



Ontario Influenza Bulletin | 2011-2012

SURVEILLANCE WEEKS 51 & 52 (December 18, 2011 – December 31, 2011)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from December 18, 2011 to December 31, 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 4, 2012 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

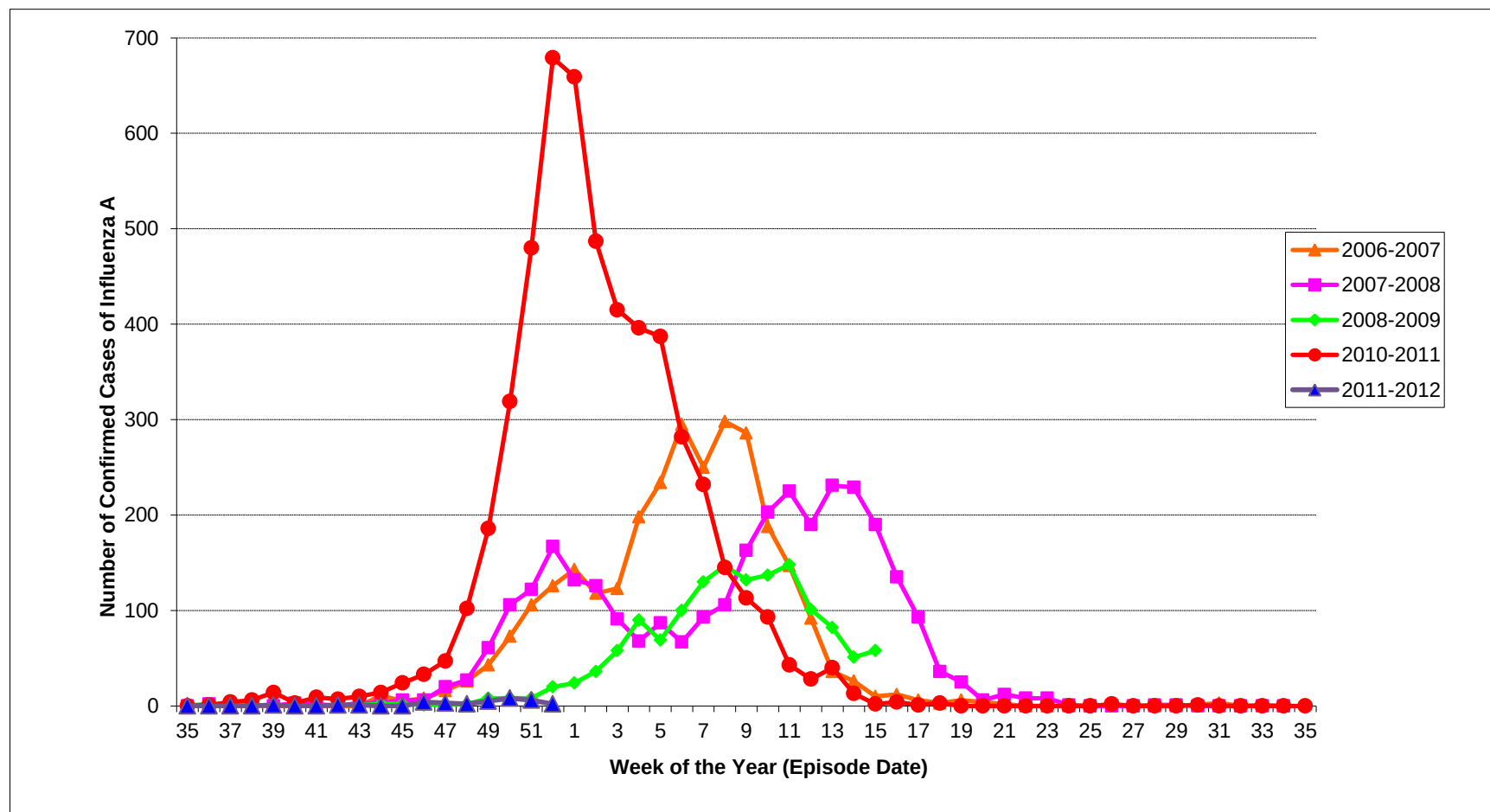
Measure of Activity	Assessment of measure compared to previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory Confirmed Influenza Cases	Slightly higher	Fifteen (15) new influenza cases were reported* in week 52, which is more than week 50 (6) and week 51 (11). The percent positivity of laboratory tests for influenza in Ontario was 0.9% for week 52, which was slightly higher than week 50 (0.7%) (Figure 3).
Respiratory virus activity	RSV activity is higher	Among circulating respiratory viruses, RSV had the highest percent positivity at 19.7% (Table 2). This is an increase from week 50 when it had a percent positivity of 13.52%.
Institutional Respiratory Infection Outbreaks	Similar	No new institutional influenza outbreaks were reported, however there were twelve new institutional respiratory infection outbreaks reported for weeks 51 & 52, including one parainfluenza outbreak.
Influenza Activity Levels Reported by Health Units	Higher	Halton Region, Hamilton, Niagara Region, Ottawa, Peel Region, Toronto and Wellington-Dufferin-Guelph health units reported 'sporadic' level influenza activity, while the remaining health units either reported no activity or did not report for week 52. Influenza activity levels were higher than week 51.
ILI Consultation Rate reported by Sentinels	Slightly lower	The provincial ILI consultation rate decreased from 32.51/1,000 patient visits in week 50 to 30.53/1,000 patient visits in week 52. This rate is lower compared to the average rate for week 52 from previous years.
OVERALL ASSESSMENT FOR VIRUS ACTIVITY	Influenza activity in Ontario was <i>slightly higher</i> compared to the previous week.	Overall, the indicators show that influenza activity was <i>slightly higher</i> during week 52 compared to week 50.
Measure of Severity for Influenza		
Hospitalizations Among Lab Confirmed Cases of Influenza	Higher	There were six hospitalized cases reported* from December 25 to December 31, which is more than the number (5) reported from December 18 to December 24.
Deaths Among Lab Confirmed Cases of Influenza	No Change	No deaths were reported* from December 25 to December 31, which is lower than the number (1) reported from December 18 to December 24.

