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Ontario Influenza Bulletin | 2011-2012

SURVEILLANCE WEEK 50 (December 11, 2011 – December 17, 2011)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from December 11, 2011 to December 17, 2011 (week 50). **All data are for week 50** and data extraction and analysis for this issue of the Bulletin occurred on December 21, 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 and Other Respiratory Virus Activity in Ontario

Measure of Activity	Assessment of measure compared to previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory Confirmed Influenza Cases	Similar	Six (6) new influenza cases were reported* in week 50, which is more than week 49 (3). The percent positivity of laboratory tests for influenza in Ontario was 0.7% for week 50, which was similar to week 49 (0.2%) (Figure 3).
Respiratory virus activity	RSV activity is higher	Among circulating respiratory viruses, RSV had the highest percent positivity at 13.52% (Table 2). This is an increase from week 49 when it had a percent positivity of 10.14%.
Institutional Respiratory Infection Outbreaks	Similar	No new institutional influenza outbreaks were reported, however there were six new institutional respiratory infection outbreaks reported for week 50, including one parainfluenza outbreak.
Influenza Activity Levels Reported by Health Units	Higher	Middlesex-London, Toronto, Waterloo and York Region health units reported 'sporadic' level influenza activity, while the remaining health units either reported no activity or did not report for week 50. Influenza activity levels were higher than week 49.
ILI Consultation Rate reported by Sentinels	Higher	The provincial ILI consultation rate increased from 21.85/1,000 patient visits in week 49 to 32.51/1,000 patient visits in week 50. This rate is higher compared to the average rate for week 50 from previous years.
OVERALL ASSESSMENT FOR VIRUS ACTIVITY	Influenza activity in Ontario was *slightly higher* compared to the previous week.	Overall, the indicators show that influenza activity was *slightly higher* during week 50 compared to week 49.
Measure of Severity for Influenza		
Hospitalizations Among Lab Confirmed Cases of Influenza	Higher	There were two hospitalized cases reported* from December 11 to December 17, which is more than the number (0) reported from December 4 to December 10.
Deaths Among Lab Confirmed Cases of Influenza	No Change	No deaths were reported* from December 11 to December 17, which is the same as the number reported from December 4 to December 10.

*This is the number of cases by **reported** date from iPHIS and needs to be interpreted with caution as there is a lag between the onset of illness, hospital admission or death and when this information is reported to public health.

Summary of current and season to date influenza activity

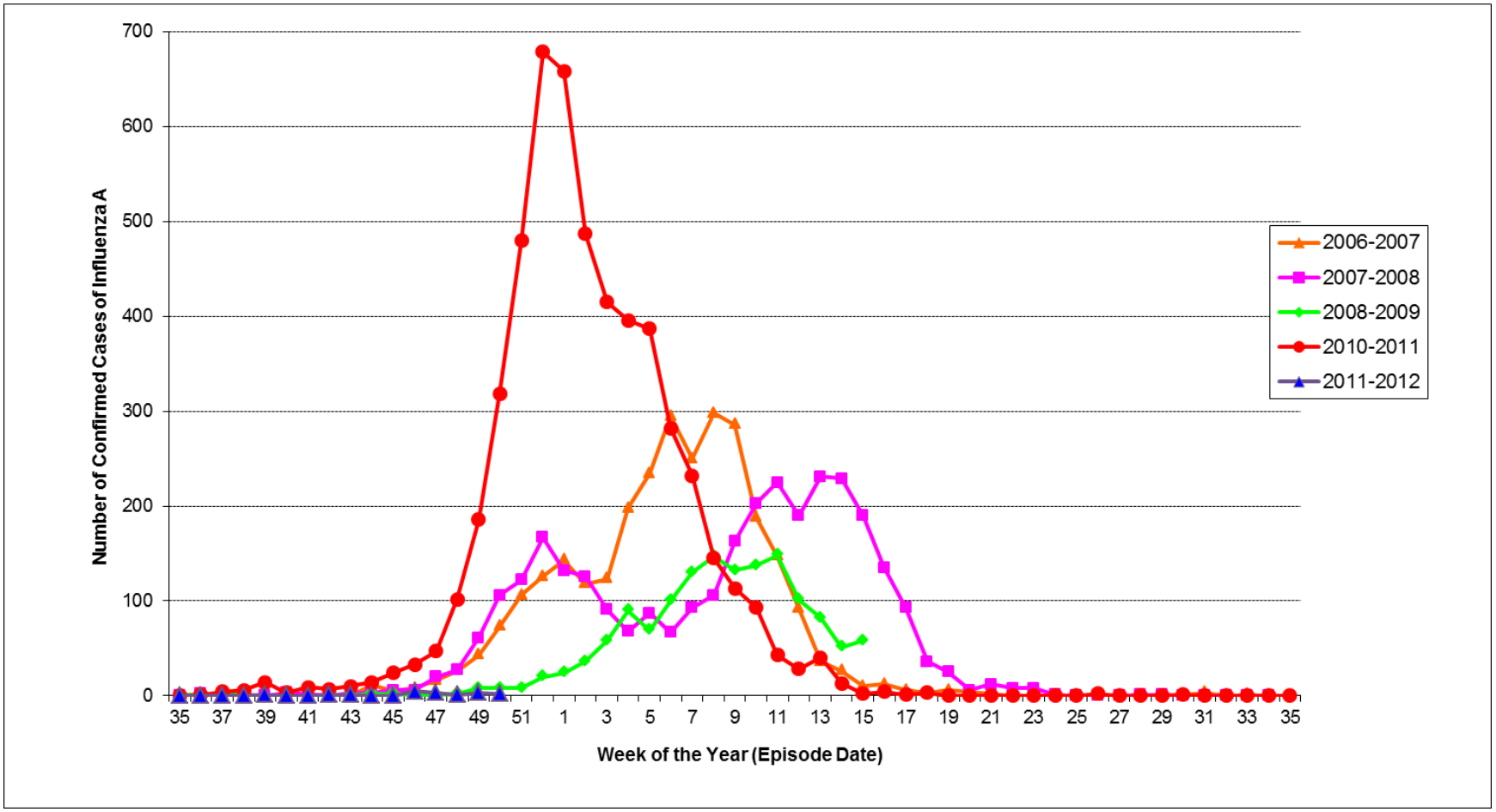
- There has been very little influenza activity for the 2011-2012 season to date and activity has been stable recently:
    - Influenza activity continues to be seen at low levels. A total of 21 influenza cases have been reported for the 2011-2012 surveillance season to date. Six cases of influenza were identified from Middlesex-London (1), Toronto (3), Waterloo (1) and York Region (1) health units in week 50. Prior to week 50, only 15 cases were reported since September 1. Cases have been identified in all regions of the province (Table 1). Over one third of the cases reported to date were subtyped as influenza A/H3 (8/21).
    - Compared to the same period in the 2010-2011 season, fewer cases and fewer influenza outbreaks were reported this season from September 1 to December 17.
- While the majority of ILI activity in Ontario from September 1 to December 17, 2011 can be attributed to entero/rhinovirus, currently entero/rhinovirus activity is quite low:
    - The majority of outbreaks (54.4%) this season had entero/rhinovirus identified as the causative organism (Table 3).
    - Entero/rhinovirus has had the highest percent positivity among laboratory tests of respiratory samples for the season to date (Table 2), but entero/rhinovirus activity in week 50 remained low (3.17% positivity), decreasing slightly in comparison to week 49 (4.32% positivity).
    - In week 50 the highest percent positivity among laboratory tests of respiratory samples was for RSV at 13.52% compared to 10.14% in week 49 and 5.52% in week 48.

