.9
TOTAL	46	100.0
Total Respiratory Infection Outbreaks of the Season to date**	N	% (of outbreaks)
Influenza A (All subtypes)	75	26.7
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	3	1.1
RSV	3	1.1
Combined Outbreaks [†]	7	2.5
Other organisms ^α	6	2.1
Enterovirus/rhinovirus	123	43.8
No organism identified	64	22.8
TOTAL	281	100.0
Types of Institutions – All Outbreaks **	N	% (of outbreaks)
Long-Term Care Homes	168	59.8
Hospitals	17	6.0
Retirement Homes	32	11.4
Other	0	0.0
Unknown	64	22.8
TOTAL	281	100.0

SOURCE: Ontario Ministry of Health and Long-Term Care, Integrated Public Health Information System (iPHIS) database, extracted [05/01/2011]

* 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. December 19, 2010 – January 1, 2011

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to Week 52.

† 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*[†]

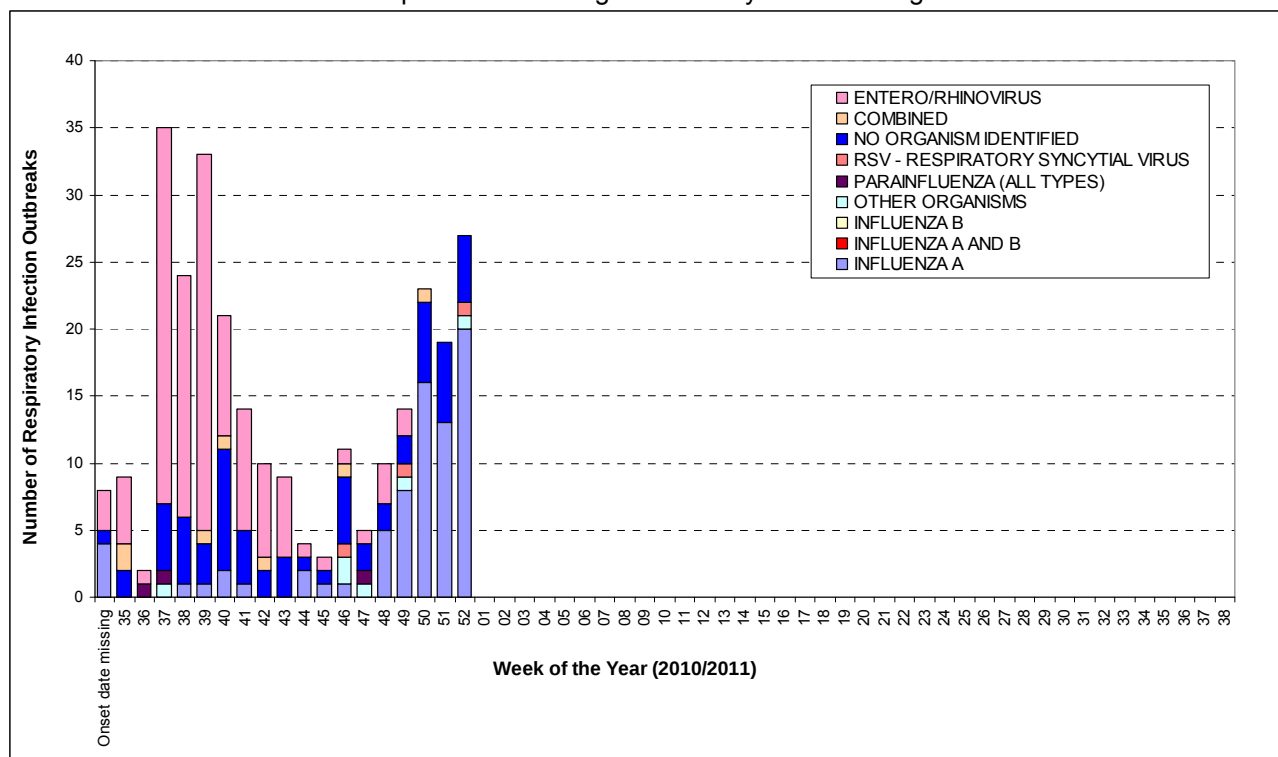
Outbreak Related Cases – All Outbreaks	N	% (of total cases)
Residents	3113	71.9
Patients	121	2.8
Staff	1096	25.3
Total Cases	4330	100.0
Deaths		% (of cases per role)
Residents	67	2.2
Patients	1	0.8
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	84	2.7
Patients	5	4.1
Staff	1	0.1
Hospitalizations		% (of cases per role)
Residents	146	4.7
Staff	2	0.2
Outbreak Related Cases – All Influenza Outbreaks	N	% (of total cases)
Residents	761	76.6
Patients	25	2.5
Staff	208	20.9
Total Cases	994	100.0
Deaths		% (of cases per role)
Residents	27	3.5
Patients	0	0.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	21	2.8
Patients	5	2.4
Staff	0	0.0
Hospitalizations		% (of cases per role)
Residents	68	8.9
Staff	0	0.0

