

Ontario Respiratory Virus Bulletin | 2013-2014

SURVEILLANCE WEEK 48 (November 24, 2013 – November 30, 2013)

This issue of the Ontario Respiratory Virus Bulletin provides information on the surveillance period from November 24, 2013 to November 30, 2013 (Week 48). Weekly production of this expanded version of the Ontario Respiratory Virus Bulletin will continue throughout the influenza season until May 2014, and then an abbreviated version will be published on alternate weeks.

Assessment of Influenza Activity in Ontario

Measure of activity	Assessment of measure compared to the previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory confirmed influenza cases	Slightly higher	There were 34 influenza cases (32 influenza A and 2 influenza B) reported ¹ in week 48 (Table 1), which was higher than the number of influenza cases reported in week 47 (20 influenza A and 3 influenza B cases). Percent positivity ² of laboratory tests for all influenza types in Ontario was 4.0% for week 48 (Table 2), which was slightly higher than the percent positivity in week 46 (2.8%).
Influenza outbreaks	Lower	No new influenza outbreaks were reported ³ in week 48. There was one enterovirus outbreak, one respiratory syncytial virus outbreak, and three other outbreaks for which no organism had been identified (Table 3). In week 47, one influenza A outbreak was reported.
Influenza activity levels reported by health units	Slightly higher	Twelve health units reported 'sporadic' and two reported 'localized' levels of influenza activity in week 48. This is higher than the influenza activity in week 47, in which seven health units reported 'sporadic' and three reported 'localized' levels of influenza activity.
ILI consultation rate reported by sentinels	Slightly higher	The provincial influenza-like-illness (ILI) consultation rate ⁴ in week 48 (53.5/1,000 patient visits) was slightly higher than the rate in week 47 (48.9/1,000 patient visits) (Table 4).
OVERALL ASSESSMENT	Slightly higher	Overall, the indicators show that influenza activity for week 48 was slightly higher than week 47.
Measures of severity for influenza		
Hospitalizations and deaths among lab confirmed cases of influenza	Lower	There were 8 hospitalized cases reported ¹ in week 48, which was lower than the 16 hospitalized cases reported in week 47. No deaths have been reported to date in the 2013-2014 season.