Updates to the Ontario Influenza Bulletin

The Ontario Influenza Bulletin will be on vacation on December 30th. This week's report will be the last for the year. A Bulletin covering weeks 51 and 52 (December 18 – December 31) will be published on January 6, 2012. Health units are advised to report data for weeks 51 & 52 on January 3, 2012 (refer to the link below for the Influenza Surveillance Weeks for 2011-2012). Happy holidays and best wishes for a happy and healthy 2012!

Information on surveillance weeks for the 2011-2012 season, ILI definitions, and links to surveillance reports from other jurisdictions can now be found at:
http://www.oahpp.ca/resources/flubulletin.html

Figure 1: Confirmed cases of influenza A in Ontario by episode date, reported from Sep. 1, 2006 to Dec. 17, 2011†

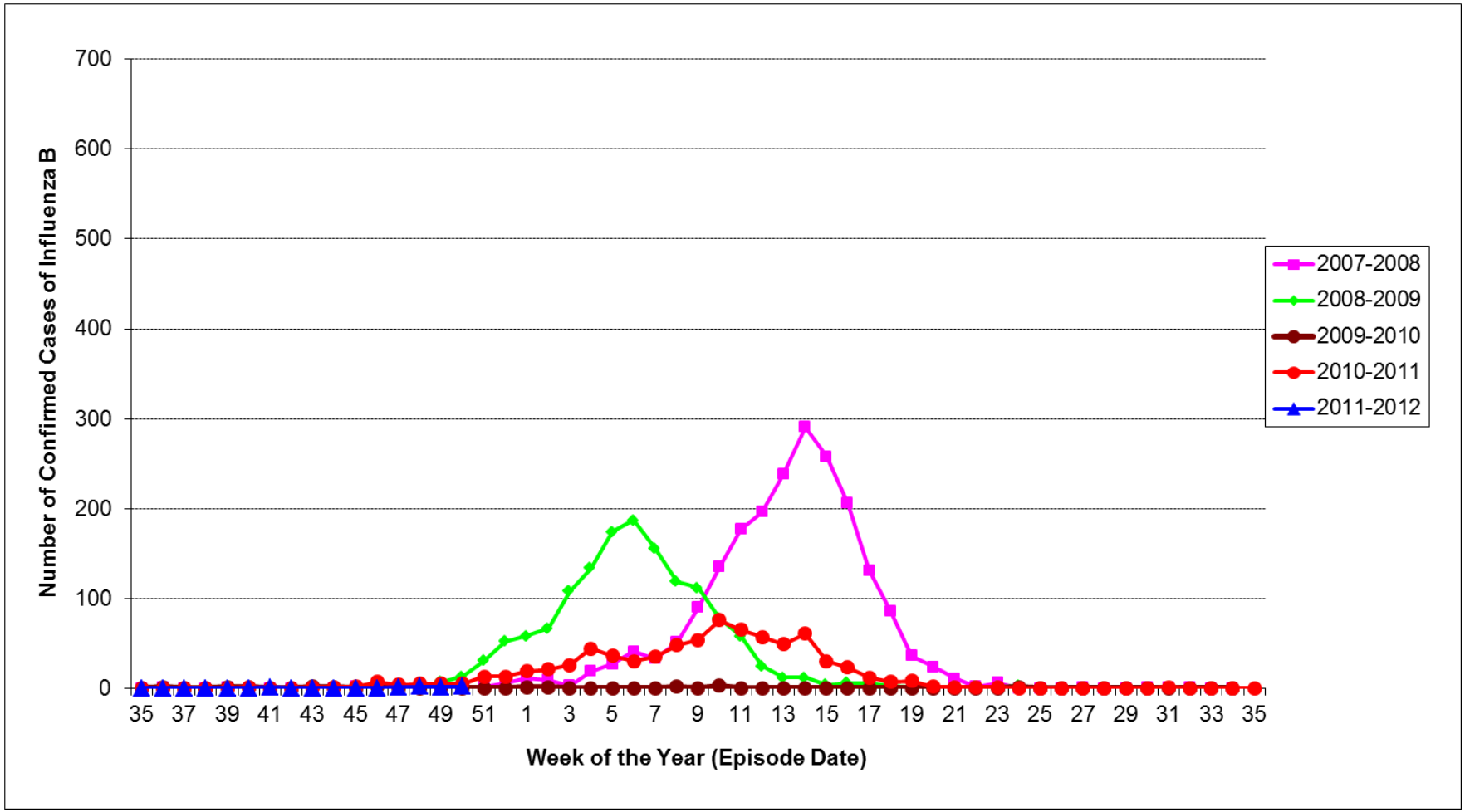


SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2011/12/22].