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [05/01/2011]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2010 – January 1, 2011

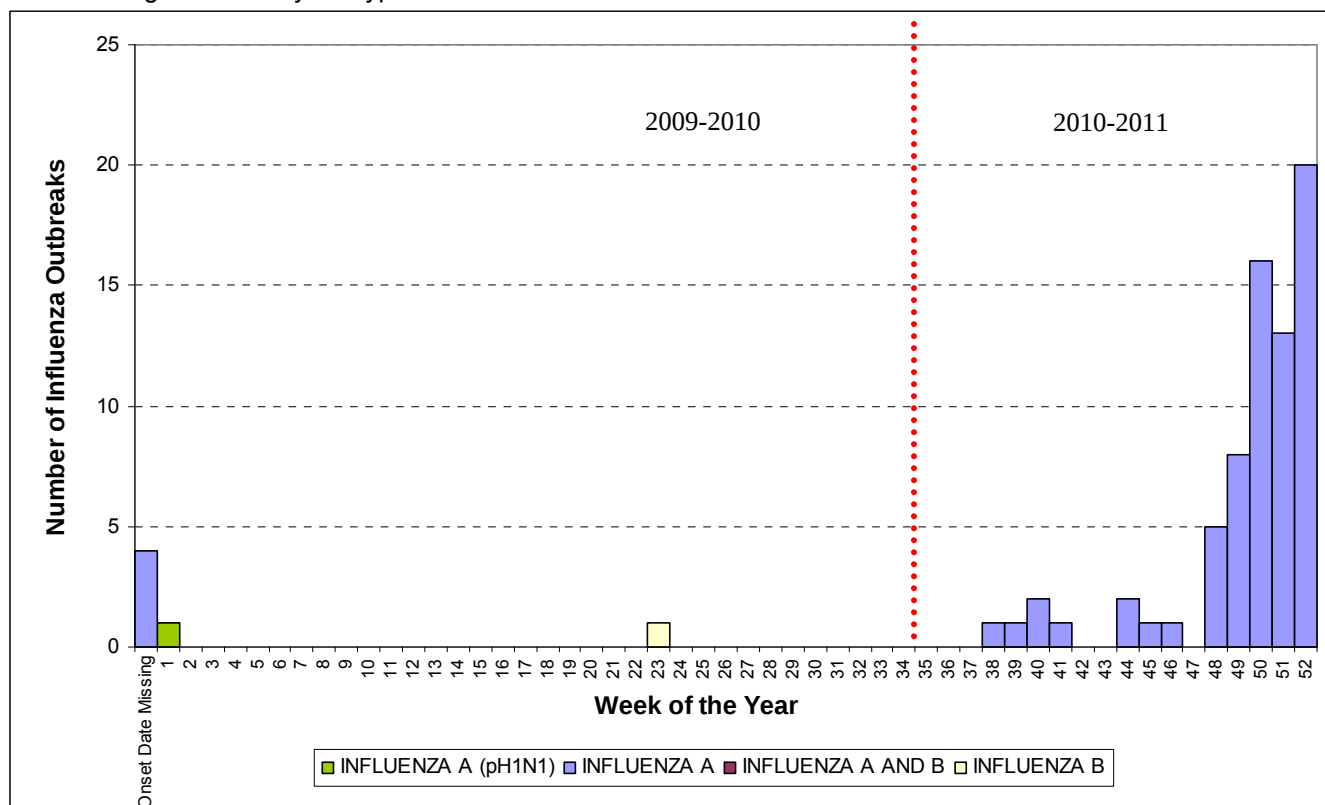
[†] Outbreak related case counts are based on aggregate case counts submitted for each outbreak and include laboratory and epidemiologically linked cases.