*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

- Influenza activity for the 2011-2012 season has been lower than in previous years to date; however, activity has been increasing recently:
 - Influenza activity continued to increase slowly over the last three weeks. A total of 47 influenza cases have been reported for the 2011-2012 surveillance season to date. Fifteen cases of influenza were identified in week 52, they were from Halton Region (1), Hamilton (1), Niagara Region (1), Ottawa (1), Peel Region (2), Toronto (8) and Wellington-Dufferin-Guelph (1) health units. Eleven cases were reported in week 51. Cases have been identified in all regions of the province (Table 1).
 - Approximately two-thirds of cases reported to date were subtyped as influenza A(H1N1)pdm09 and influenza B, with each subtype accounting for 14 cases. In recent weeks most influenza A cases have been identified as (H1N1)pdm09, whereas earlier in the season most were identified as H3N2.
 - 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 31.
- The cause(s) of ILI in Ontario from September 1 to December 31, 2011 has changed as the season progressed:
 - The majority of outbreaks (50.6%) this season had enterovirus identified as the causative organism (Table 3). However, all of the rhinovirus outbreaks occurred prior to week 50.
 - Enterovirus has had the highest percent positivity among laboratory tests of respiratory samples for the season to date (Table 2), but enterovirus activity has declined since week 49. In week 52, it remained low (2.95% positivity), decreasing slightly in comparison to week 50 (3.17% positivity).
 - In week 52 the highest percent positivity among laboratory tests of respiratory samples was for RSV at 19.7% compared to 13.52% in week 50 and 10.14% in week 49.

Figure 1: Confirmed cases of influenza A in Ontario by episode date, reported from Sep. 1, 2006 to Dec. 31, 2011[†]



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/01/05].