† 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 after week 14 in the 2008-09 season were excluded because seasonal influenza cases from this period may have been detected due to heightened surveillance for all influenza-like illness, therefore this period is not comparable to a regular influenza season. Additionally, all cases from the 2009-10 influenza season were excluded from this graph due to its incomparability to a regular influenza season as a result of the influenza A(H1N1)pdm09 pandemic.
Note: Week 53 of the 2008-09 season has been removed for continuity in displaying trends.
Note: Interpret tail of 2011-2012 line with caution due to reporting lags.

Figure 2: Confirmed cases of influenza B in Ontario by episode date reported from Sep. 1, 2007 to Dec. 17, 2011†



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2011/12/22].

† 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: Interpret tail of 2011-2012 line with caution due to reporting lags.

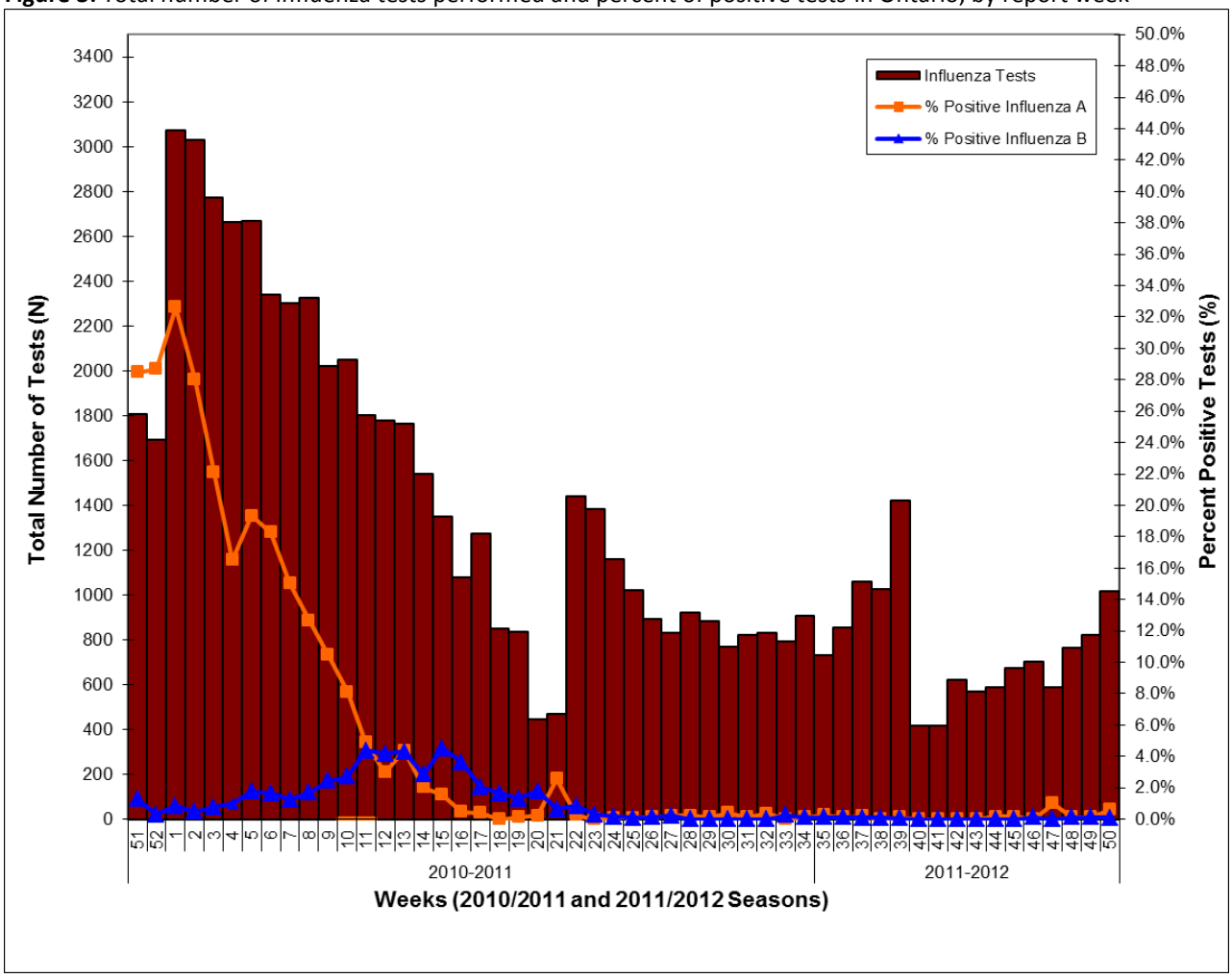
Table 1: Confirmed cases with a reported date during week 50 and cumulative cases (in brackets) of influenza by health unit and health region since September 1, 2011

