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Ontario Influenza Bulletin | 2011-2012

SURVEILLANCE WEEK 44 (October 30, 2011 – November 5, 2011)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from October 30, 2011 to November 5, 2011 (week 44). **All data are for week 44** and data extraction and analysis for this issue of the Bulletin occurred on November 9, 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	Slightly higher	One new (1) influenza case was reported* in week 44, which is the slightly higher than week 43** (0). The percent positivity of laboratory tests for influenza A in Ontario was 0.2% for week 44, only slightly higher than week 43 (0.0%) (Figure 3).
Respiratory virus activity	Entero/rhinovirus activity is similar	Among other circulating respiratory viruses, entero/rhinovirus had the highest percent positivity at 10.34% (Table 2).
Institutional Respiratory Infection Outbreaks	No Change	No new institutional influenza outbreaks were reported, however there were three new institutional respiratory infection outbreaks reported for week 44, one of which was laboratory confirmed as entero/rhinovirus.
Influenza Activity Levels Reported by Health Units	Slightly lower	Health units either reported no activity or did not report for week 44 which is slightly lower than week 43.
ILI Consultation Rate reported by Sentinels	Lower	The provincial ILI consultation rate decreased from 27.49/1,000 patient visits in week 43 to 23.95/1,000 patient visits in week 44. This rate is higher than the average rate for week 44 from previous years.
OVERALL ASSESSMENT FOR VIRUS ACTIVITY	Influenza activity in Ontario was *similar* compared to the previous week.	Overall, the indicators show that influenza activity was *similar* during week 44 compared to week 43.
Measure of Severity for Influenza		
Hospitalizations Among Lab Confirmed Cases of Influenza	Slightly higher	There was one hospitalized case reported* from October 30 to November 5, which is slightly higher than the number (0) reported from October 23 to October 29.
Deaths Among Lab Confirmed Cases of Influenza	No Change	No deaths were reported* from October 30 to November 5, which is the same as the number reported from October 23 to October 29.

*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.

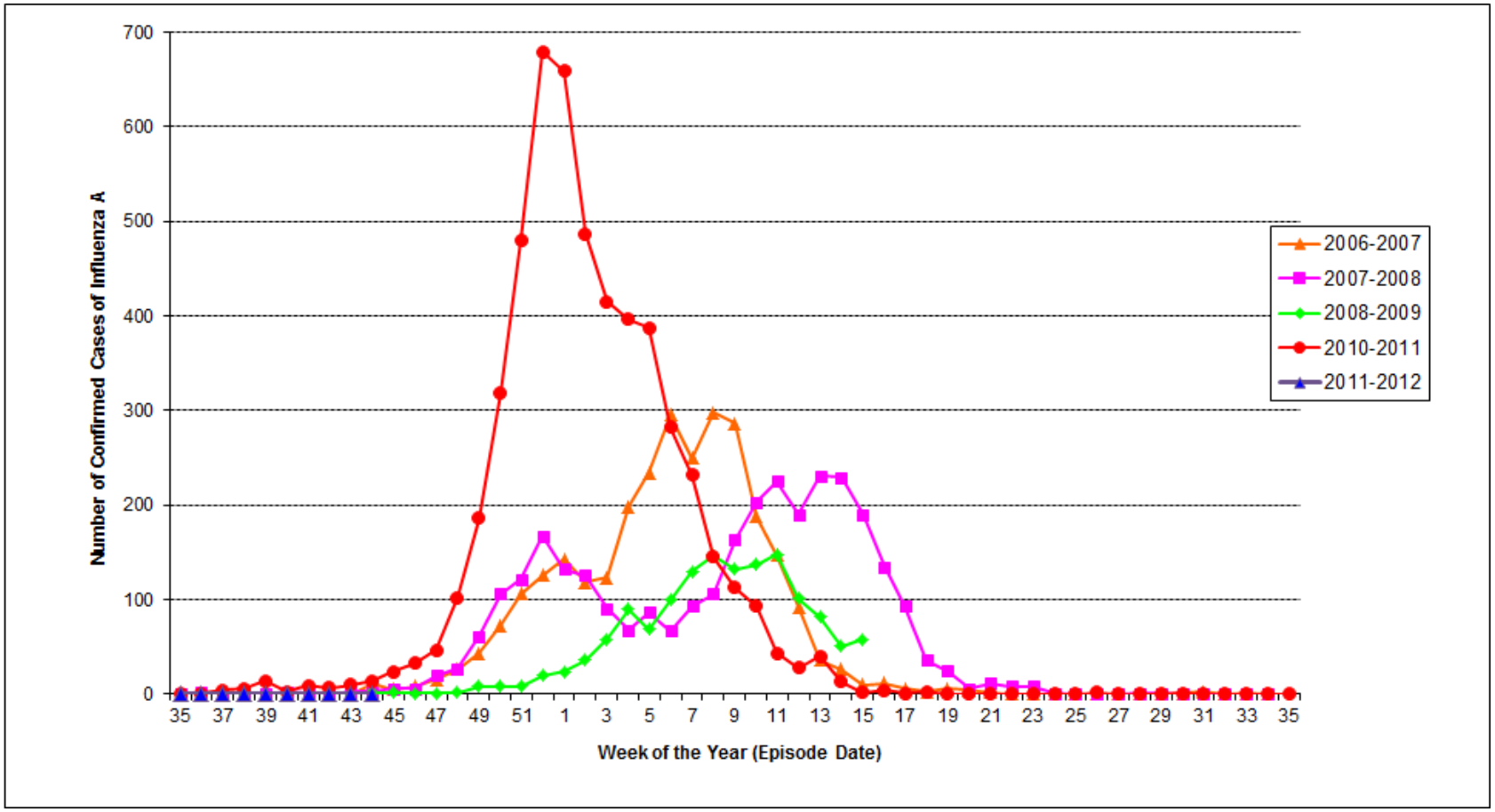
** One influenza A case was reported in Week 44 from Toronto with an onset date in week 43.