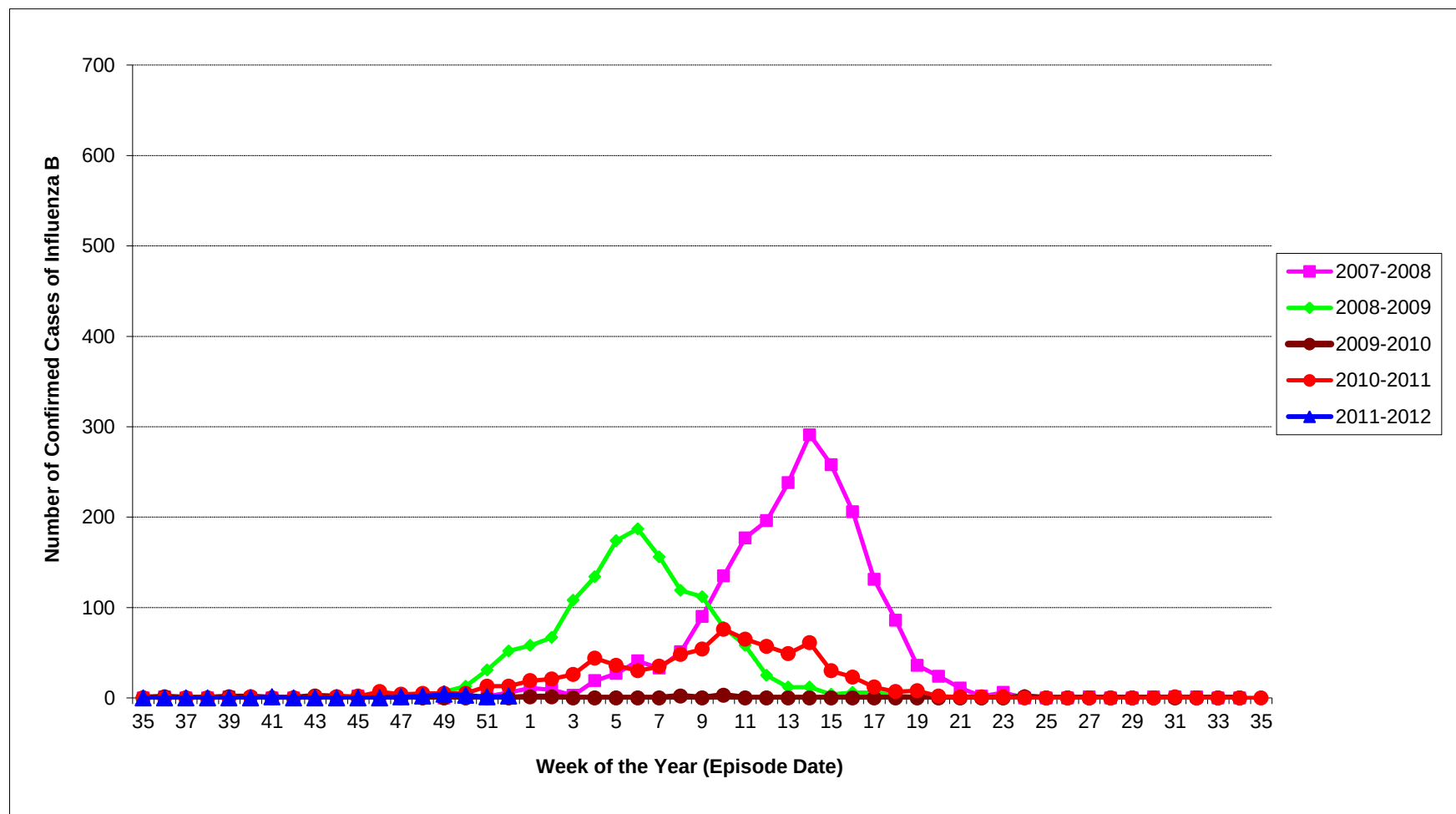
[†] Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

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. 31, 2011[†]



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/01/05].

[†] 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.