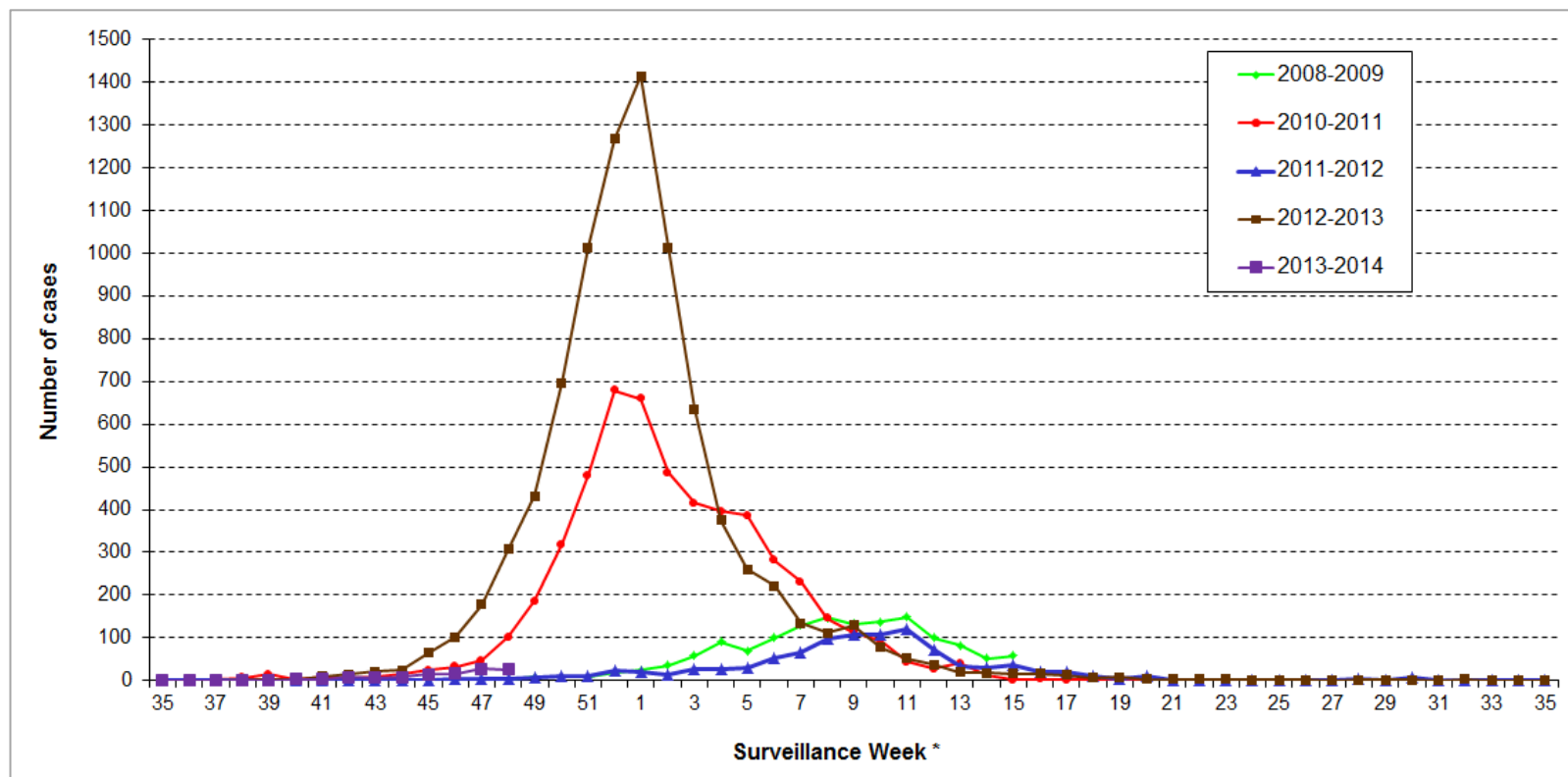
1. The number of **reported** cases needs to be interpreted with caution because there is a lag between the onset of illness, hospital admission or death and when this information is reported to public health. 2. Positivity among specimens submitted for testing to Ontario laboratories reporting to the Centre for Immunization and Respiratory Infectious Diseases (CIRID). 3. The number of new outbreaks reported for the current week is based on the onset date of illness for the first case in an outbreak. 4. Small numbers of sentinels reporting can make the ILI rates unstable. Please interpret these data cautiously.

Summary of current and season-to-date respiratory virus activity in Ontario

- There has been little **influenza activity** in the 2013-2014 season to date.
 - ‘Sporadic’ influenza activity during week 48 has been reported from a small number of health units located in each health unit region, except for the North East (Figure 6).
 - ‘Localized’ influenza activity during week 48 was reported in Eastern Ontario and Toronto health units (Figure 6).
 - In week 48 there were a total of five new institutional respiratory outbreaks, none of which were reported as influenza (Table 3). There was one institutional influenza A outbreak reported for surveillance week 47.
 - The percent positivity* for influenza was low, with 4.0% of respiratory samples testing positive for influenza A in week 48; there were no samples testing positive for influenza B (Table 2, Appendix: Figure I). Influenza A(H1N1)pdm09 is the dominant circulating influenza A subtype.
 - A total of 116 influenza cases have been reported for the 2013-2014 surveillance season to date. Among these cases, the majority (88.8%, 103/116) were influenza A (Table 1).
- Among all other circulating respiratory viruses* in week 48 (Table 2):
 - Rhinovirus had the highest percent positivity (11.5%), which was slightly lower compared to the previous week (13.5%)
 - Respiratory syncytial virus had the second highest percent positivity (5.2%), which was higher compared to the previous week (1.4%)
- In the season to date, 44 hospitalizations and no deaths have been reported among laboratory-confirmed influenza cases. The majority of hospitalizations occurred in influenza A cases (90.9%, 40/44).

* Based on positivity among specimens submitted for testing to laboratories reporting to the Public Health Agency of Canada’s Centre for Immunization and Respiratory Infectious Diseases (CIRID).