Produced by: Surveillance and Epidemiology Program, Public Health Ontario

Summary of current and season to date influenza activity

- There has been little to no influenza activity for the 2011-2012 season to date
    - Two cases of influenza had been reported as of November 5, 2011 (the end of week 44), an influenza A/H3 from the Ottawa area and on October 31, the second influenza A/H3 case of the season was identified and reported to Toronto Public Health.
    - An influenza A/H3 case was identified and reported by the Thunder Bay health unit on November 9th.
    - Compared to the 2010-2011 season, there were fewer cases reported and fewer influenza A outbreaks from September 1 to November 5 in the current 2011-2012 season
- The majority of ILI activity in Ontario since the beginning of September to November 5, 2011 can be attributed to entero/rhinovirus.
    - The majority of outbreaks had entero/rhinovirus identified as the causative organism
    - Entero/rhinovirus has had the highest percent positivity among laboratory tests of respiratory samples for the current week and season to date. However, entero/virus activity in week 44 (~10% positivity) declined somewhat as compared to week 43 (~12% positivity).

Figure 1: Confirmed cases of influenza A in Ontario by episode date, reported from Sep. 1, 2006 to Nov. 5, 2011†

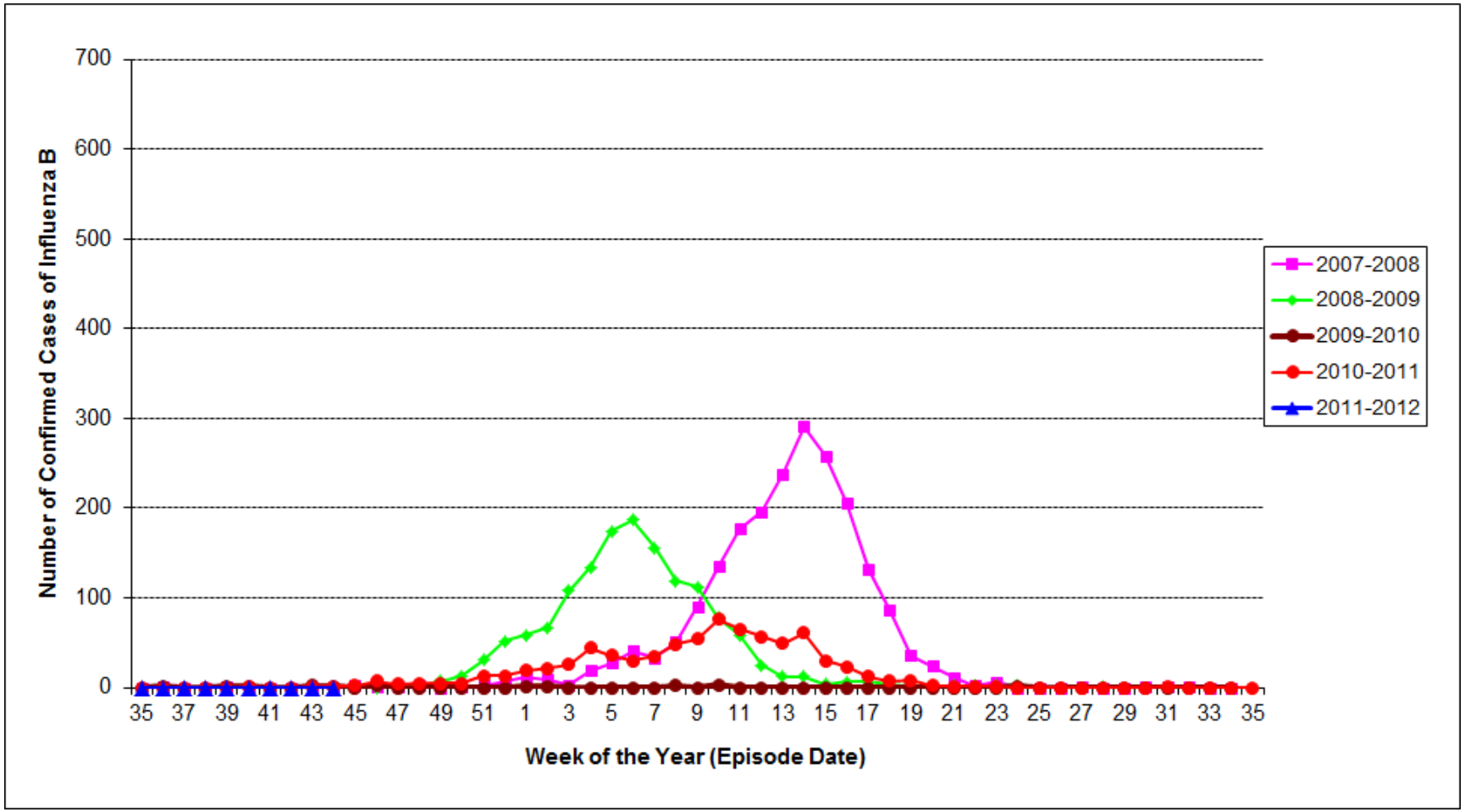


SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2011/11/09].

† 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 Nov. 5, 2011†



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2011/11/09].

† 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.

Ontario Influenza Bulletin, 2011-2012 (September 1, 2011 – November 5, 2011)

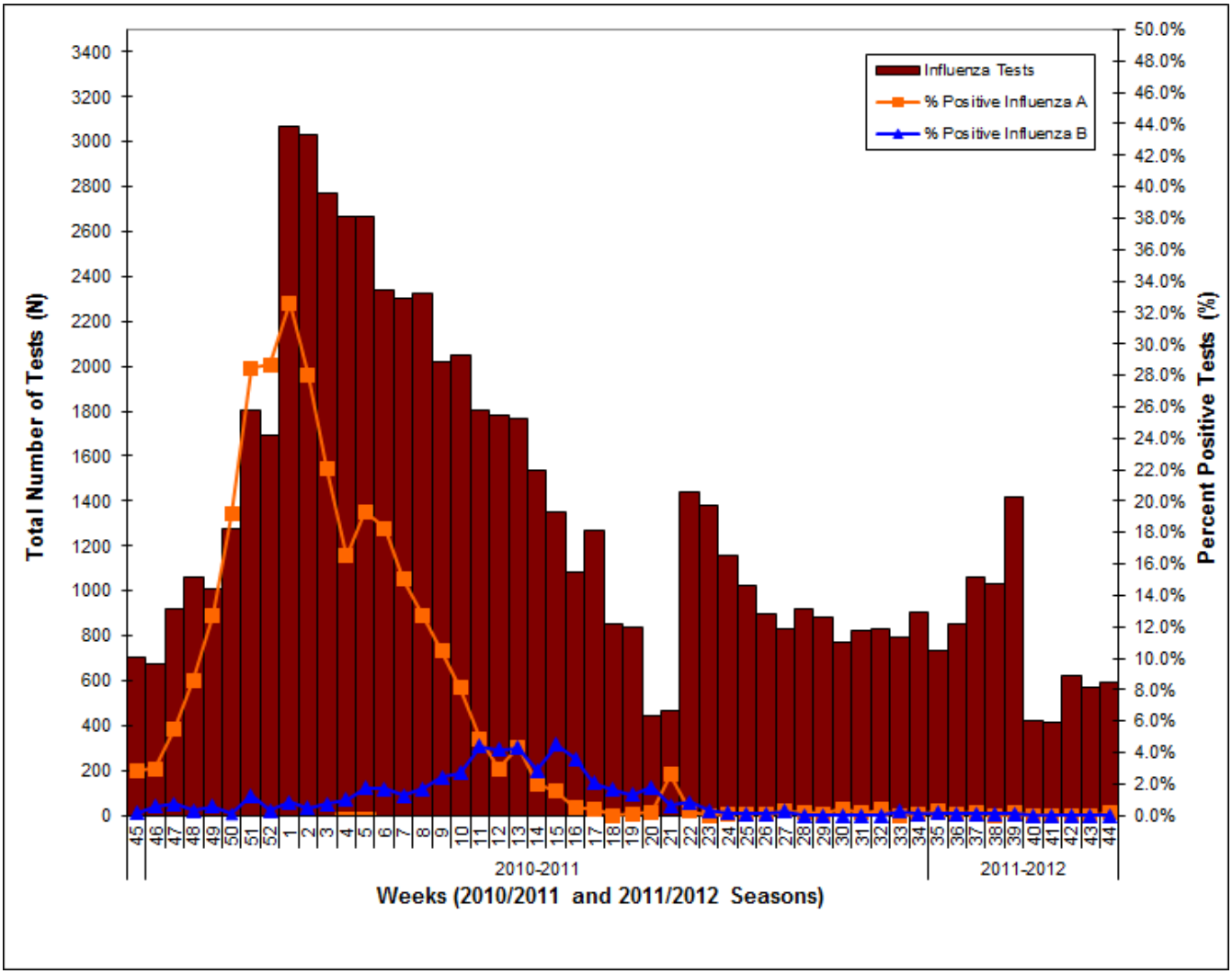
Table 1: Confirmed cases with a reported date during week 44 and cumulative cases (in brackets) of influenza by health unit and health region since September 1, 2011