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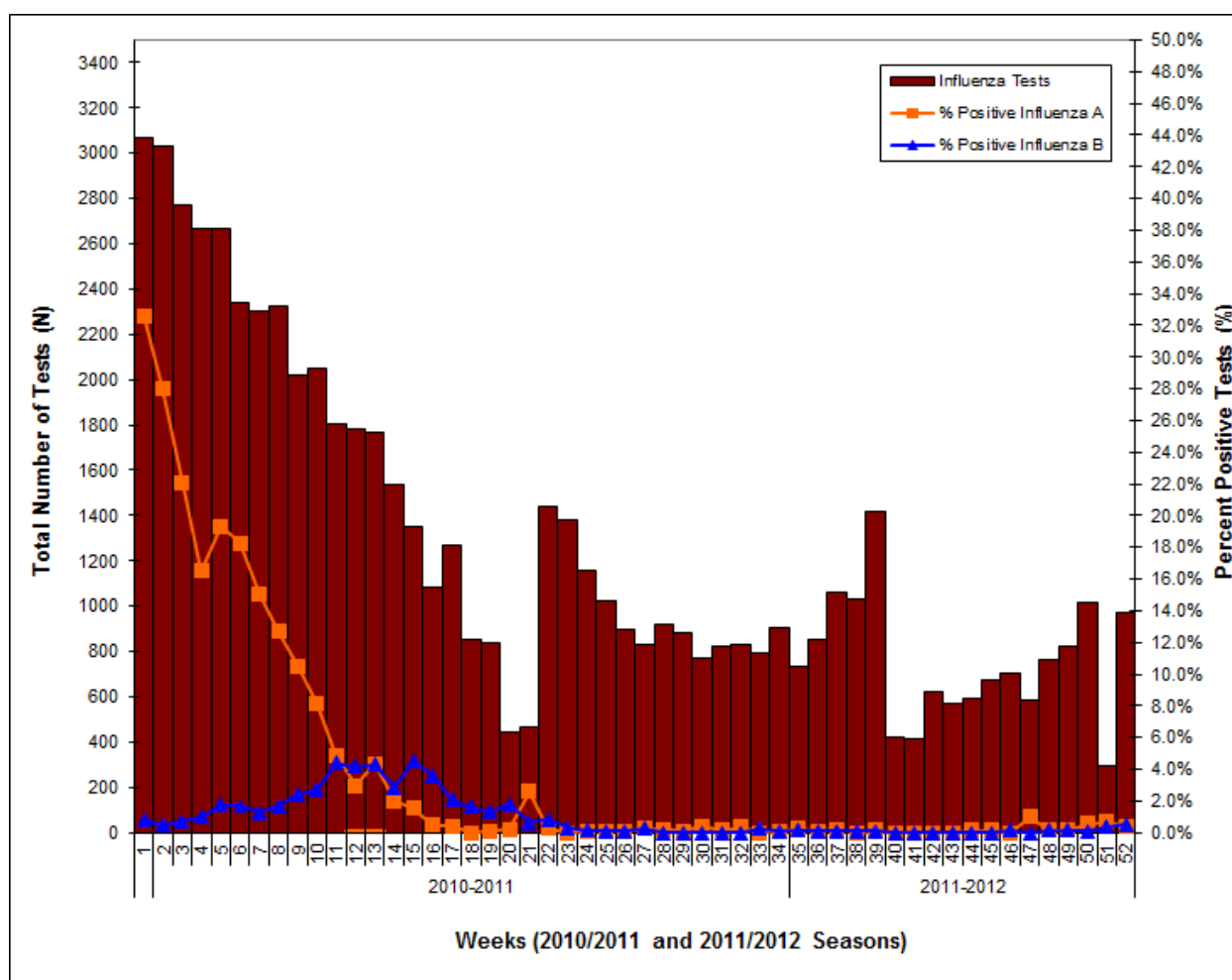
Table 1: Confirmed cases with a reported date during week 52 and cumulative cases (in brackets) of influenza by health unit and health region since September 1, 2011

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)	1 (1)	0 (0)	0 (1)	0 (0)	0 (0)	1 (2)
	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)	1 (1)	0 (0)	0 (1)	0 (0)	0 (0)	1 (2)
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 (4)	0 (1)	0 (0)	0 (0)	0 (0)	2 (6)	2 (11)
	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	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	0 (1)
	TOTAL CENTRAL EAST	0 (4)	0 (1)	0 (1)	0 (1)	0 (0)	2 (6)	2 (13)
Toronto	Toronto	5 (9)	0 (2)	0 (0)	0 (1)	0 (0)	3 (6)	8 (18)
	TOTAL TORONTO	5 (9)	0 (2)	0 (0)	0 (1)	0 (0)	3 (6)	8 (18)
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)	0 (3)	0 (0)	0 (0)	0 (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)	0 (3)	0 (0)	0 (0)	0 (3)
Central West	Brant County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	City Of Hamilton	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)	0 (1)	1 (3)
	Haldimand-Norfolk	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Halton Region	1 (1)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	1 (2)
	Niagara Region	0 (0)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)
	Waterloo Region	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)
	Wellington-Dufferin-Guelph	0 (0)	1 (1)	0 (0)	0 (1)	0 (0)	0 (0)	1 (2)
	TOTAL CENTRAL WEST	1 (1)	3 (6)	0 (0)	0 (1)	0 (0)	0 (1)	4 (9)
	TOTAL ONTARIO	6 (14)	4 (10)	0 (1)	0 (8)	0 (0)	5 (14)	15 (47)

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/01/05].

*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 52, 2011. Please note that the last version received from PHAC as of 2:30PM on January 4, 2012 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/>

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Table 2. Number of respiratory specimens tested by all methods for influenza and other respiratory viruses and percent positivity, week 52

Detected viruses	Number and percent positive specimens		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza A (all)	4 (0.41)	32 (0.29)	968	10971
Influenza B	5 (0.52)	16 (0.15)	968	10971
Parainfluenza virus	16 (1.76)	497 (5.36)	909	9269
Adenovirus	14 (1.54)	168 (1.81)	909	9269
Respiratory Syncytial Virus	181 (19.7)	622 (6.61)	919	9408
Enterovirus	22 (2.95)	652 (8.47)	747	7694
Human metapneumovirus	5 (1.37)	16 (0.34)	364	4700
Coronavirus	7 (5.88)	29 (0.93)	119	3131

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 52, 2011. Please note that the last version received from PHAC as of 2:00PM on January 4, 2012 was used.