Region	Health Unit	Influenza A				Influenza A & B	Influenza B	TOTAL
		(H1N1) pdm09	No Subtype/Not Subtyped	Other*	H3			
North West	Northwestern	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Thunder Bay District	0 (0)	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)	0 (1)
	TOTAL NORTH WEST	**0 (0)**	**0 (0)**	**0 (0)**	**0 (1)**	**0 (0)**	**0 (0)**	**0 (1)**
North East	Algoma	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	North Bay Parry Sound District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)	0 (1)
	Porcupine	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Sudbury & District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Timiskaming	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	TOTAL NORTH EAST	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**	**0 (1)**	**0 (1)**
Eastern	City of Ottawa	0 (0)	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)	0 (1)
	Eastern Ontario	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Hastings & Prince Edward Counties	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Kingston, Frontenac, Lennox & Addington	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Leeds, Grenville And Lanark District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Renfrew County And District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	TOTAL EASTERN	**0 (0)**	**0 (0)**	**0 (0)**	**0 (1)**	**0 (0)**	**0 (0)**	**0 (1)**
Central East	Durham Region	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Haliburton, Kawartha, Pine Ridge	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Peel Region	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (2)	0 (3)
	Peterborough County-City	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Simcoe Muskoka District	0 (0)	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)	0 (1)
	York Region	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)
	TOTAL CENTRAL EAST	**1 (2)**	**0 (0)**	**0 (0)**	**0 (1)**	**0 (0)**	**0 (2)**	**1 (5)**
Toronto	Toronto	1 (3)	1 (1)	0 (0)	0 (1)	0 (0)	1 (2)	3 (7)
	TOTAL TORONTO	1 (3)	1 (1)	0 (0)	0 (1)	0 (0)	1 (2)	3 (7)
South West	Chatham-Kent	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Elgin-St. Thomas	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Grey Bruce	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Huron County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Lambton County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Middlesex-London	0 (0)	0 (0)	0 (0)	1 (3)	0 (0)	0 (0)	1 (3)
	Oxford County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Perth District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Windsor-Essex County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	TOTAL SOUTHWEST	**0 (0)**	**0 (0)**	**0 (0)**	**1 (3)**	**0 (0)**	**0 (0)**	**1 (3)**
Central West	Brant County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	City Of Hamilton	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)
	Haldimand-Norfolk	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Halton Region	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Niagara Region	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Waterloo Region	0 (0)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)
	Wellington-Dufferin-Guelph	0 (0)	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)	0 (1)
	TOTAL CENTRAL WEST	0 (0)	0 (2)	0 (0)	0 (1)	0 (0)	0 (0)	0 (3)
	TOTAL ONTARIO	**2 (5)**	**2 (3)**	**0 (0)**	**1 (8)**	**0 (0)**	**1 (5)**	**6 (21)**

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2011/12/23].

