



Ontario Influenza Bulletin | 2011-2012

SURVEILLANCE WEEK 1 (January 1, 2012 – January 7, 2012)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from January 1, 2012 to January 7, 2012 (week 1). **All data are for week 1** and data extraction and analysis for this issue of the Bulletin occurred on January 11, 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

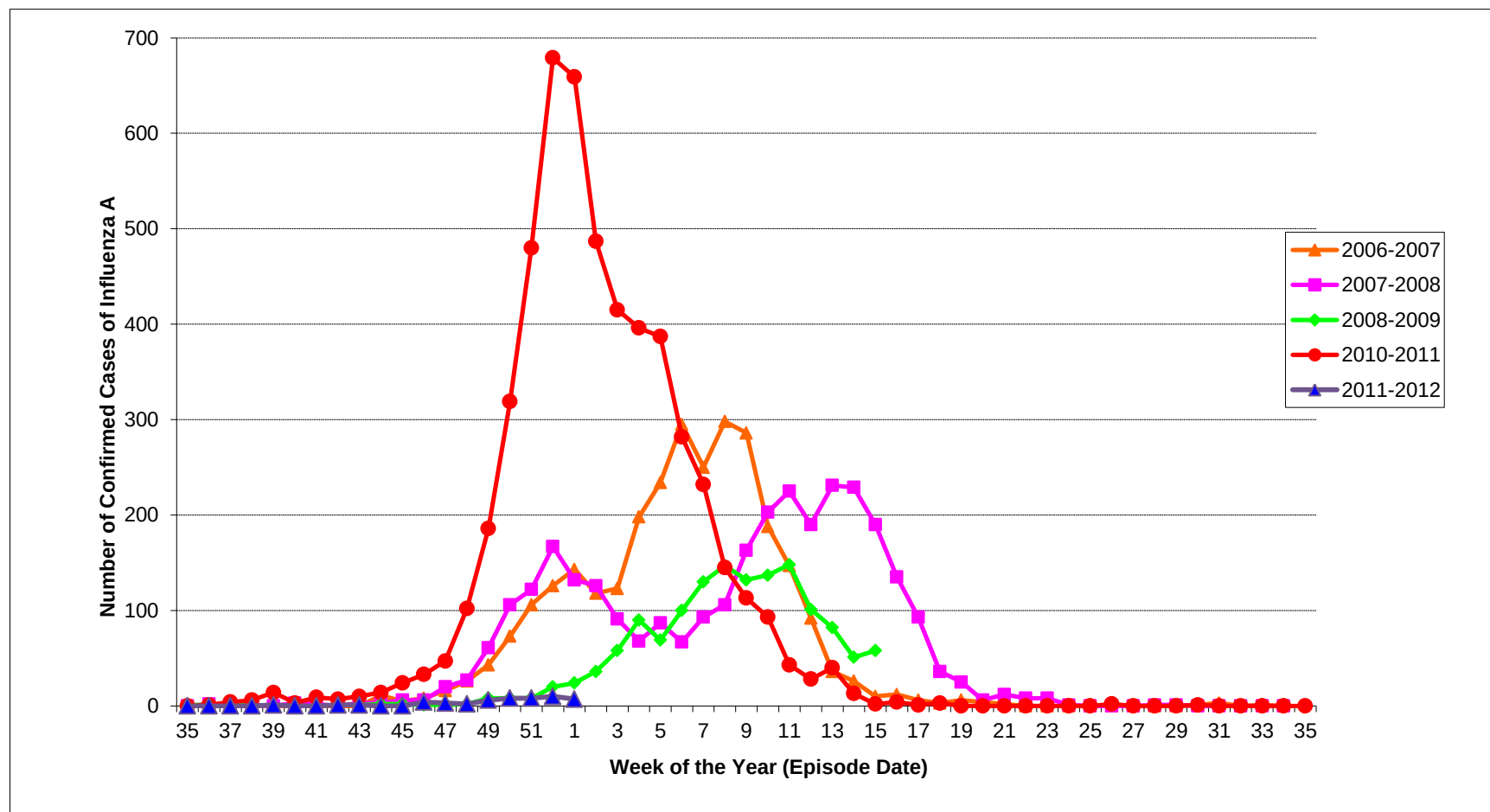
Measure of Activity	Assessment of measure compared to previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory Confirmed Influenza Cases	Slightly higher	Thirty (30) new influenza cases were reported* in week 1, which is more than week 51 (11) and week 52 (15). The percent positivity of laboratory tests for influenza in Ontario was 2.63% for week 1, which was slightly higher than week 52 (0.9%) (Figure 3).
Respiratory virus activity	RSV activity is similar	Among circulating respiratory viruses, RSV had the highest percent positivity at 18.68% (Table 2). This is similar to week 52 at 19.70%.
Institutional Respiratory Infection Outbreaks	Similar	No new institutional influenza outbreaks were reported, however there were fourteen (14) new institutional respiratory infection outbreaks reported for week 1, including one RSV outbreak.
Influenza Activity Levels Reported by Health Units	Higher	Central East, Central West, North East, South West and Toronto regions reported 'sporadic' level influenza activity, while the remaining regions reported no activity for week 1. Influenza activity levels were higher than week 52.
ILI Consultation Rate reported by Sentinels	Higher	The provincial ILI consultation rate increased from 30.53/1,000 patient visits in week 52 to 41.27/1,000 patient visits in week 1. This rate is slightly lower compared to the average rate for week 1 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 1 compared to week 52.
Measure of Severity for Influenza		
Hospitalizations Among Lab Confirmed Cases of Influenza	Higher	There were ten hospitalizations among cases from January 1 to January 7, which is more than the number (6) reported from December 25 to December 31*.
Deaths Among Lab Confirmed Cases of Influenza	No Change	No deaths were reported from January 1 to January 7, which is the same as the number (0) reported from December 25 to December 31*.