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Table 3: Institutional respiratory infection outbreaks in Ontario: new outbreaks* in week 52 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	8.3
RSV	1	8.3
Combined Outbreaks [†]	0	0.0
Other organisms ^α	1	8.3
Enterovirus/rhinovirus	0	0.0
No organism identified	9	75.0
TOTAL	12	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)	19	10.7
RSV	3	1.7
Combined Outbreaks [†]	8	4.5
Other organisms ^α	1	0.6
Enterovirus/rhinovirus	90	50.6
No organism identified	57	32.0
TOTAL	178	100.0
Types of Institutions – All Outbreaks **	N	% (of outbreaks)
Long-Term Care Homes	115	64.6
Hospitals	10	5.6
Retirement Homes	21	11.8
Other	1	0.6
Not Reported	31	17.4
TOTAL	178	100.0

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/01/04]

* 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 18, 2011 – December 31, 2011

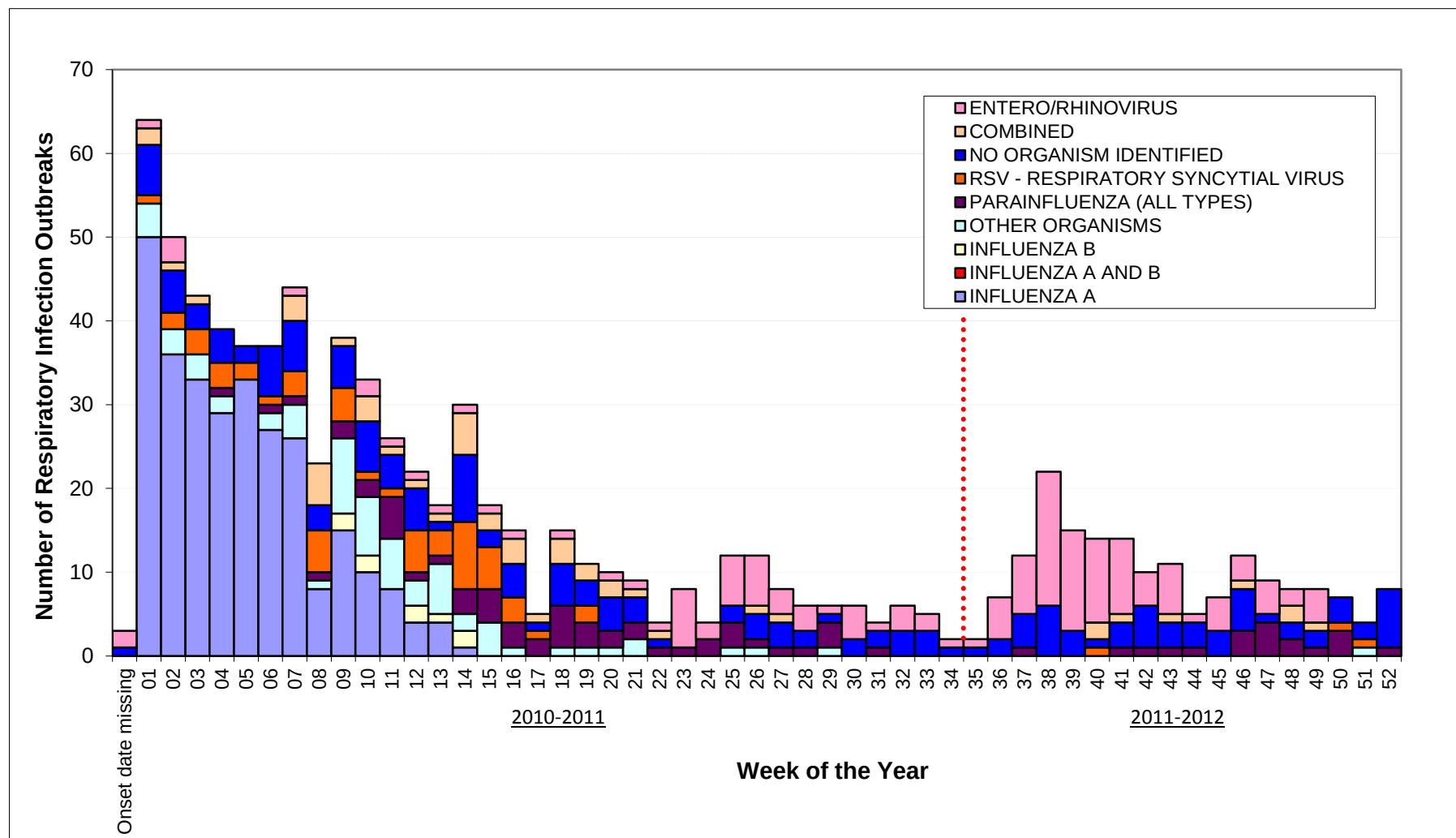
** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to Week 52.