Region	Health Unit	Influenza A				Influenza A & B	Influenza B	TOTAL
		A(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 (0)	0 (0)	0 (0)	0 (0)
	TOTAL NORTH WEST	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**
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 (0)	0 (0)
	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 (0)**	**0 (0)**
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 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	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 (0)	0 (0)	0 (0)	0 (0)
	York Region	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	TOTAL CENTRAL EAST	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**	**0 (0)**
Toronto	Toronto	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)	0 (0)	1 (1)
	TOTAL TORONTO	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)	0 (0)	1 (1)
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 (0)	0 (0)	0 (0)	0 (0)
	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 (0)**	**0 (0)**	**0 (0)**	**0 (0)**
Central West	Brant County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	City Of Hamilton	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	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)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Wellington-Dufferin-Guelph	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	TOTAL CENTRAL WEST	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	TOTAL ONTARIO	**0 (0)**	**0 (0)**	**0 (0)**	**1 (2)**	**0 (0)**	**0 (0)**	**1 (2)**

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2011/11/09].

*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 44, 2011. Please note that the last version received from PHAC as of 1:50PM on November 10, 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 44

Detected viruses	Number and percent positive specimens		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza A (all)	1 (0.17)	2 (0.05)	589	4087
Influenza B	0 (0.0)	0 (0.0)	589	4087
Parainfluenza virus	35 (8.62)	226 (6.43)	406	3513
Adenovirus	6 (1.48)	32 (0.91)	406	3513
Respiratory Syncytial Virus	2 (0.48)	27 (0.76)	417	3569
Entero/rhinovirus	42 (10.34)	418 (15.11)	406	2767
Human metapneumovirus	0 (0.0)	3 (0.15)	130	1966
Coronavirus	2 (1.63)	5 (0.41)	123	1220

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 44, 2011. Please note that the last version received from PHAC as of 1:50PM on November 9, 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 44 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	33.3
RSV	0	0.0
Combined Outbreaks†	0	0.0
Other organisms α	0	0.0
Entero/rhinovirus	1	33.3
No organism identified	1	33.3
TOTAL	**3**	***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)	3	3.2
RSV	1	1.1
Combined Outbreaks†	3	3.2
Other organisms α	0	0.0
Entero/rhinovirus	63	66.3
No organism identified	25	26.3
TOTAL	***95***	***100.0***
Types of Institutions – All Outbreaks **	**N**	**% (of outbreaks)**
Long-Term Care Homes	61	64.2
Hospitals	7	7.4
Retirement Homes	12	12.6
Other	0	0.0
Not Reported	15	15.8
TOTAL	***95***	***100.0***

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2011/11/09]