Figure 7: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including Week 52 by causative organism



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [05/01/2011]

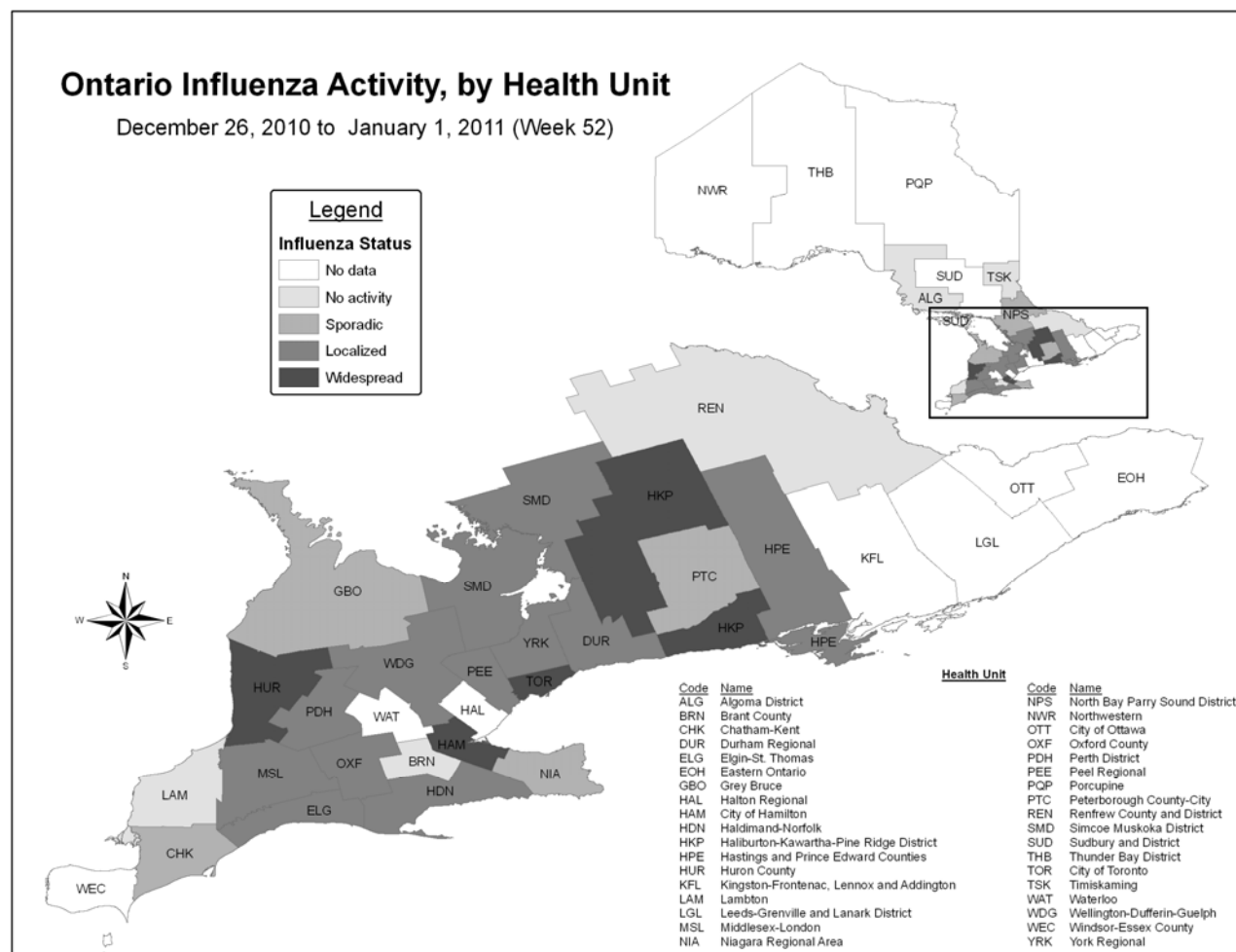
Figure 8: Institutional influenza outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including Week 52 by subtype*



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [05/01/2011]

*School outbreaks are not included in this chart.