Figure 1. Number of reported confirmed cases of **influenza A** by surveillance week: Ontario, September 1, 2008 to November 30, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/12/04].

Notes:

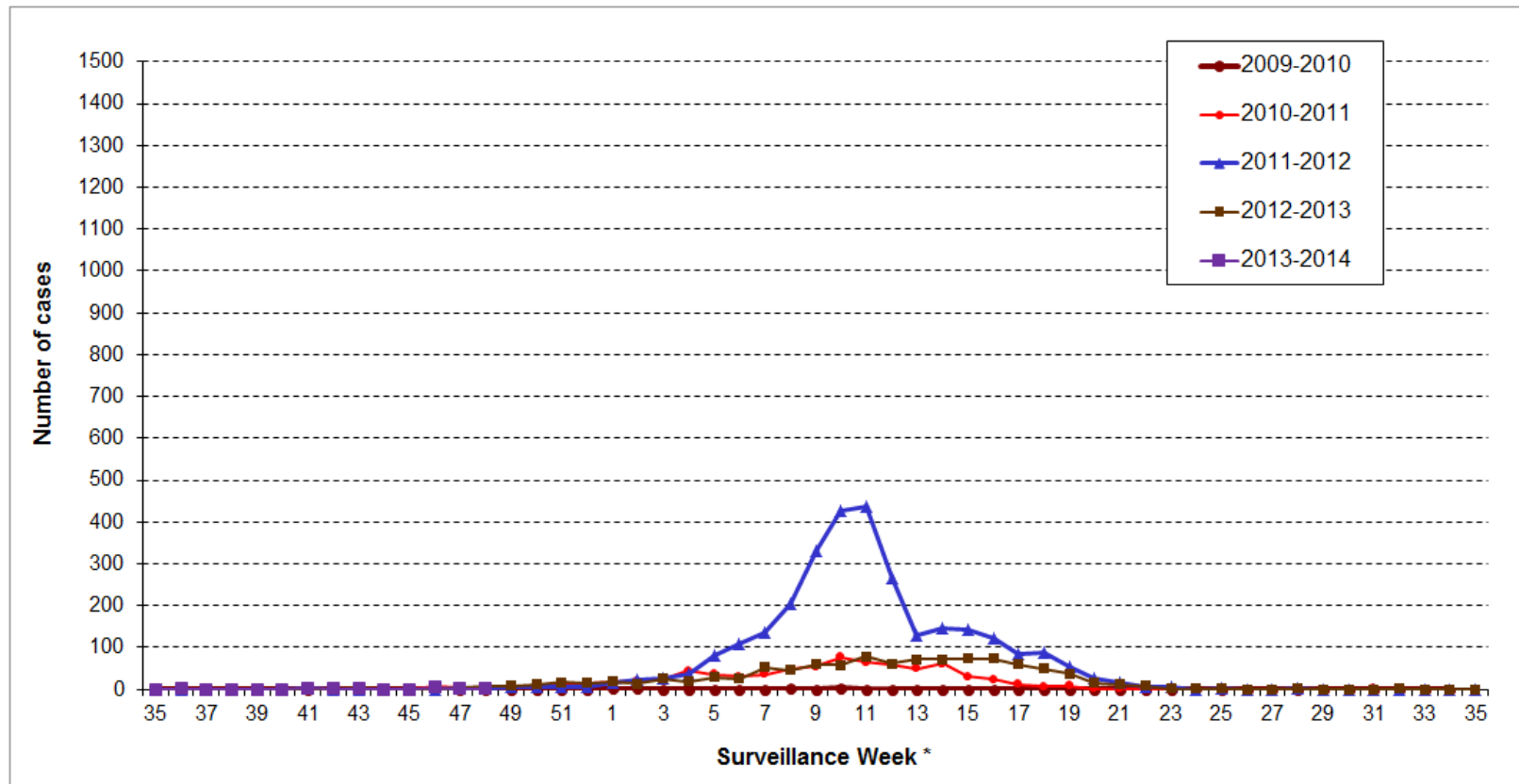
Interpret most recent case counts for the current season with caution due to reporting lags.

*Cases are assigned to a particular surveillance week based on the episode date entered in iPHIS for the case. 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). Case counts based on episode dates may not be the same as case counts based on reported dates.