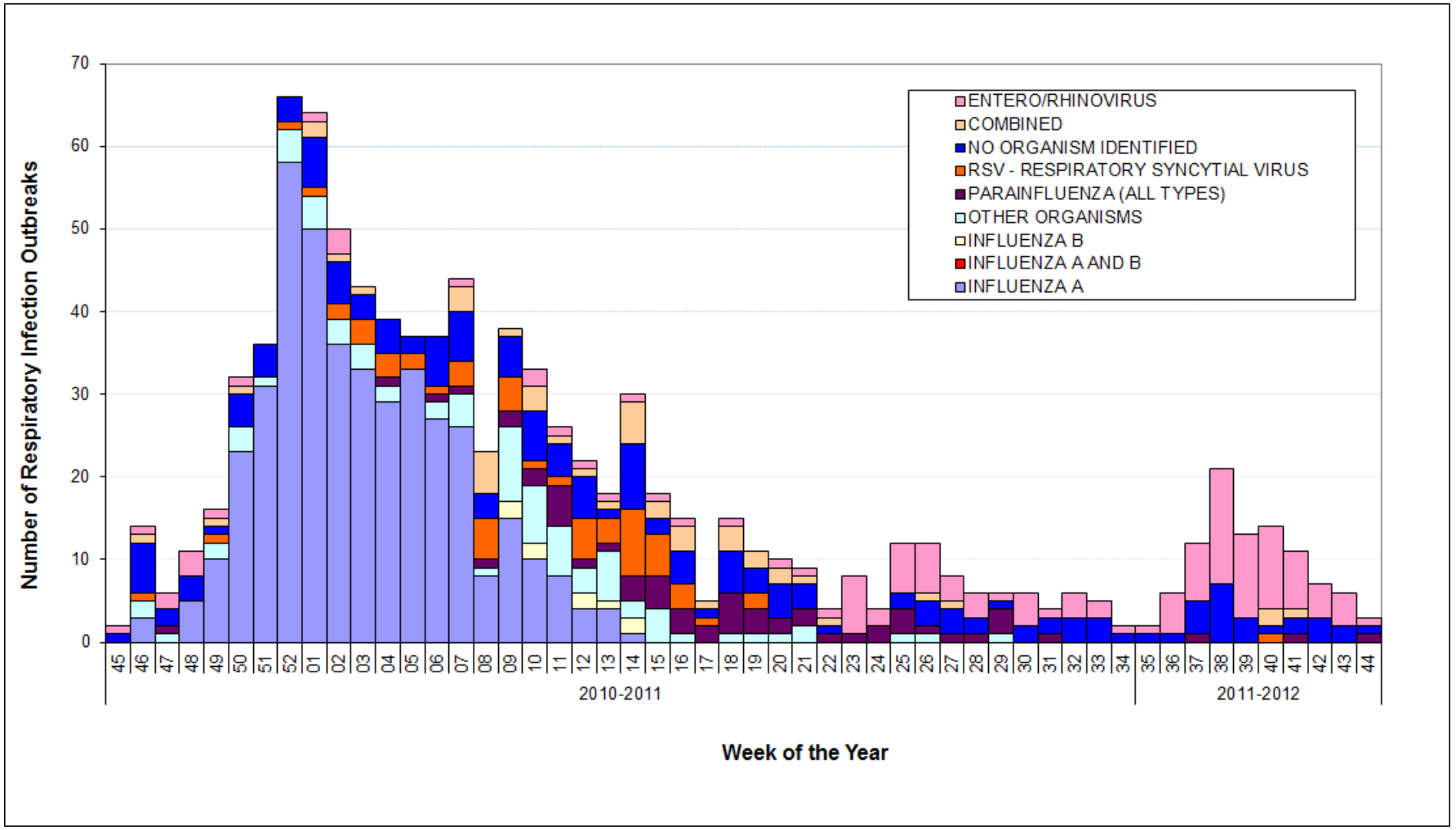
* New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded through iPHIS in the current surveillance period; i.e. October 30, 2011 – November 5, 2011

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to Week 44.

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

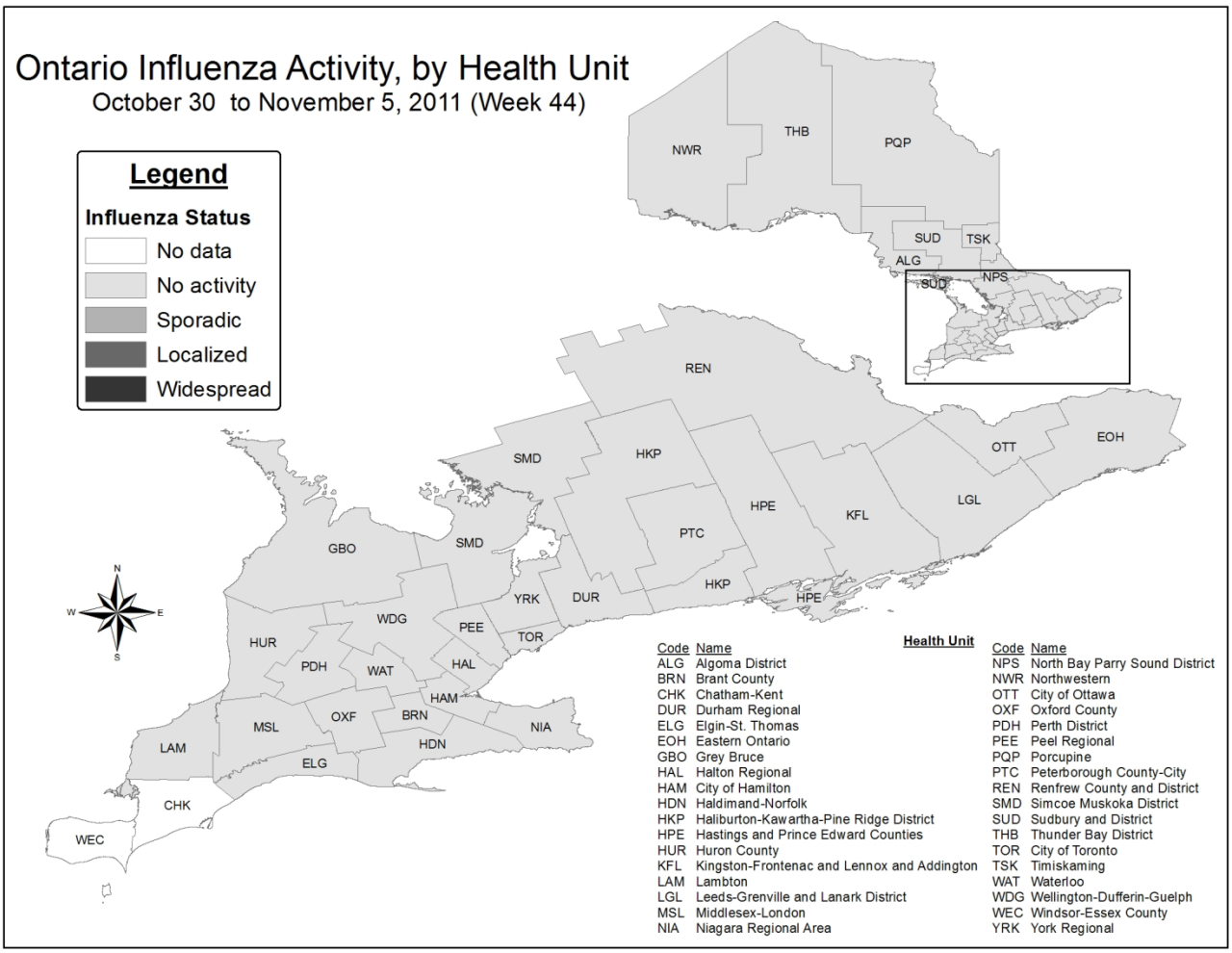
α Other organisms include outbreaks involving other aetiological agents, such as human metapneumovirus, adenovirus and coronavirus.