*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

- Year-to-date influenza activity for the 2011-2012 season has been lower than the same period in previous years; however, activity has been increasing recently:
 - A total of 78 influenza cases have been reported for the 2011-2012 surveillance season to date, 30 of which were reported during week 1. Cases identified in week 1 were from Durham (1), Halton Region (1), Hamilton (2), Middlesex-London (1), North Bay Parry Sound District (1), Oxford County (1), Peel Region (11), Toronto (9), Waterloo Region (2) and York Region (1) health units. In comparison, 15 cases were reported in week 52. 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 (22 cases) and influenza B (27 cases), which together account for 62.8% (49/78) of cases this season. In recent weeks, most influenza A cases have been identified as (H1N1)pdm09, whereas earlier in the season, most were identified as H3N2.
 - Approximately two-thirds of cases have been children under 5 years old (31 cases) and adults over the age of 65 (15 cases), which together account for 59.0% (46/78) of cases reported to date. The highest number of cases (23) occurred in the 1 to 4 year old age group, which represents 29.5% of cases. Among influenza cases that have been hospitalized, 38.7% (12/31) were children under 5 years old and 32.2% (10/31) have been in adults over the age of 65.
 - Compared to the same period in the 2010-2011 season, fewer cases and fewer influenza outbreaks were reported this season from September 1 to January 7.
- The cause(s) of ILI in Ontario from September 1 to January 7, 2011 has changed as the season progressed:
 - Enterovirus/rhinovirus has been identified as the causative organism in 46.5% (92/198) of institutional respiratory infection outbreaks this season (Table 3). However, almost all of the rhinovirus outbreaks occurred prior to week 50.
 - Enterovirus/rhinovirus and RSV have had the highest percent positivity among laboratory tests of respiratory samples for the season to date (Table 2), with RSV activity increasing steadily since week 44. RSV has had the highest percent positivity among cases since week 49.
 - Increases in ILI consultation rate from 30.53 per 1,000 patient visits in week 52 to 41.27 per 1,000 patient visits in week 1 were driven by higher rates in the 0-4 age group (170.94 per 1,000 visits).

Figure 1: Confirmed cases of influenza A in Ontario by episode date, reported from Sep. 1, 2006 to Jan. 7, 2012[†]



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/01/12].