[†] 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.

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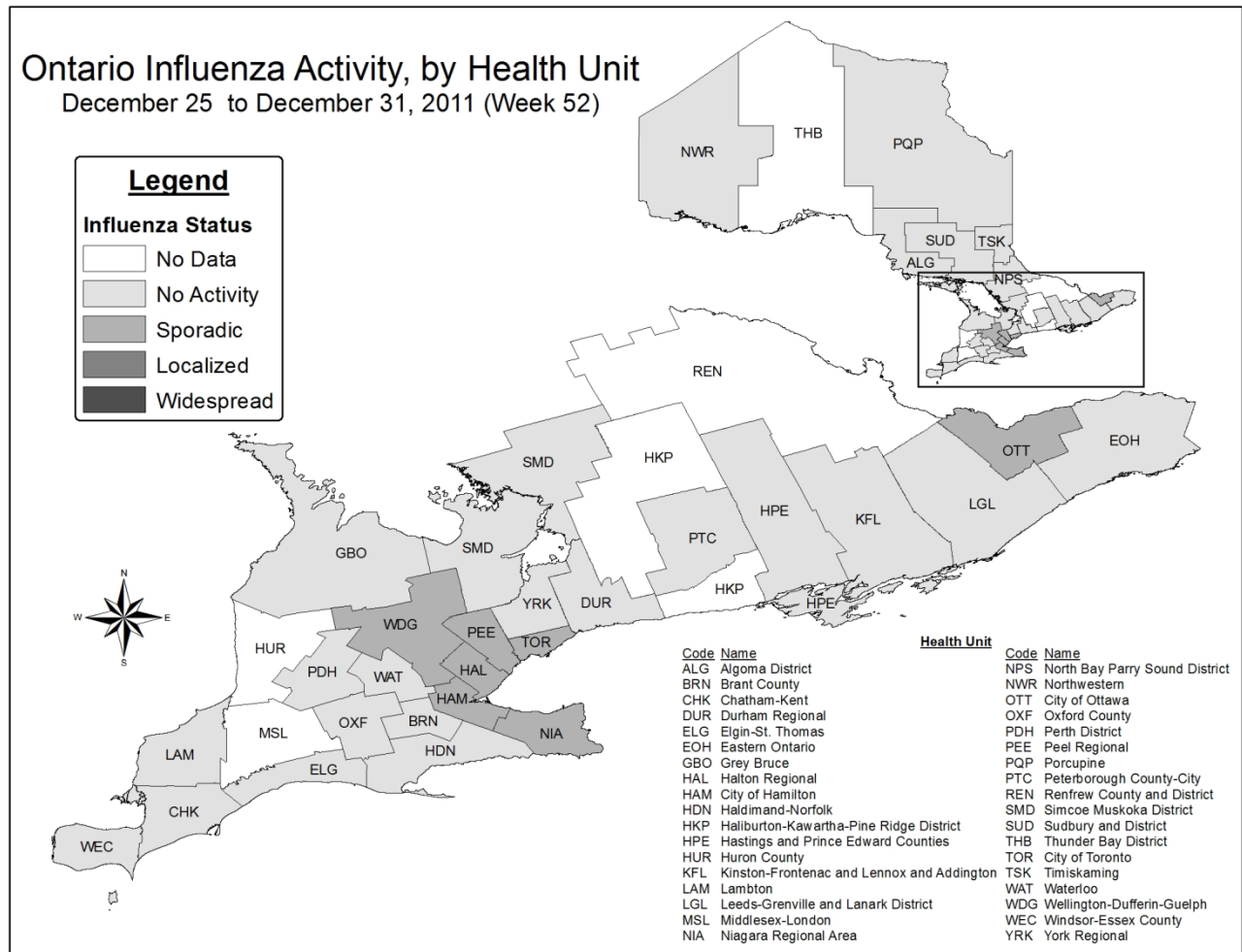
Figure 4: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including week 52 of the 2011-2012 season by causative organism



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/01/04]

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Figure 5: Influenza activity* levels in Ontario by health unit for week 52, 2011