Figure 4: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including week 44 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 [2011/11/09]

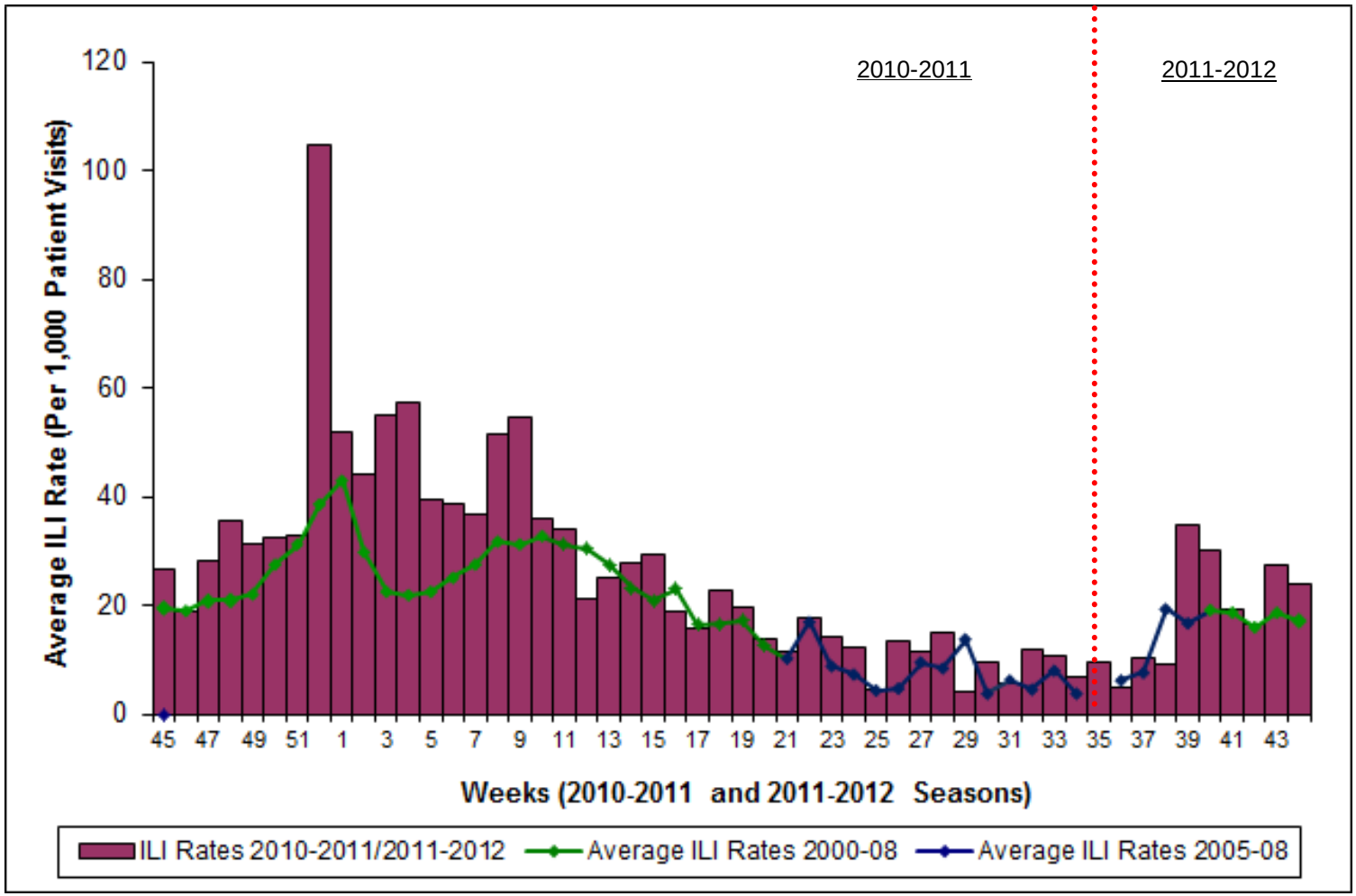
Figure 5: Influenza activity* levels in Ontario by health unit for week 44, 2011