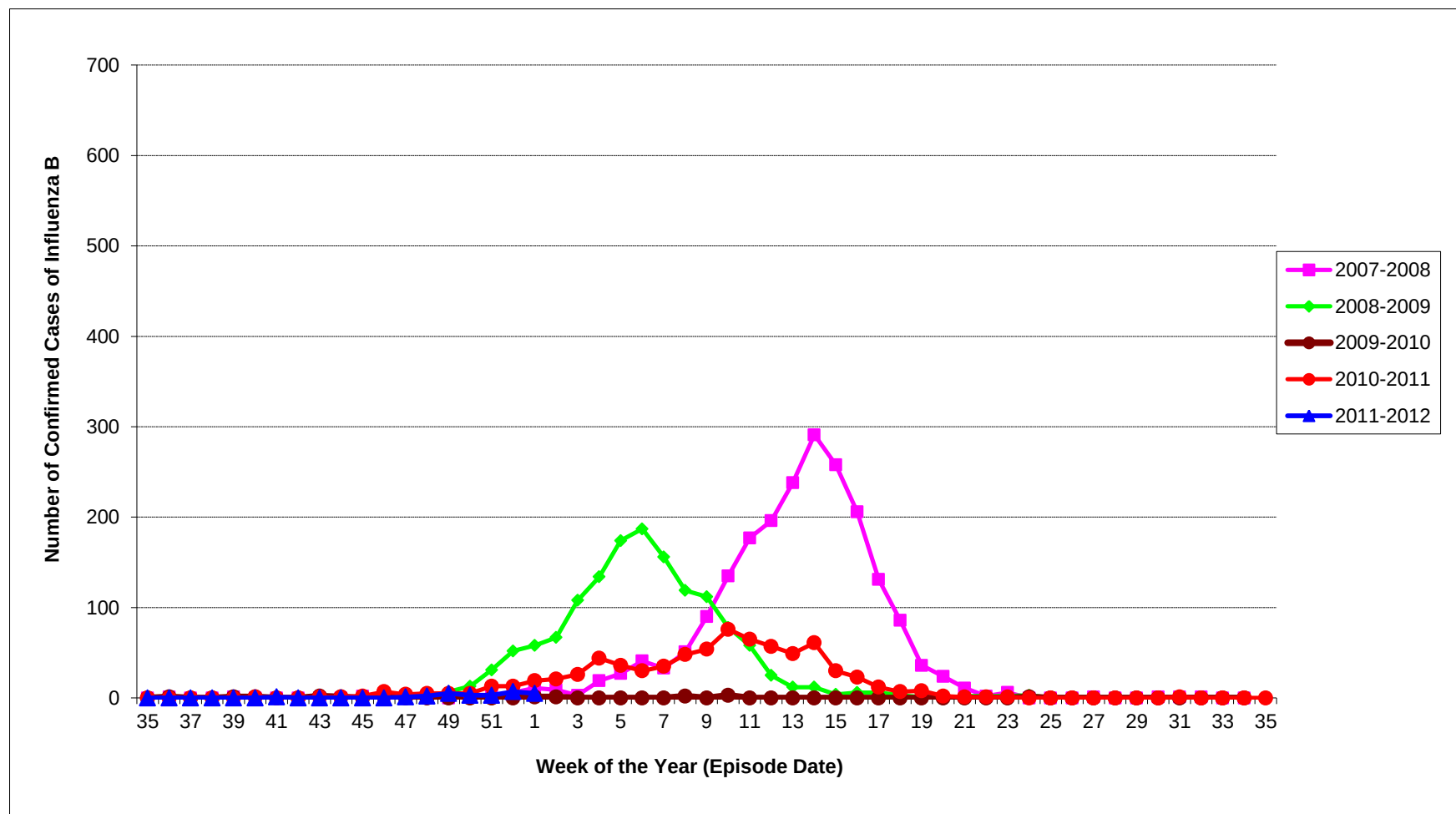
[†] Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

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 Jan. 7, 2012[†]



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/01/12].

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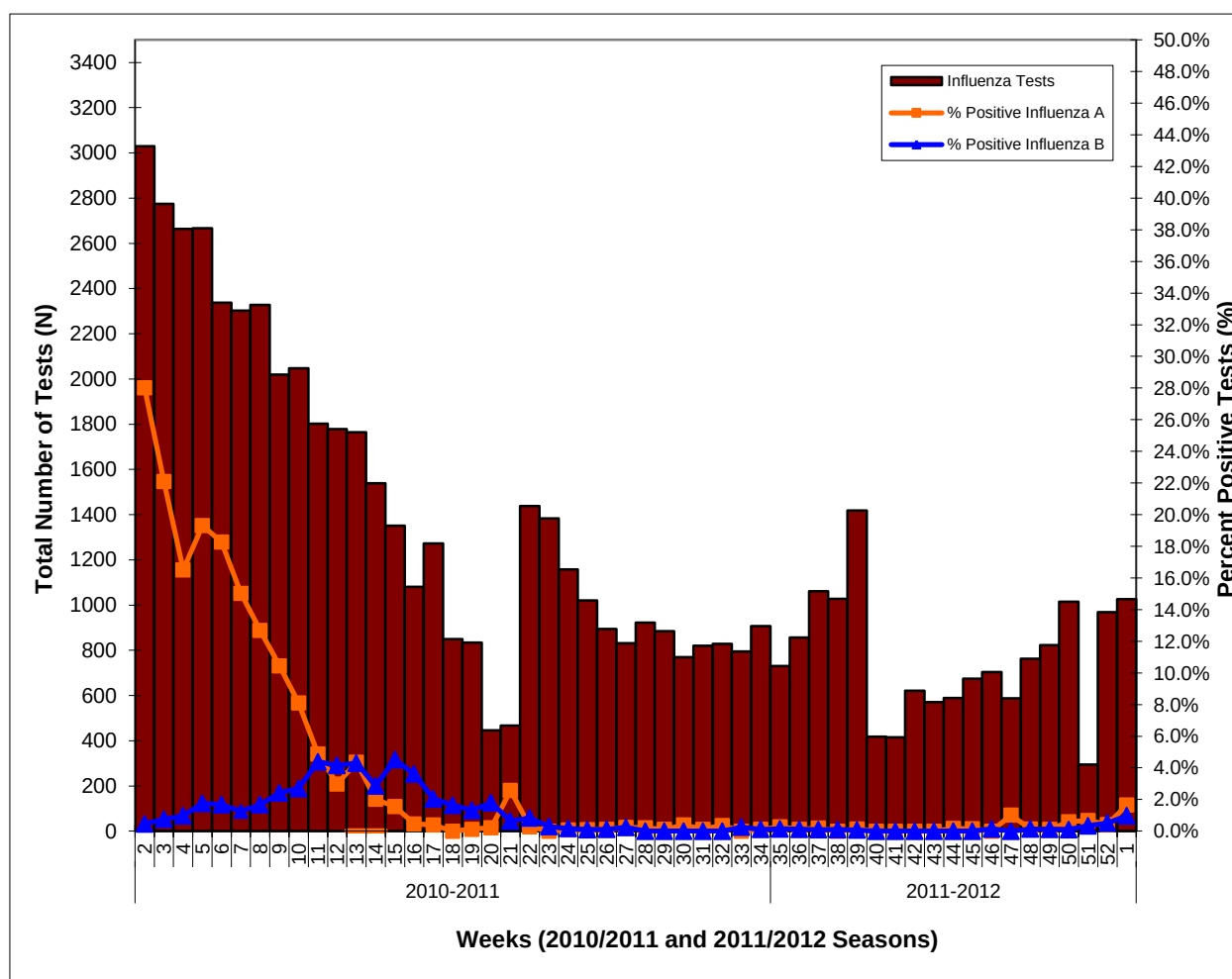
Table 1: Confirmed cases with a reported date during week 1 and cumulative cases (in brackets) of influenza by health unit and health region since September 1, 2011