*includes indeterminate, untypeable and other subtypes

Figure 3: Total number of influenza tests performed and percent of positive tests in Ontario, by report week*



Source: Public Health Agency of Canada. These data have been obtained from the Respiratory Virus Detection tables of the Public Health Agency of Canada from 16 labs in Ontario and do not include data from late reports to PHAC for the current season: Week 50, 2011. Please note that the last version received from PHAC as of 2:30PM on December 21, 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 2. Number of respiratory specimens tested by all methods for influenza and other respiratory viruses and percent positivity, week 50

Detected viruses	Number and percent positive specimens		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza A (all)	6 (0.59)	17 (0.19)	1015	8980
Influenza B	1 (0.10)	4 (0.04)	1015	8980
Parainfluenza virus	24 (3.46)	447 (6.00)	693	7449
Adenovirus	16 (2.31)	130 (1.75)	693	7449
Respiratory Syncytial Virus	99 (13.52)	298 (3.93)	732	7578
Entero/rhinovirus	22 (3.17)	598 (9.91)	693	6036
Human metapneumovirus	2 (0.60)	8 (0.20)	332	3947
Coronavirus	0 (0)	18 (0.71)	255	2534

Source: CIRID, Public Health Agency of Canada. These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada from 16 labs in Ontario and do not include data from late reports to PHAC for the current season: Week 50, 2011. Please note that the last version received from PHAC as of 2:00PM on December 21, 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 3: Institutional respiratory infection outbreaks in Ontario: new outbreaks* in week 50 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)	1	16.7
RSV	0	0.0
Combined Outbreaks†	0	0.0
Other organisms α	0	0.0
Entero/rhinovirus	0	0.0
No organism identified	5	83.3
TOTAL	**6**	***100.0***
Total Respiratory Infection Outbreaks of the Season to date**	**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)	15	9.4
RSV	2	1.3
Combined Outbreaks†	7	4.4
Other organisms α	0	0.0
Entero/rhinovirus	87	54.4
No organism identified	49	30.6
TOTAL	***160***	***100.0***
Types of Institutions – All Outbreaks **	**N**	**% (of outbreaks)**
Long-Term Care Homes	104	65.0
Hospitals	10	6.3
Retirement Homes	19	11.9
Other	1	0.6
Not Reported	26	16.3
TOTAL	***160***	***100.0***

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2011/12/21]

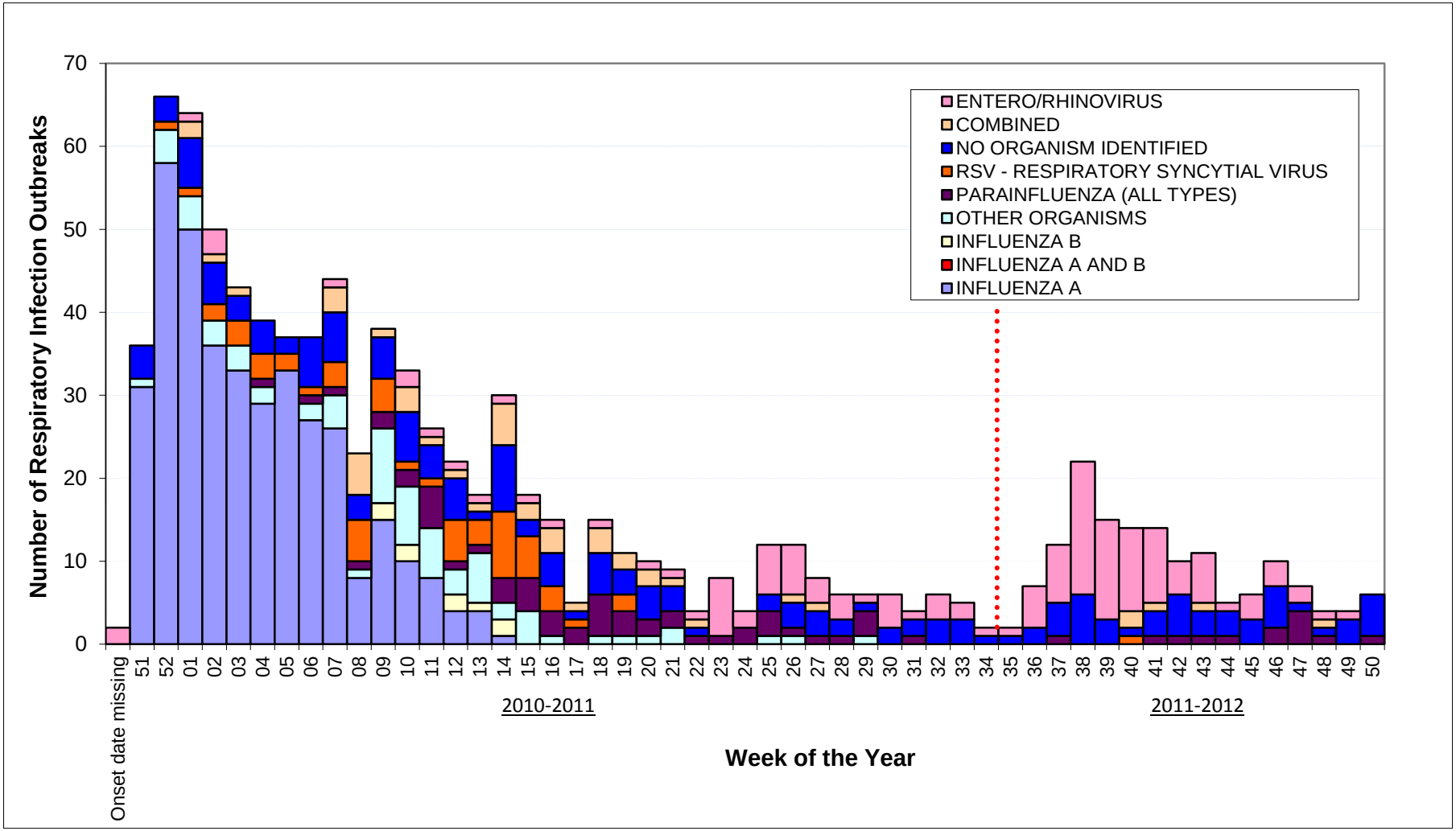
* New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded through iPHIS in the current surveillance period; i.e. December 11, 2011 – December 17, 2011

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to Week 50.