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 2011-2012 season included in the Appendix-1]

Figure 6: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinels* in Ontario up to week 44 of the 2011-12 surveillance season, by report week, compared to Ontario average† (1999/2000 to 2007/08 seasons).

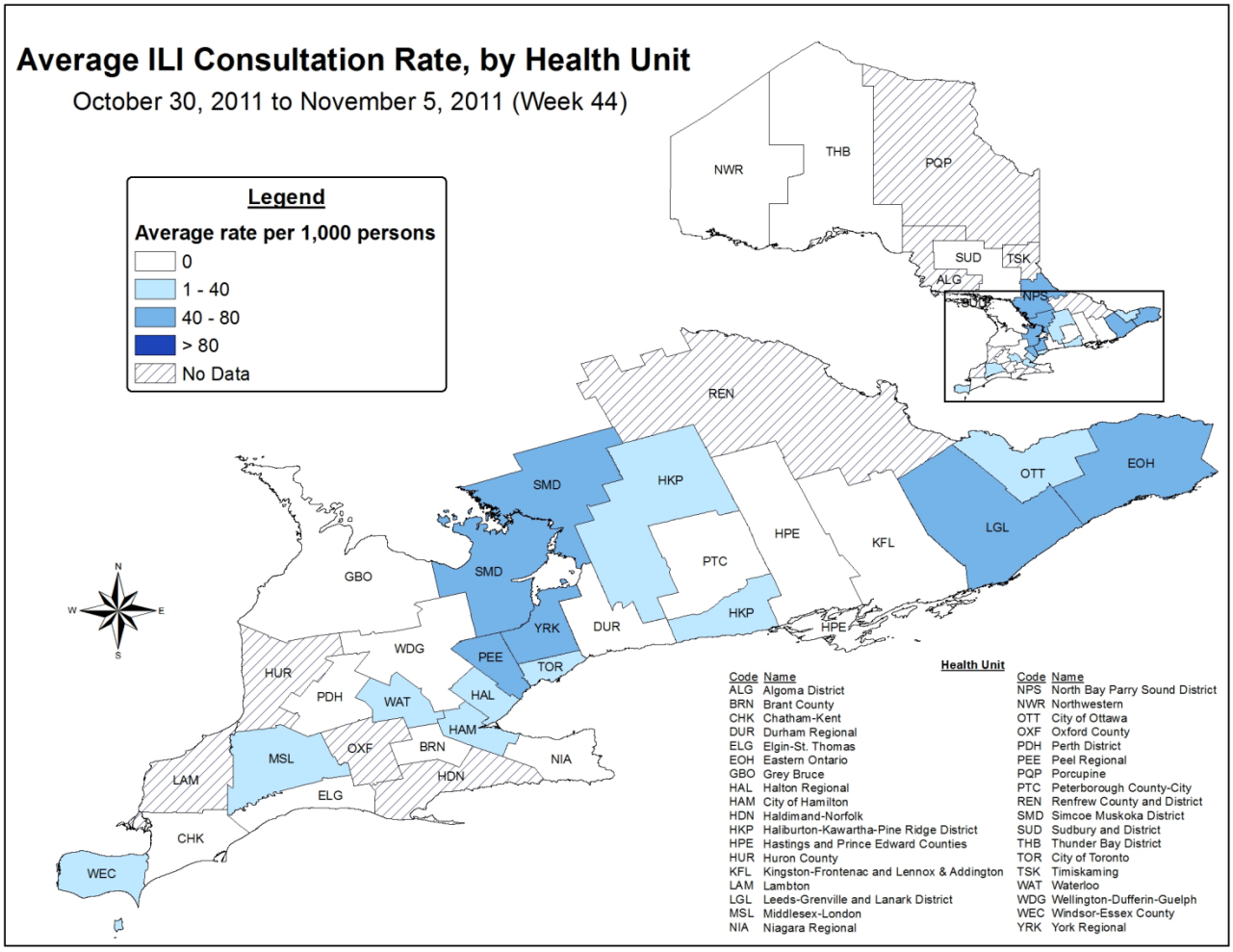


Source: Public Health Agency of Canada

* Sentinel information is reported to Public Health Agency of Canada, 87 sentinels reported in Week 44. 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 44



Source: Public Health Agency of Canada
* Sentinels report ILI and patient data to the Public Health Agency of Canada; 87 sentinels reported in week 44, of which 81 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 44.