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)	1 (1)	0 (0)	0 (0)	0 (0)	0 (1)	1 (2)
	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)	1 (1)	0 (0)	0 (0)	0 (0)	0 (1)	1 (2)
Eastern	City of Ottawa	0 (0)	0 (1)	0 (0)	0 (1)	0 (0)	0 (0)	0 (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)	0 (1)	0 (0)	0 (1)	0 (0)	0 (0)	0 (2)
Central East	Durham Region	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)	1 (1)
	Haliburton, Kawartha, Pine Ridge	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Peel Region	3 (7)	2 (3)	0 (0)	0 (0)	0 (0)	6 (12)	11 (22)
	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 (1)	0 (0)	0 (0)	1 (1)	0 (0)	0 (0)	1 (2)
	TOTAL CENTRAL EAST	3 (8)	2 (3)	0 (0)	1 (2)	0 (0)	7 (13)	13 (26)
Toronto	Toronto	4 (13)	0 (1)	0 (0)	0 (2)	0 (0)	5 (11)	9 (27)
	TOTAL TORONTO	4 (13)	0 (1)	0 (0)	0 (2)	0 (0)	5 (11)	9 (27)
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)	1 (1)	0 (0)	0 (4)	0 (0)	0 (0)	1 (5)
	Oxford County	0 (0)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)
	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 SOUTH WEST	0 (0)	2 (2)	0 (0)	0 (4)	0 (0)	0 (0)	2 (6)
Central West	Brant County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	City Of Hamilton	0 (0)	2 (4)	0 (0)	0 (0)	0 (0)	0 (1)	2 (5)
	Haldimand-Norfolk	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Halton Region	0 (1)	0 (1)	0 (0)	1 (1)	0 (0)	0 (0)	1 (3)
	Niagara Region	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)
	Waterloo Region	0 (0)	0 (1)	0 (0)	1 (1)	0 (0)	1 (1)	2 (3)
	Wellington-Dufferin-Guelph	0 (0)	0 (1)	0 (0)	0 (1)	0 (0)	0 (0)	0 (2)
	TOTAL CENTRAL WEST	0 (1)	2 (8)	0 (0)	2 (3)	0 (0)	1 (2)	5 (14)
	TOTAL ONTARIO	7 (22)	7 (16)	0 (0)	3 (13)	0 (0)	13 (27)	30 (78)

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/01/11].