Cases after week 15 in the 2008-2009 season, as well as all cases from the 2009-2010 influenza season, were excluded from this graph based on the assumption that the influenza burden during the pandemic period are not comparable to a regular influenza season .

Week 53 of the 2008-2009 season has been removed for continuity in displaying trends.

Figure 2. Number of reported confirmed cases of **influenza B** by surveillance week: Ontario, September 1, 2009 to November 30, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/12/04].

Notes:

Interpret most recent case counts for the current season with caution due to reporting lags.

*Cases are assigned to a particular reporting week based on the episode date entered in iPHIS for the case. 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). Case counts based on episode dates may not be the same as case counts based on reported dates.

Table 1. Number of reported confirmed influenza cases by health unit and health region: Ontario, week 48 and cumulative* (in brackets) for the 2013-2014 season

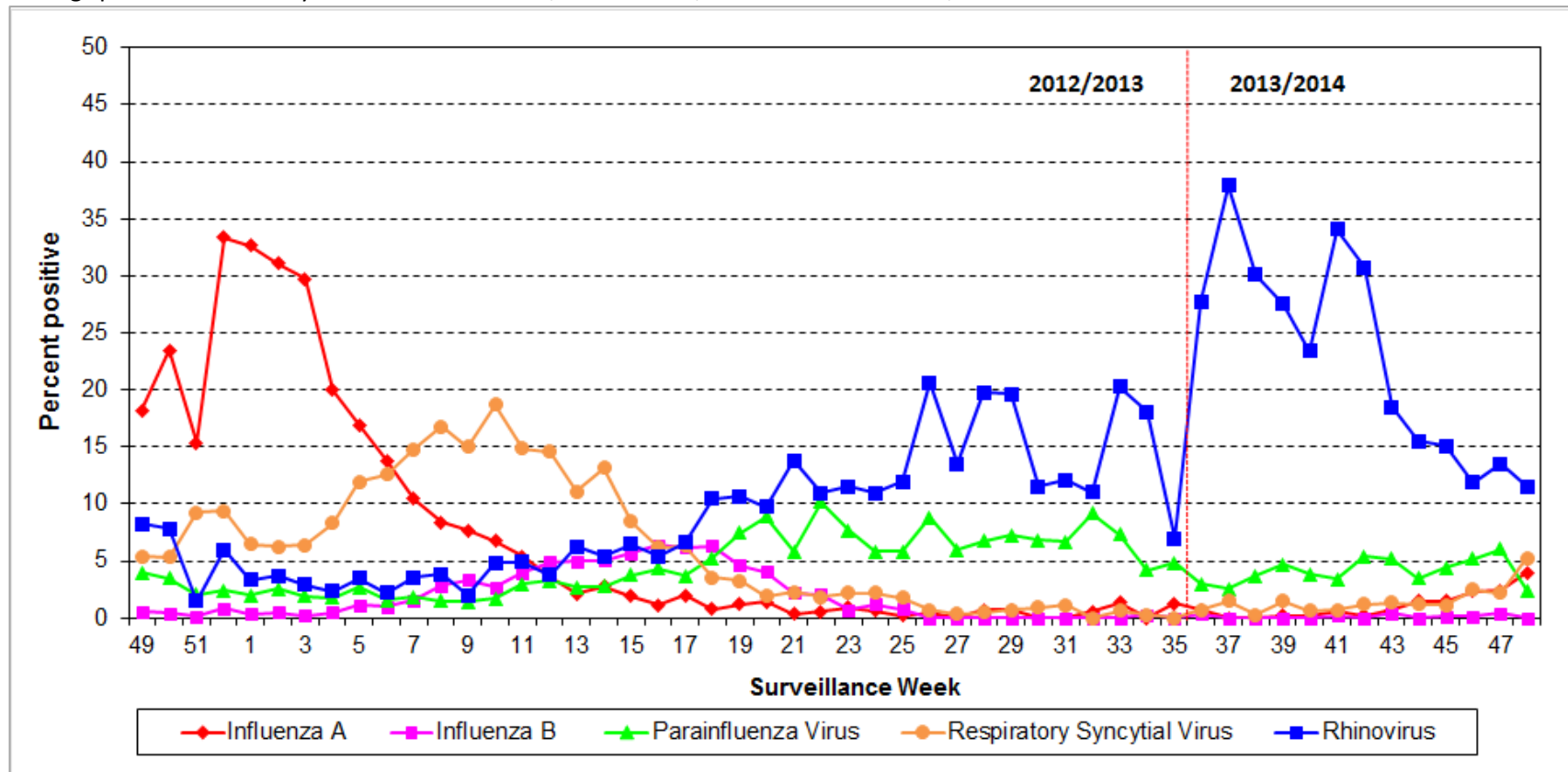
Health Unit and Region	Influenza A				Influenza A & B	Influenza B	TOTAL
	(H1N1) pdm09	No Subtype/ Not Subtyped	Other [†]	H3			
Northwestern	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Thunder Bay District	0 (3)	2 (2)	0 (0)	0 (0)	0 (0)	0 (0)	2 (5)
TOTAL NORTH WEST	0 (3)	2 (2)	0 (0)	0 (0)	0 (0)	0 (0)	2 (5)
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)
City of Ottawa	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)	0 (0)	1 (2)
Eastern Ontario	2 (5)	2 (2)	0 (0)	0 (0)	0 (0)	0 (0)	4 (7)
Hastings & Prince Edward Counties	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Kingston, Frontenac, Lennox & Addington	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)
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	2 (6)	3 (4)	0 (0)	0 (0)	0 (0)	0 (0)	5 (10)
Durham Region	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)
Haliburton, Kawartha, Pine Ridge	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Peel Region	1 (4)	1 (2)	0 (0)	0 (4)	0 (0)	0 (4)	2 (14)
Peterborough County-City	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Simcoe Muskoka District	2 (3)	1 (1)	0 (0)	0 (0)	0 (0)	0 (1)	3 (5)