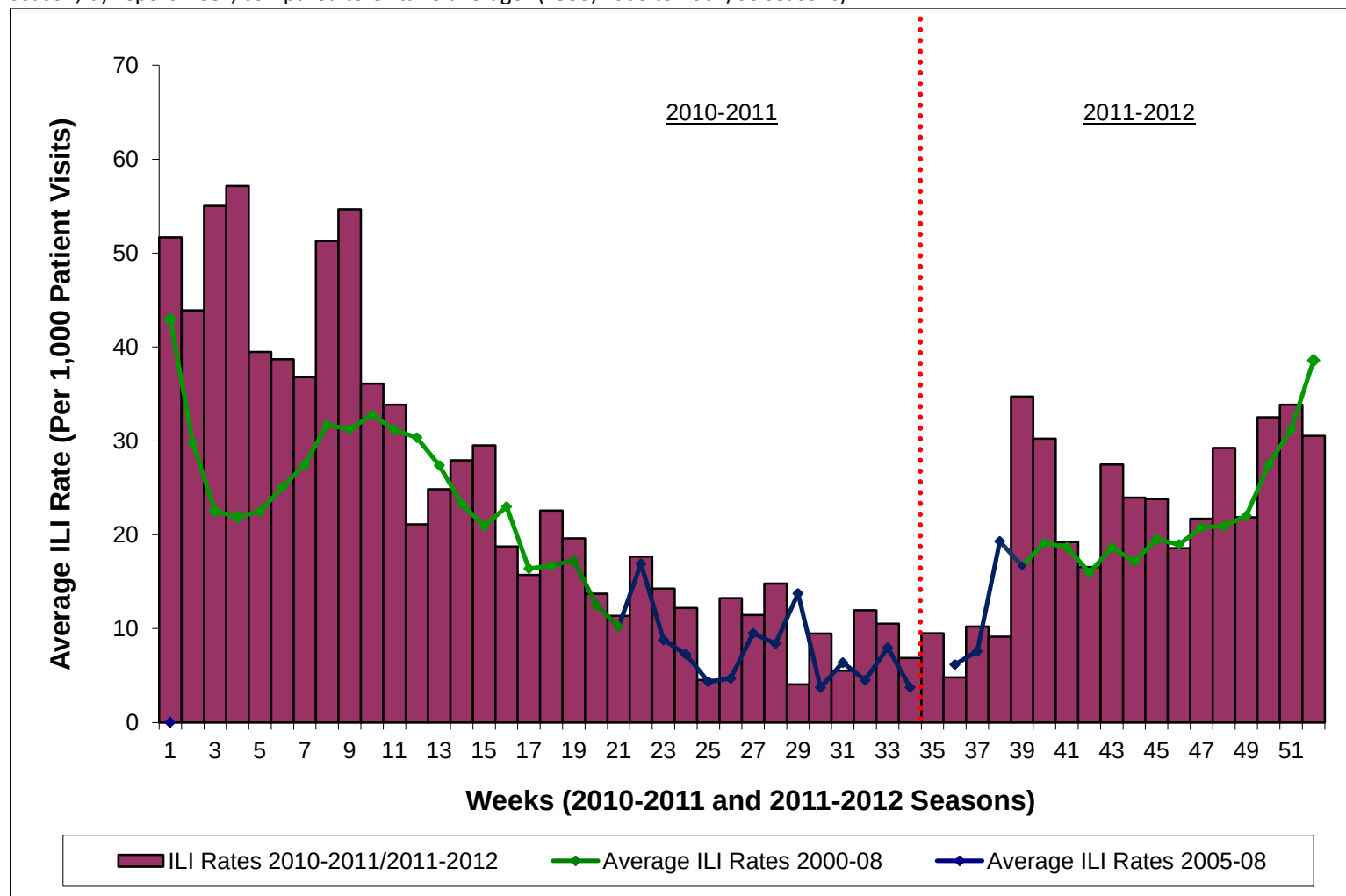


Source: PHO [Provincial Influenza Activity Report (Appendix C) Database]

* 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](#).

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Figure 6: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinels* in Ontario up to week 52 of the 2011-2012 surveillance season, by report week, compared to Ontario average[†] (1999/2000 to 2007/08 seasons).