*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 1, 2012. Please note that the last version received from PHAC as of 1:00PM on January 11, 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 1

Detected viruses	Number and percent positive specimens		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza A (all)	17 (1.66)	52 (0.43)	1026	12119
Influenza B	10 (0.97)	28 (0.23)	1026	12119
Parainfluenza virus	21 (2.28)	518 (5.07)	921	10221
Adenovirus	17 (1.85)	185 (1.81)	921	10221
Respiratory Syncytial Virus	172 (18.68)	807 (7.77)	921	10381
Enterovirus	25 (3.19)	680 (7.99)	783	8508
Human metapneumovirus	11 (2.69)	28 (0.54)	409	5140
Coronavirus	13 (7.3)	44 (1.28)	178	3433

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 1, 2012. Please note that the last version received from PHAC as of 1:00PM on January 11, 2012 was used.

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Table 3: Institutional respiratory infection outbreaks in Ontario: new outbreaks* in week 1 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	1	7.1
Combined Outbreaks [†]	0	0.0
Other organisms ^α	1	7.1
Enterovirus/rhinovirus	0	0.0
No organism identified/reported	12	85.7
TOTAL	14	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)	20	10.1
RSV	4	2.0
Combined Outbreaks [†]	9	4.5
Other organisms ^α	5	2.5
Enterovirus/rhinovirus	92	46.5
No organism identified/reported	68	34.3
TOTAL	198	100.0
Types of Institutions – All Outbreaks **	N	% (of outbreaks)
Long-Term Care Homes	128	64.6
Hospitals	10	5.1
Retirement Homes	25	12.6
Other	1	0.5
Not Reported	34	17.2
TOTAL	198	100.0

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/01/11]

* 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. January 1, 2012 – January 7, 2012

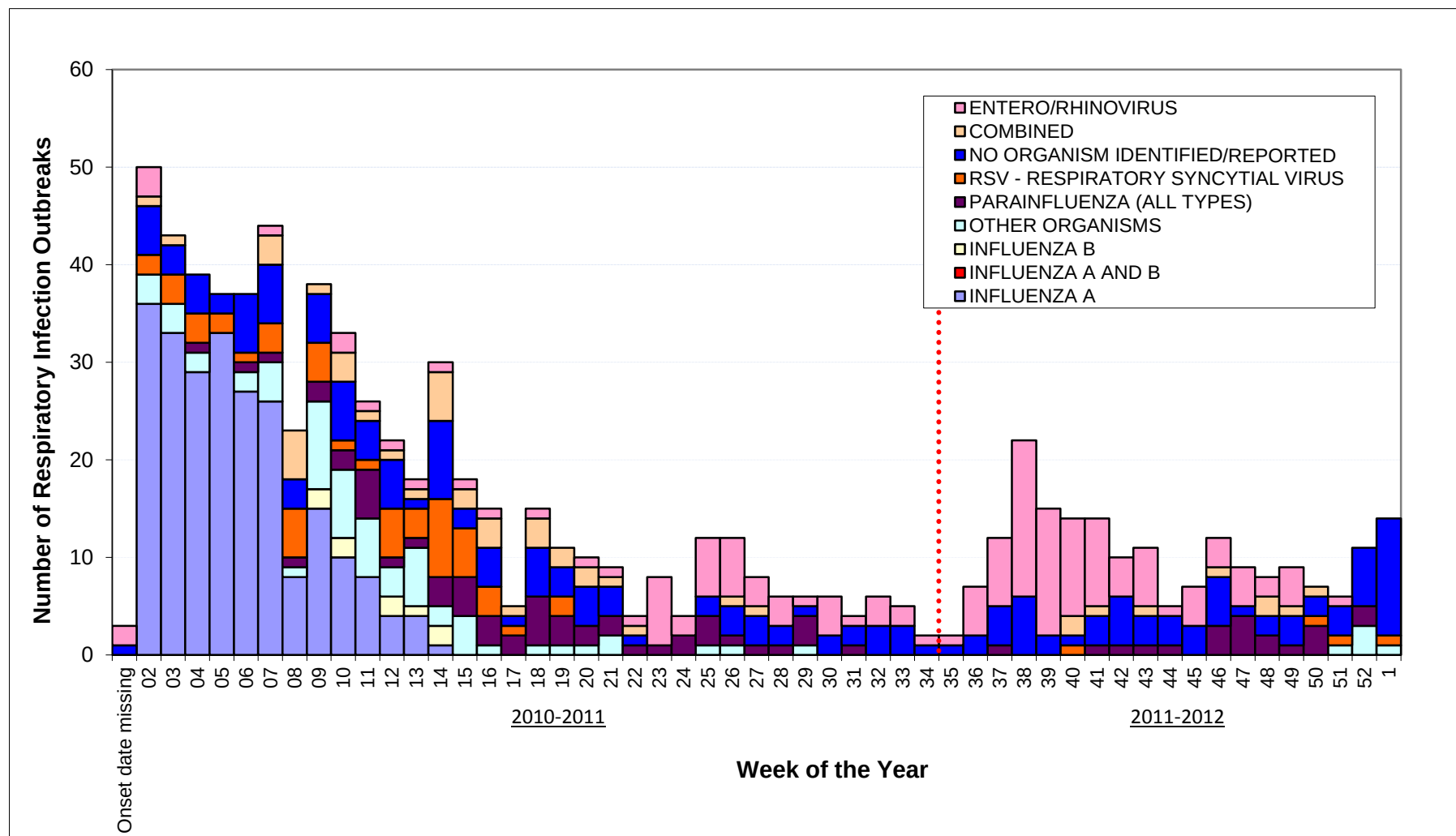
** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to Week 1, 2012.