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

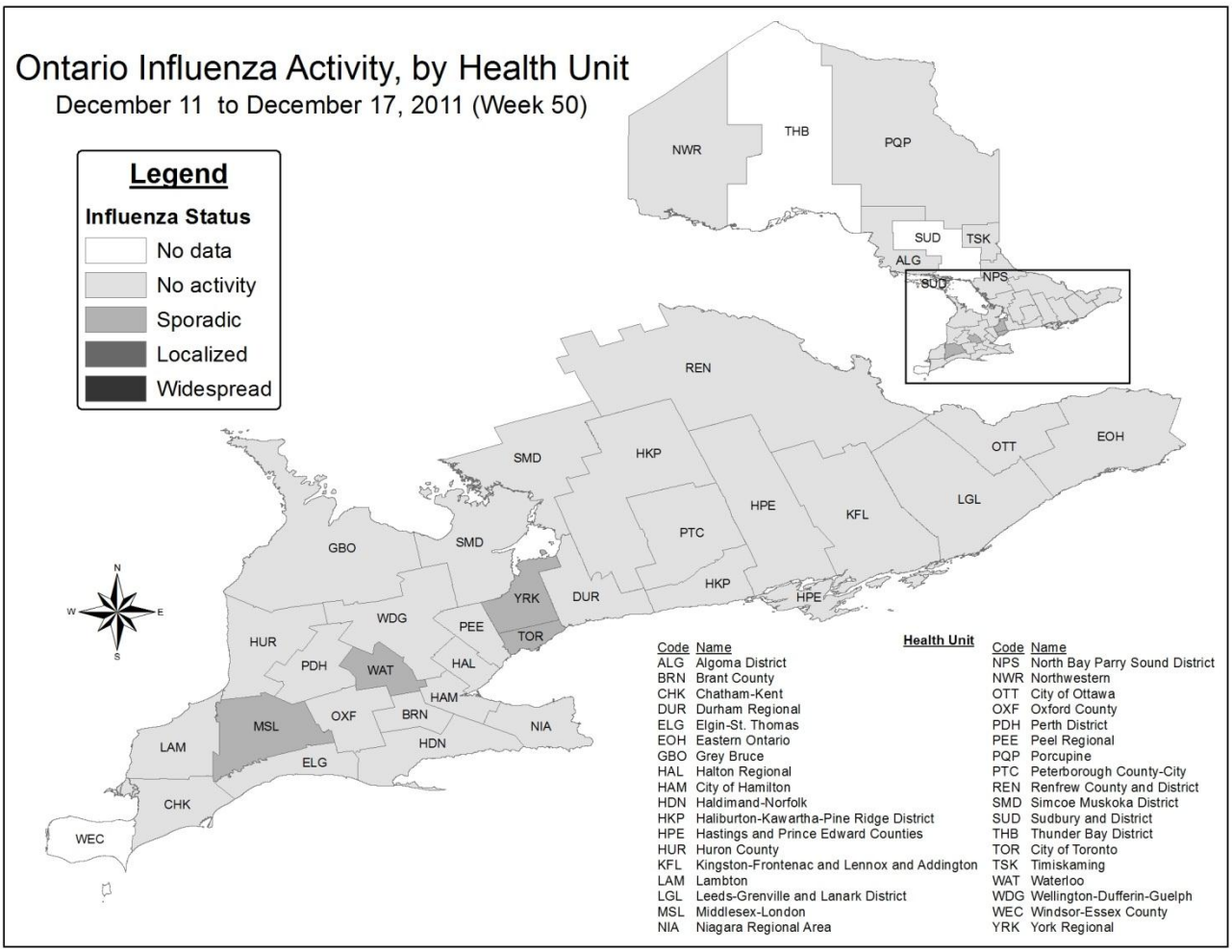
α Other organisms include outbreaks involving other aetiological agents, such as human metapneumovirus, adenovirus and coronavirus.

Figure 4: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including week 50 of the 2011-2012 season by causative organism



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2011/12/21]