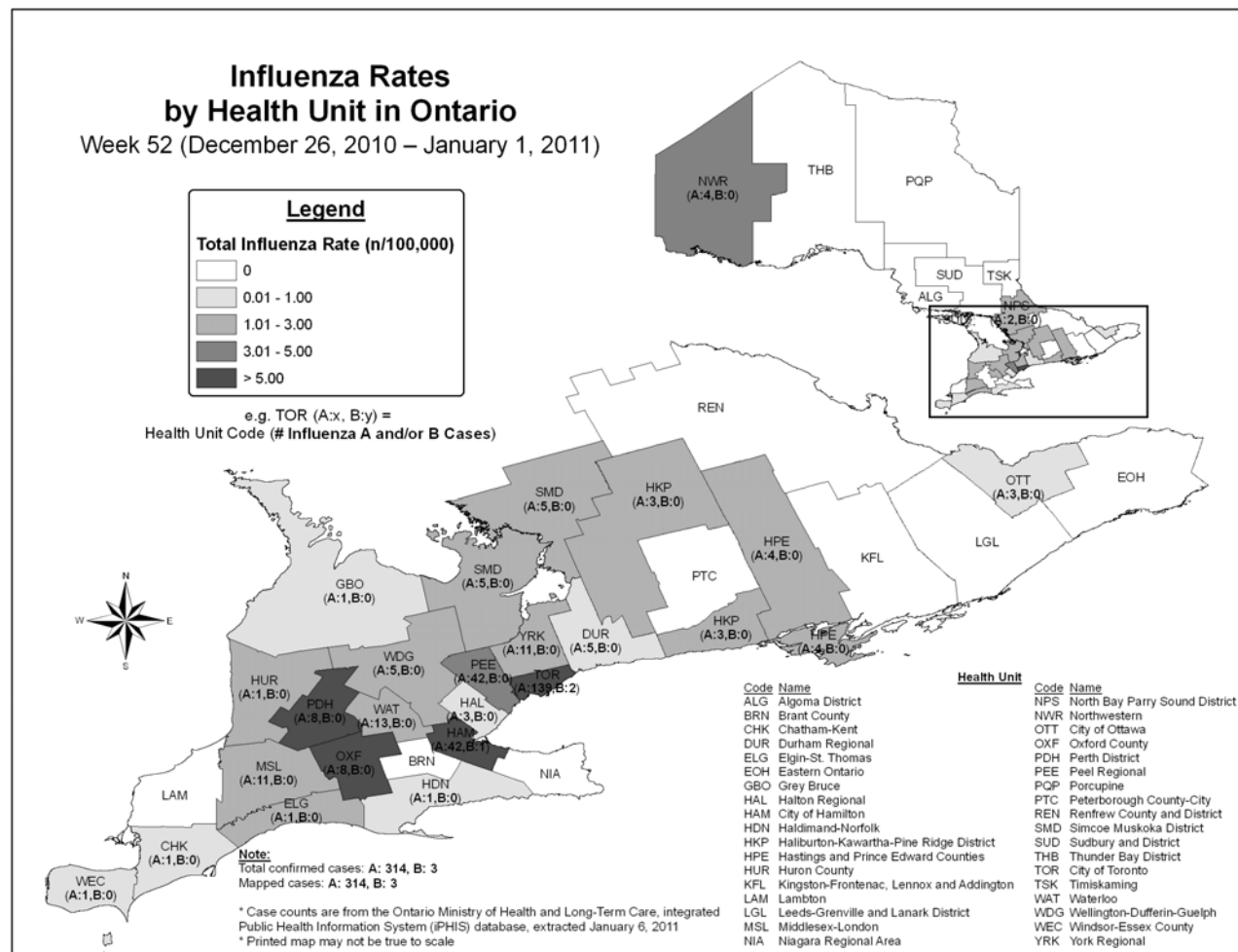
Figure 9: Influenza activity* levels in Ontario by health unit for Week 52, 2010