[†] 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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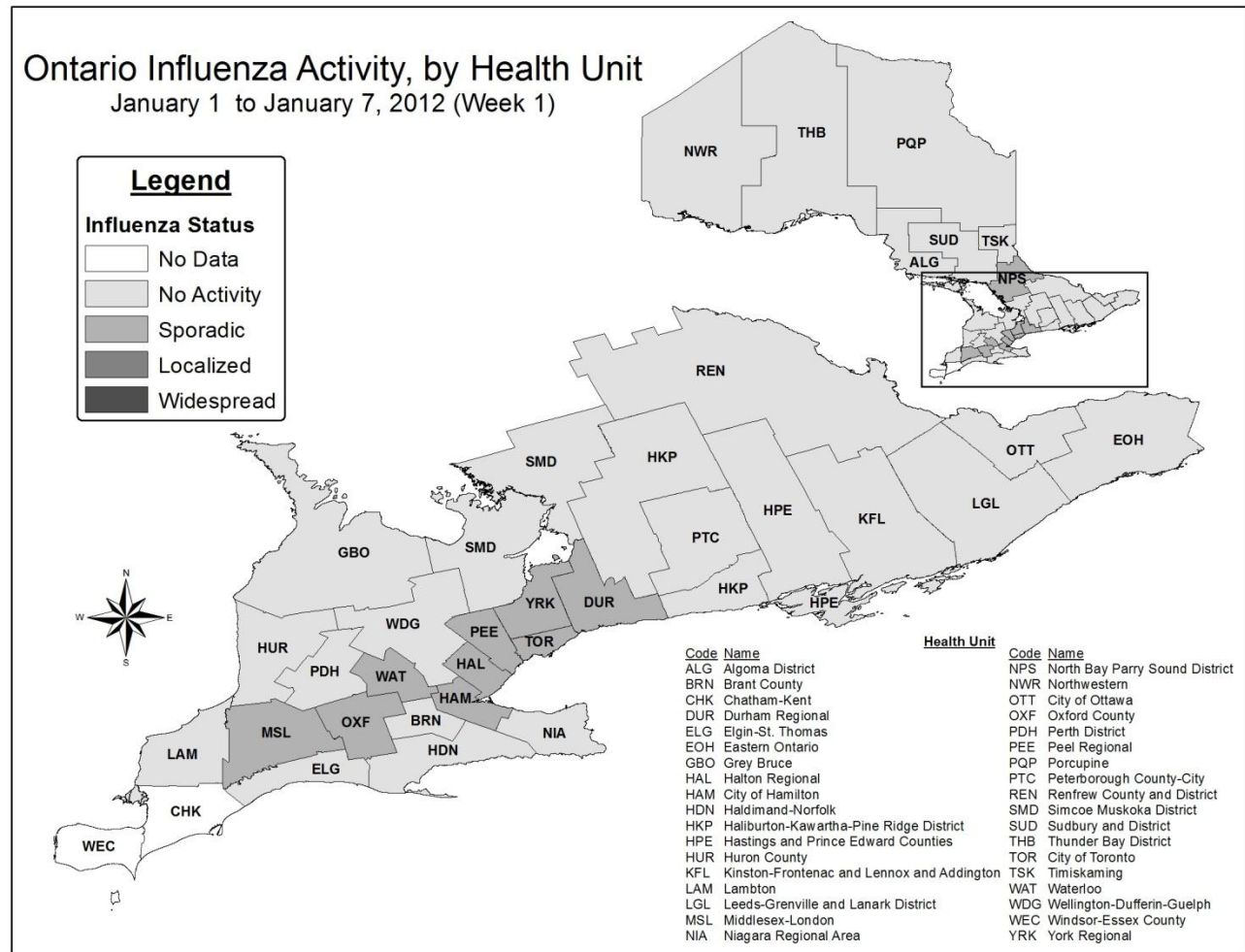
Figure 4: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including week 1 of the 2011-2012 season by causative organism



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/01/11]

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Figure 5: Influenza activity* levels in Ontario by health unit for week 1, 2012