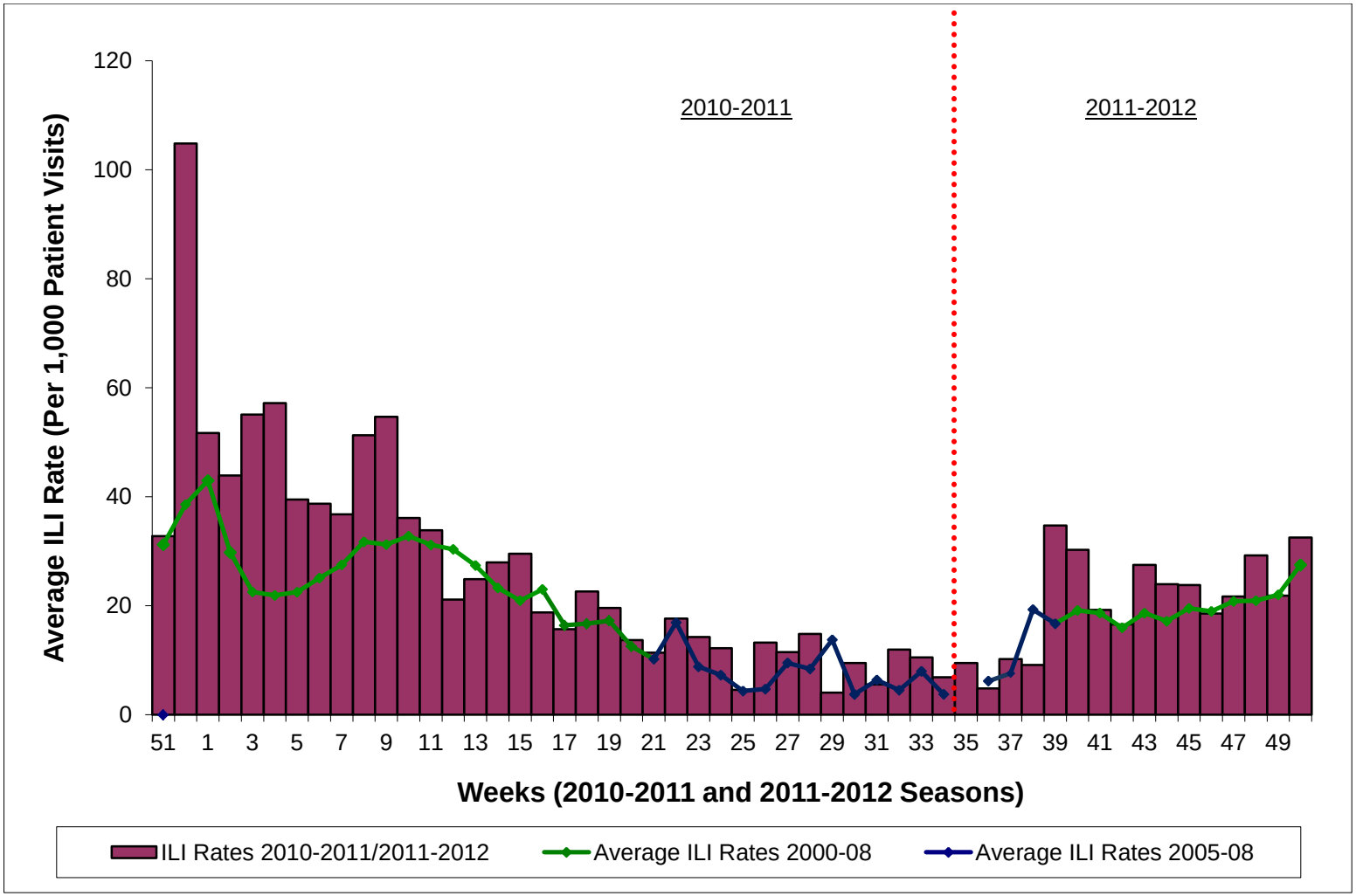
Figure 5: Influenza activity* levels in Ontario by health unit for week 50, 2011



Source: PHO [Provincial Influenza Activity Report (Appendix C) Database]

* Influenza activity levels are assigned by local public health units and reported to PHO 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 respiratory infection outbreaks. Please refer to detailed definitions for the 2011-2012 season.

Figure 6: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinels* in Ontario up to week 50 of the 2011-2012 surveillance season, by report week, compared to Ontario average† (1999/2000 to 2007/08 seasons).