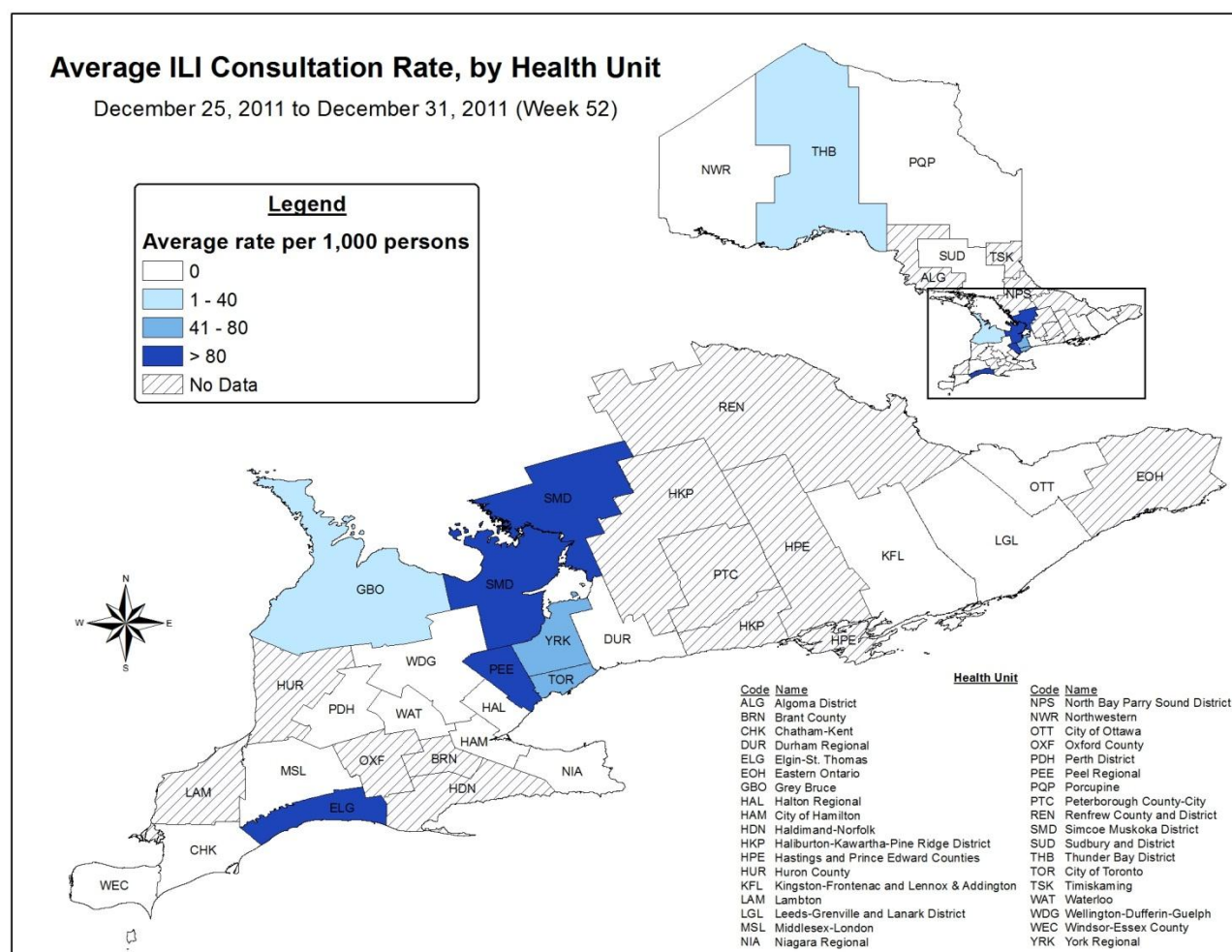
Source: Public Health Agency of Canada

* Sentinel information is reported to Public Health Agency of Canada, 49 sentinels reported in Week 52.

[†] 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.

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Figure 7: Average influenza-like illness consultation rate (per 1,000 patient visits) by health unit as reported by sentinels * in Ontario, for week 52



Source: Public Health Agency of Canada

* Sentinels report ILI and patient data to the Public Health Agency of Canada; 49 sentinels reported in week 52, of which 46 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 52.

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	9	3	23	5	0	40
ILI Consultation Rate (per 1,000 patient visits)	72.00	21.13	33.00	18.59	0.00	30.53

Source: Public Health Agency of Canada

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

APPENDIX - I

Table 1: NML strain characterization, influenza isolates in Ontario and Canada, September 1, 2011 to January 5, 2012.

	Ontario	Canada
Influenza A (H3N2) A/Perth/16/2009-like	1	26
Influenza A(H1N1)pdm09 A/California/07/09-like	4	6
Influenza B B/Brisbane/60/2008-like	3	7
Influenza B B/Wisconsin/01/2010-like	3	8

Source: Influenza and Respiratory

Viruses Section, National Microbiology Laboratory (NML)

Please note that the last version received from PHAC as of 11:30AM on January 5, 2012 was used.

Table 2: Amantadine, Oseltamivir and Zanamivir susceptibility assays completed on Canadian influenza isolates by NML, September 1, 2011 to January 5, 2012.

Influenza strains	Amantadine				Oseltamivir				Zanamivir			
	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	25	0	1	0	25
Influenza A(H1N1)pdm09	3	0	5	0	0	4	0	6	0	4	0	6
Influenza B	NA	NA	NA	NA	0	6	0	14	0	6	0	14

(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 11:30AM on January 5, 2012 was used.