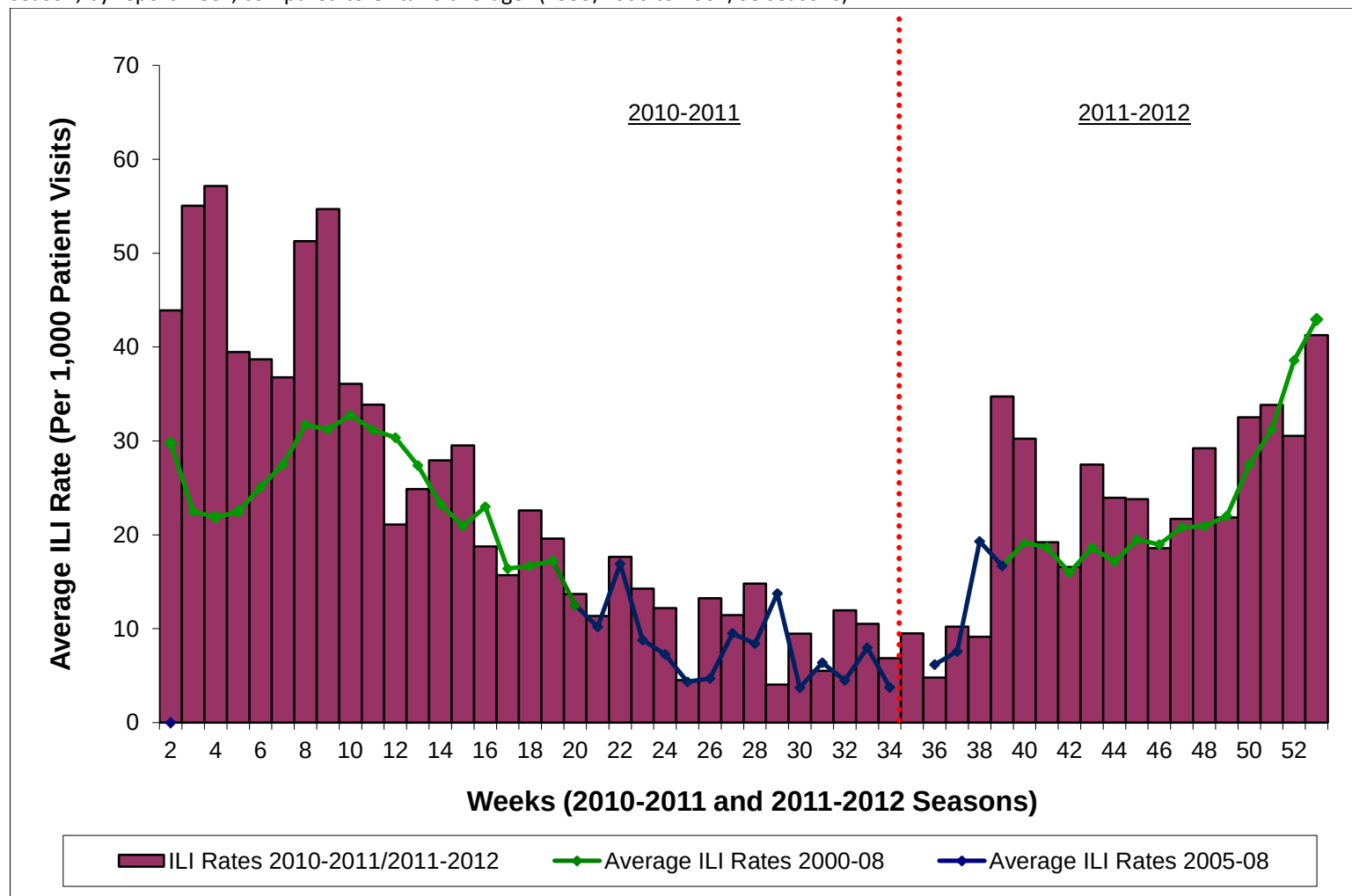


Source: PHO [Provincial Influenza Activity Report (Appendix C) Database]

* 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 1 of the 2011-2012 surveillance season, by report week, compared to Ontario average[†] (1999/2000 to 2007/08 seasons).