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

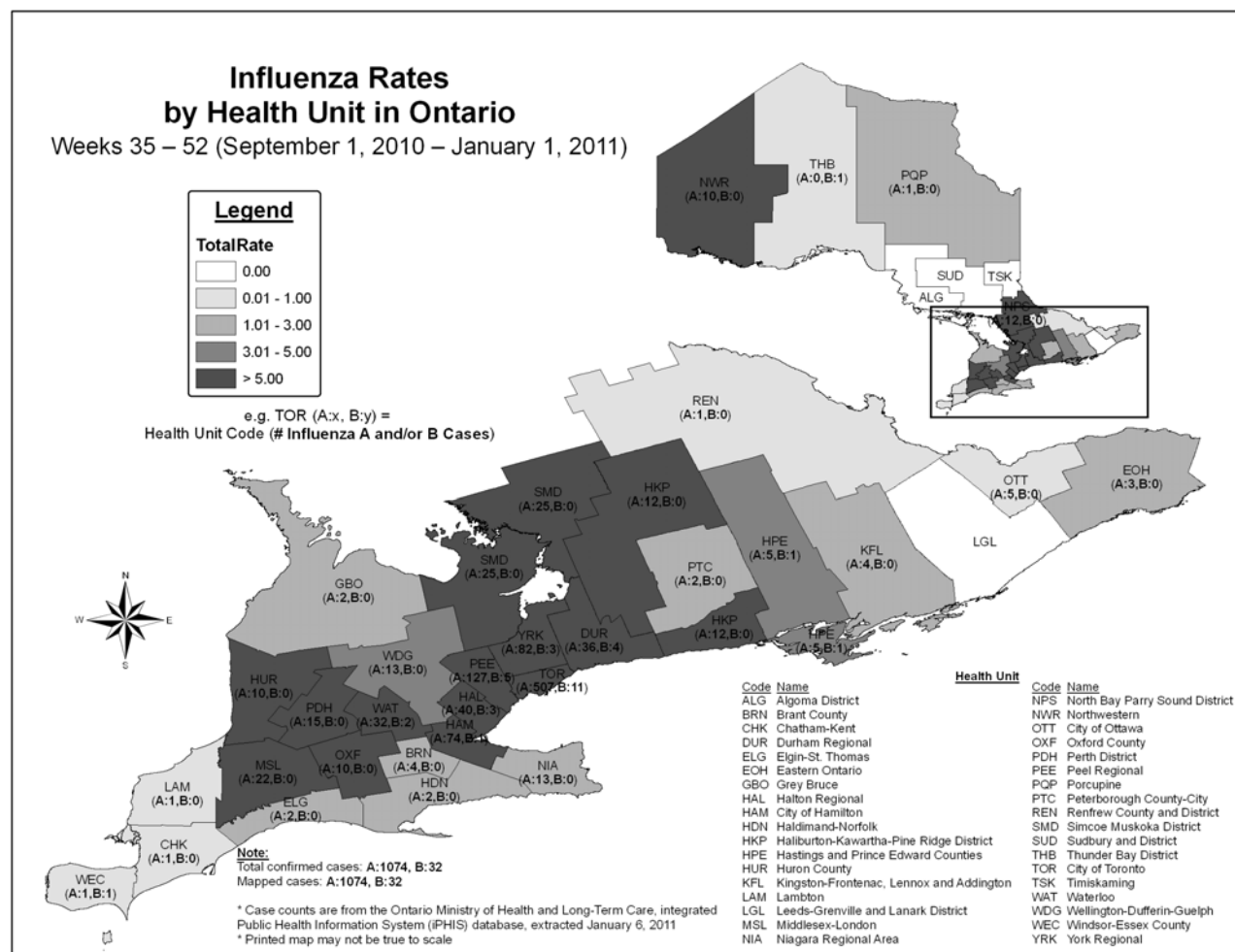
* Influenza activity levels are assigned by local public health units and reported to the MOHLTC by the Tuesday following the end of the surveillance week at 4 pm. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory confirmed institutional 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 52, 2010