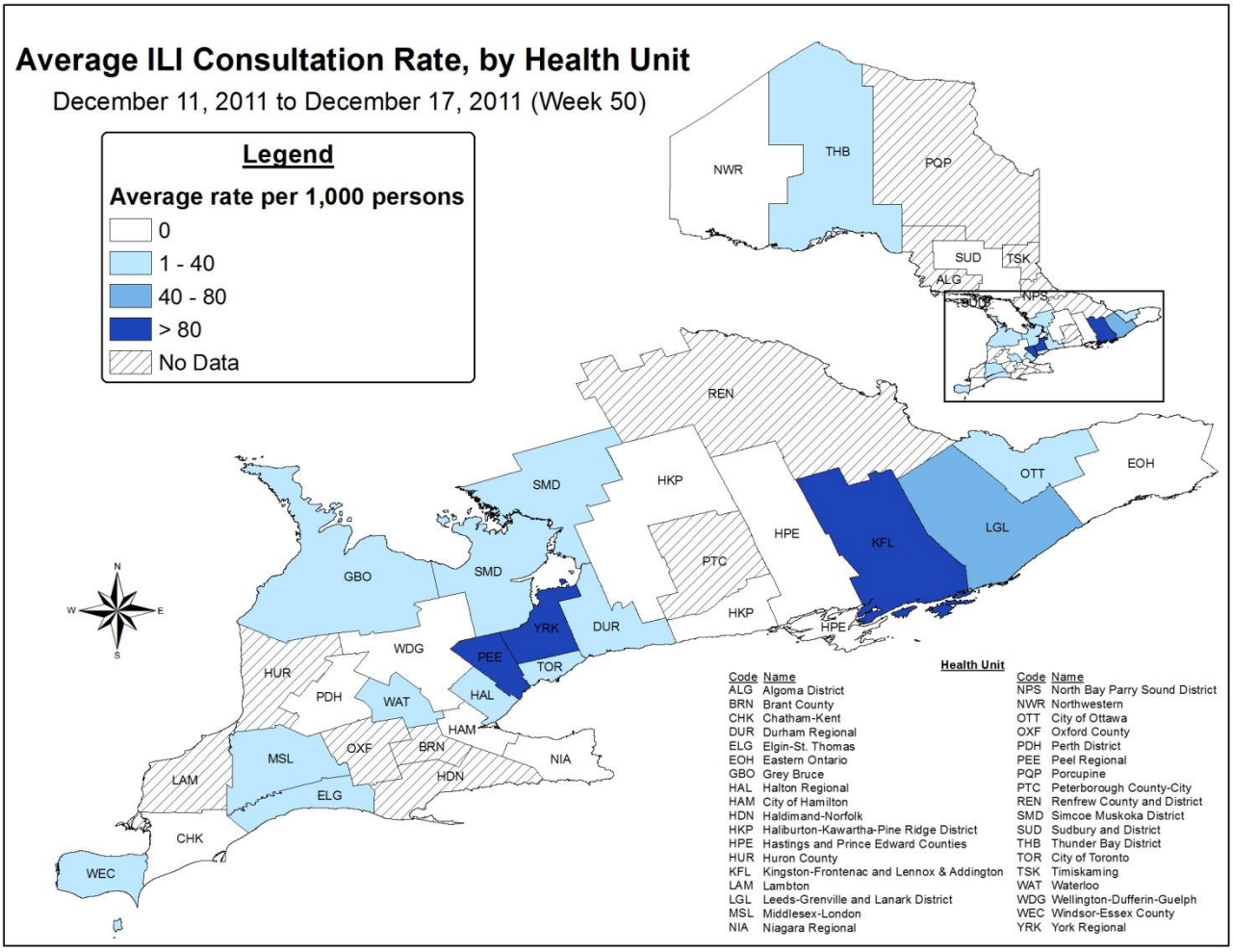


Source: Public Health Agency of Canada

* Sentinel information is reported to Public Health Agency of Canada, 87 sentinels reported in Week 50. The large increase in week 52 of last season may be due to a combination of factors including: a true increase in influenza activity, reduced office hours, fewer routine visits, and significantly fewer sentinels reporting compared to normal (only 49 sentinels reported in the last week of December, 2010, compared to at least 80 physicians normally reporting during any given week in the influenza season).

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

Figure 7: Average influenza-like illness consultation rate (per 1,000 patient visits) by health unit as reported by sentinels * in Ontario, for week 50



Source: Public Health Agency of Canada
* Sentinels report ILI and patient data to the Public Health Agency of Canada; 87 sentinels reported in week 50, of which 83 were matched to a health unit and represented in the above map.
Note: The small numbers of sentinels reporting at the local level can make the ILI rates unstable. Please interpret these data accordingly.

Table 4: Average influenza-like illness consultation rate (per 1,000 patient visits) by age group as reported by sentinels*in Ontario, for Week 50.

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	9	14	41	10	0	74
ILI Consultation Rate (per 1,000 patient visits)	52.63	53.03	30.55	20.04	0.00	32.51

Source: Public Health Agency of Canada
* Sentinel information is reported to the Public Health Agency of Canada; 87 sentinels reported in week 50.

APPENDIX - I

Table 1: NML strain characterization, influenza isolates in Ontario and Canada, September 1, 2011 to December 22, 2011.

	Ontario	Canada
Influenza A (H3N2) A/Perth/16/2009-like	1	19
Influenza A(H1N1)pdm09 A/California/07/09-like	3	5
Influenza B B/Brisbane/60/2008-like	1	4
Influenza B B/Wisconsin/01/2010-like	2	6

Source: Influenza and Respiratory Viruses Section, National Microbiology Laboratory (NML)
Please note that the last version received from PHAC as of 10:00AM on December 22, 2011 was used.

Table 2: Amantadine, Oseltamivir and Zanamivir susceptibility assays completed on Canadian influenza isolates by NML, September 1, 2011 to December 21, 2011.

	Amantadine				Oseltamivir				Zanamivir			
Influenza strains	Ontario		Canada		Ontario		Canada		Ontario		Canada	
	R	S	R	S	R	S	R	S	R	S	R	S
Influenza A (H3N2)	5	0	24	0	0	1	0	19	0	1	0	19
Influenza A(H1N1)pdm09	0	0	2	0	0	3	0	5	0	3	0	5
Influenza B	NA	NA	NA	NA	0	3	0	10	0	3	0	10

(R-Resistant, S- Susceptible, NA-Not applicable)
Source: Influenza and Respiratory Viruses Section, National Microbiology Laboratory (NML)
Please note that the last version received from PHAC as of 10:00AM on December 22, 2011 was used.