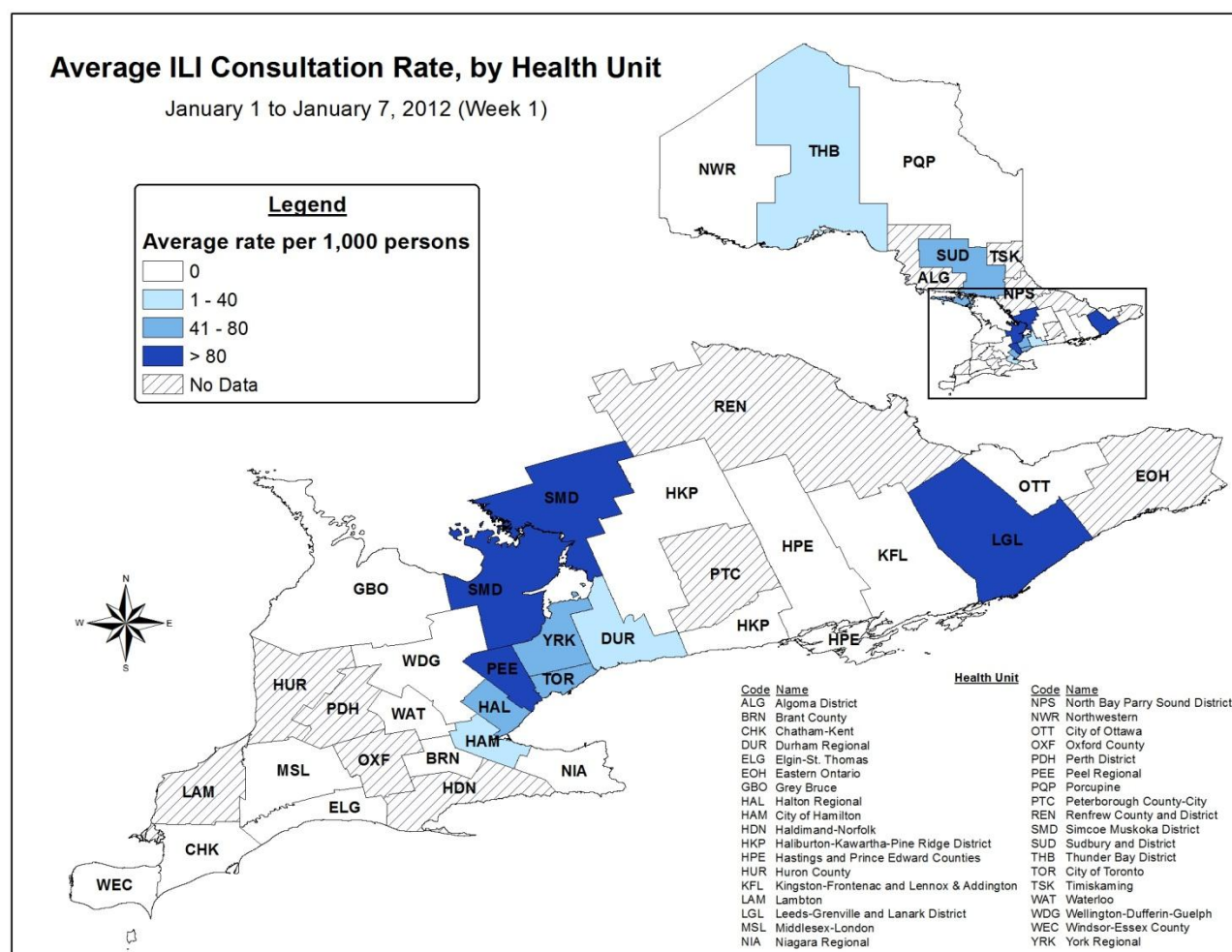
Source: Public Health Agency of Canada

* Sentinel information is reported to Public Health Agency of Canada, 64 sentinels reported in Week 1.

[†] 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 1



Source: Public Health Agency of Canada

* Sentinels report ILI and patient data to the Public Health Agency of Canada; 64 sentinels reported in week 1, of which 61 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 1.

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	20	8	35	7	0	70
ILI Consultation Rate (per 1,000 patient visits)	170.94	47.34	33.02	20.00	0.00	41.27

Source: Public Health Agency of Canada

* Sentinel information is reported to the Public Health Agency of Canada; 64 sentinels reported in week 1.

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APPENDIX - I

Table 1: NML strain characterization, influenza isolates in Ontario and Canada, September 1, 2011 to January 12, 2012.

	Ontario	Canada
Influenza A (H3N2) A/Perth/16/2009-like	1	27
Influenza A(H1N1)pdm09 A/California/07/09-like	6	8
Influenza B B/Brisbane/60/2008-like	8	14
Influenza B B/Wisconsin/01/2010-like	6	12

Source: Influenza and Respiratory Viruses Section, National Microbiology Laboratory (NML)
Please note that the last version received from PHAC as of 1:30PM on January 12, 2012 was used.

Table 2: Amantadine, Oseltamivir and Zanamivir susceptibility assays completed on Canadian influenza isolates by NML, September 1, 2011 to January 12, 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	36	0	0	1	0	27	0	1	0	27
Influenza A(H1N1)pdm09	4	0	6	0	0	7	0	9	0	7	0	9
Influenza B	NA	NA	NA	NA	0	14	0	25	0	14	0	25

(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 1:30PM on January 12, 2012 was used.