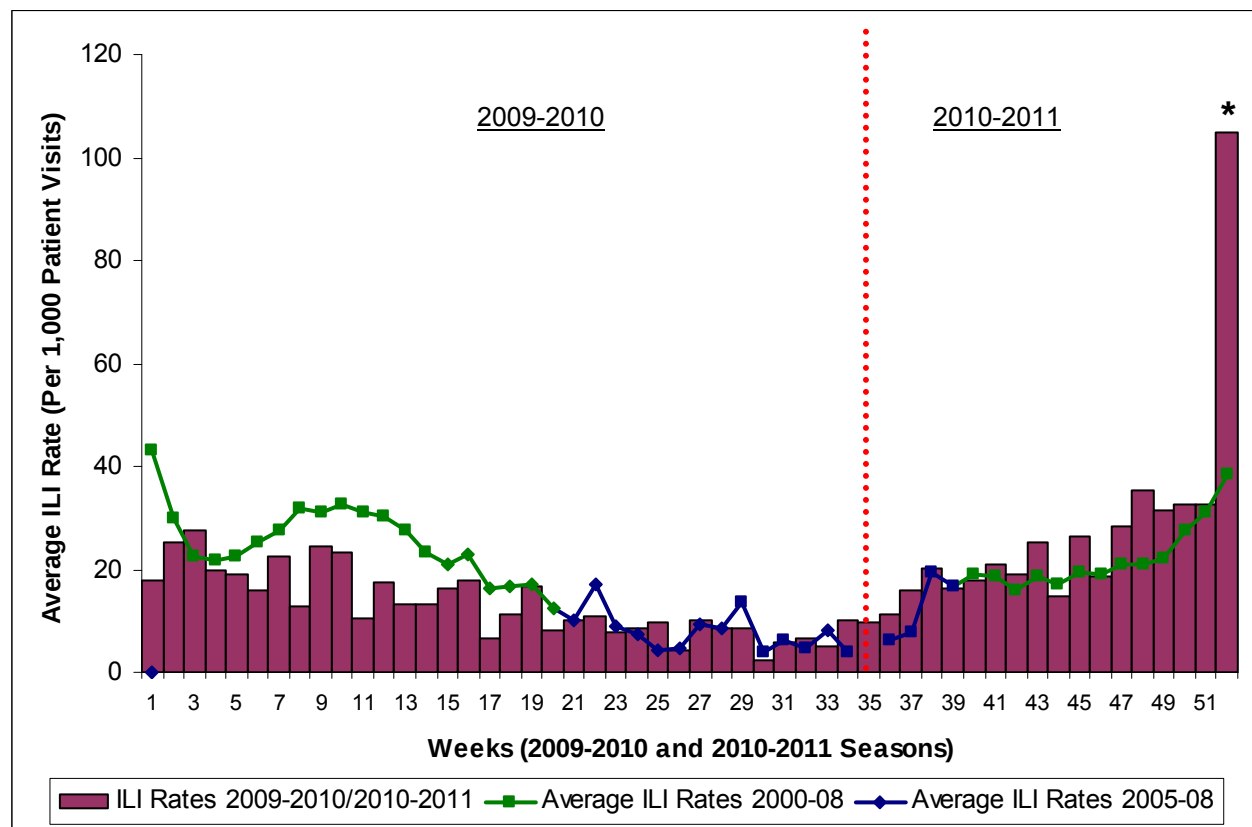
Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [06/01/2010]

Figure 11: Influenza cumulative incidence rates and counts in Ontario by health unit, Weeks 35 - 52 (September 1, 2010 – January 1, 2011)



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [06/01/2010]

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).