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
ILI Sum	5	13	36	6	0	60
ILI Consultation Rate (per 1,000 patient visits)	28.74	52.85	25.84	8.67	0.00	23.95

Source: Public Health Agency of Canada
* Sentinel information is reported to the Public Health Agency of Canada; 87 sentinels reported in week 44.

FURTHER INFORMATION

1. Public Health Ontario
   PHO Laboratory Based Respiratory Pathogen Report
   http://www.oahpp.ca/resources/flubulletin.html

2. Ontario Ministry of Health and Long-Term Care
   Previous issues of the *Ontario Influenza Bulletin* can continue to be accessed at:
   http://www.health.gov.on.ca/en/pro/programs/publichealth/flu/bulletins/2010/default.aspx

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/fluactivitysurv.htm

5. European Influenza Surveillance Scheme
   http://www.ecdc.europa.eu/en/activities/surveillance/EISN/Pages/home.aspx

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 for 2011-2012 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to Public Health Ontario
WK35	28-Aug-11	3-Sep-11	6-Sep-11
WK36	4-Sep-11	10-Sep-11	13-Sep-11
WK37	11-Sep-11	17-Sep-11	20-Sep-11
WK38	18-Sep-11	24-Sep-11	27-Sep-11
WK39	25-Sep-11	1-Oct-11	4-Oct-11
WK40	2-Oct-11	8-Oct-11	11-Oct-11
WK41	9-Oct-11	15-Oct-11	18-Oct-11
WK42	16-Oct-11	22-Oct-11	25-Oct-11
WK43	23-Oct-11	29-Oct-11	1-Nov-11
WK44	30-Oct-11	5-Nov-11	8-Nov-11
WK45	6-Nov-11	12-Nov-11	15-Nov-11
WK46	13-Nov-11	19-Nov-11	22-Nov-11
WK47	20-Nov-11	26-Nov-11	29-Nov-11
WK48	27-Nov-11	3-Dec-11	6-Dec-11
WK49	4-Dec-11	10-Dec-11	13-Dec-11
WK50	11-Dec-11	17-Dec-11	20-Dec-11
WK51	18-Dec-11	24-Dec-11	27-Dec-11
WK52	25-Dec-11	31-Dec-11	3-Jan-12
WK1	1-Jan-12	7-Jan-12	10-Jan-12
WK2	8-Jan-12	14-Jan-12	17-Jan-12
WK3	15-Jan-12	21-Jan-12	24-Jan-12
WK4	22-Jan-12	28-Jan-12	31-Jan-12
WK5	29-Jan-12	4-Feb-12	7-Feb-12
WK6	5-Feb-12	11-Feb-12	14-Feb-12
WK7	12-Feb-12	18-Feb-12	21-Feb-12
WK8	19-Feb-12	25-Feb-12	28-Feb-12
WK9	26-Feb-12	3-Mar-12	6-Mar-12
WK10	4-Mar-12	10-Mar-12	13-Mar-12
WK11	11-Mar-12	17-Mar-12	20-Mar-12
WK12	18-Mar-12	24-Mar-12	27-Mar-12
WK13	25-Mar-12	31-Mar-12	3-Apr-12
WK14	1-Apr-12	7-Apr-12	10-Apr-12
WK15	8-Apr-12	14-Apr-12	17-Apr-12
WK16	15-Apr-12	21-Apr-12	24-Apr-12
WK17	22-Apr-12	28-Apr-12	1-May-12
WK18	29-Apr-12	5-May-12	8-May-12
WK19	6-May-12	12-May-12	15-May-12
WK20	13-May-12	19-May-12	22-May-12
WK21	20-May-12	26-May-12	29-May-12
WK22	27-May-12	2-Jun-12	5-Jun-12

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**.

APPENDIX - II

Table 1: NML strain characterization, influenza isolates in Ontario and Canada, September 1, 2011 to November 10, 2011.

	Ontario	Canada
Influenza A (H3N2) A/Perth/16/2009-like	0	3
Influenza A(H1N1)pdm09 A/California/07/09-like	0	0
Influenza B B/Brisbane/60/2008-like	0	1
Influenza B B/Wisconsin/01/2010-like	0	2

Source: Influenza and Respiratory Viruses Section, National Microbiology Laboratory (NML)

Table 2: Amantadine, Oseltamivir and Zanamivir susceptibility assays completed on Canadian influenza isolates by NML, September 1, 2011 to November 10, 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)	0	0	1	0	0	0	0	3	0	0	0	3
Influenza A(H1N1)pdm09	0	0	0	0	0	0	0	0	0	0	0	0
Influenza B	NA	NA	NA	NA	0	0	0	3	0	0	0	3

(R-Resistant, S- Susceptible, NA-Not applicable)
Source: Influenza and Respiratory Viruses Section, National Microbiology Laboratory (NML)