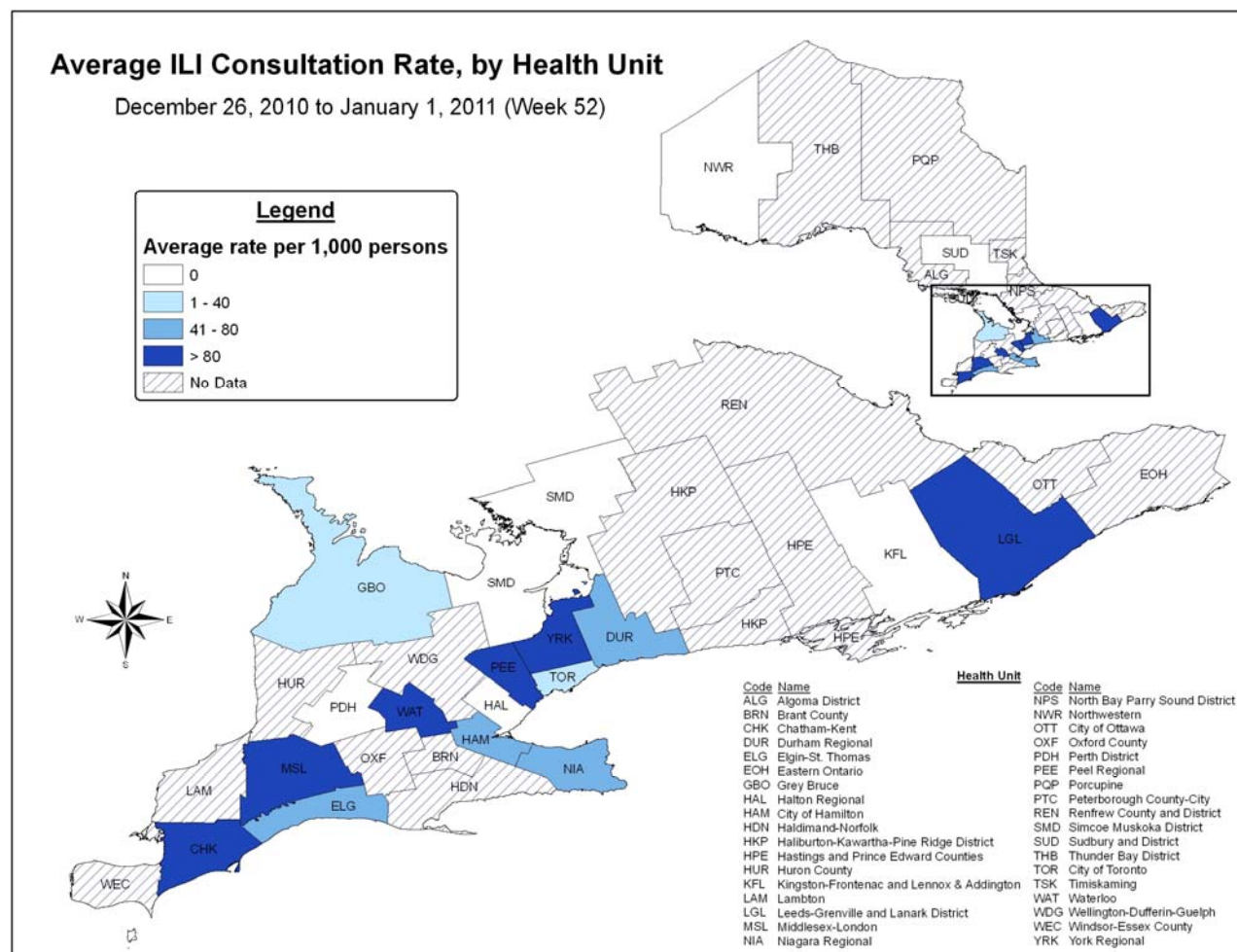


Source: Public Health Agency of Canada

* Sentinel physician information is reported to Public Health Agency of Canada, 96 sentinels reported in week 51 and 49 sentinels reported in week 52. The large increase in week 52 may be due to a combination of factors including: a true increase in influenza activity, reduced physician hours, fewer routine visits, and significantly fewer sentinel physicians reporting compared to normal (only 49 physicians reported in the last week of December, compared to at least 80 physicians normally reporting during any given week in the influenza season).

† 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 52.



Source: Public Health Agency of Canada

* Sentinel physicians report ILI and patient data to the Public Health Agency of Canada; 49 sentinels reported in week 52 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 52.

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
ILI Sum	15	15	77	11	0	118
ILI Consultation Rate (per 1,000 patient visits)	133.93	102.04	116.49	53.40	0.00	104.80

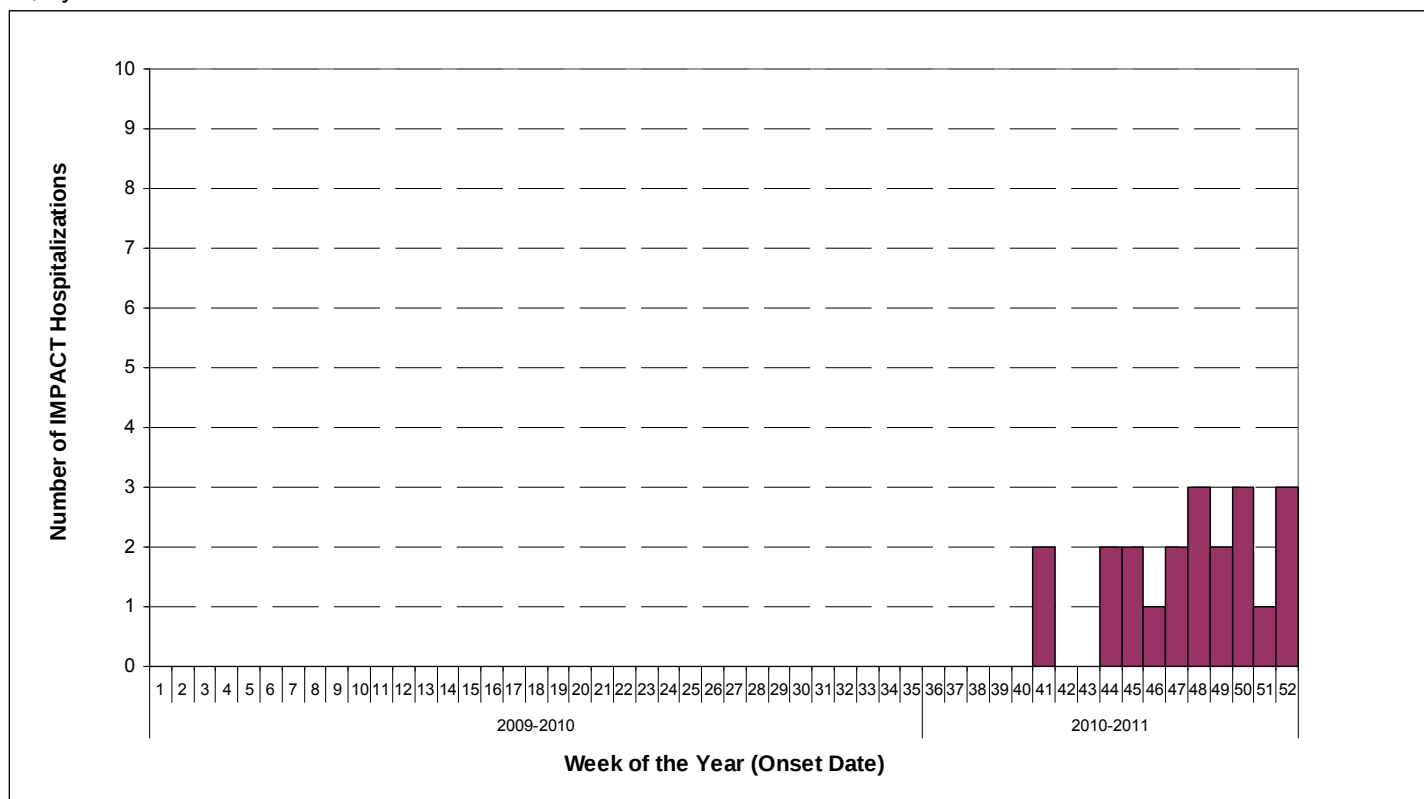
Source: Public Health Agency of Canada

Sentinel physician information is reported to the Public Health Agency of Canada; 49 sentinels reported in week 52.

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 52, 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
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.