York Region	0 (1)	0 (0)	0 (0)	0 (1)	0 (0)	1 (1)	1 (3)
TOTAL CENTRAL EAST	3 (8)	2 (4)	0 (0)	0 (5)	0 (0)	1 (6)	6 (23)
Toronto	0 (11)	4 (11)	0 (0)	8 (19)	0 (0)	0 (3)	12 (44)
TOTAL TORONTO	0 (11)	4 (11)	0 (0)	8 (19)	0 (0)	0 (3)	12 (44)
Chatham-Kent	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)	0 (1)
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)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)
Lambton County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Middlesex-London	1 (1)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	1 (2)
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 (2)	0 (2)
Windsor-Essex County	1 (9)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (9)
TOTAL SOUTHWEST	2 (10)	1 (2)	0 (0)	0 (0)	0 (0)	0 (3)	3 (15)
Brant County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
City Of Hamilton	0 (1)	1 (2)	0 (0)	0 (3)	0 (0)	1 (1)	2 (7)
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	1 (3)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	2 (4)
Waterloo Region	0 (3)	1 (1)	0 (0)	0 (1)	0 (0)	0 (0)	1 (5)
Wellington-Dufferin-Guelph	1 (3)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (3)
TOTAL CENTRAL WEST	2 (10)	3 (4)	0 (0)	0 (4)	0 (0)	1 (1)	6 (19)
TOTAL ONTARIO	9 (48)	15 (27)	0 (0)	8 (28)	0 (0)	2 (13)	34 (116)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/12/04].

* The cumulative count indicated in brackets includes laboratory-confirmed cases with an episode date between September 1, 2013 and the last day of the current surveillance week.

[†] The 'Other' influenza A category includes indeterminate, untypeable and other subtypes.

Figure 3. Percentage of respiratory viral pathogens (influenza A, influenza B, parainfluenza virus, respiratory syncytial virus, and rhinovirus) detected among specimens tested by all methods: Ontario, December 2, 2012 to November 30, 2013



Source: These data have been obtained from the Public Health Agency of Canada's (PHAC) Centre for Immunization and Respiratory Infectious Diseases (CIRID) respiratory virus detection tables as of 11:36 a.m. on December 04, 2013; they are based on data submitted to PHAC from 16 laboratories in Ontario.

Notes:

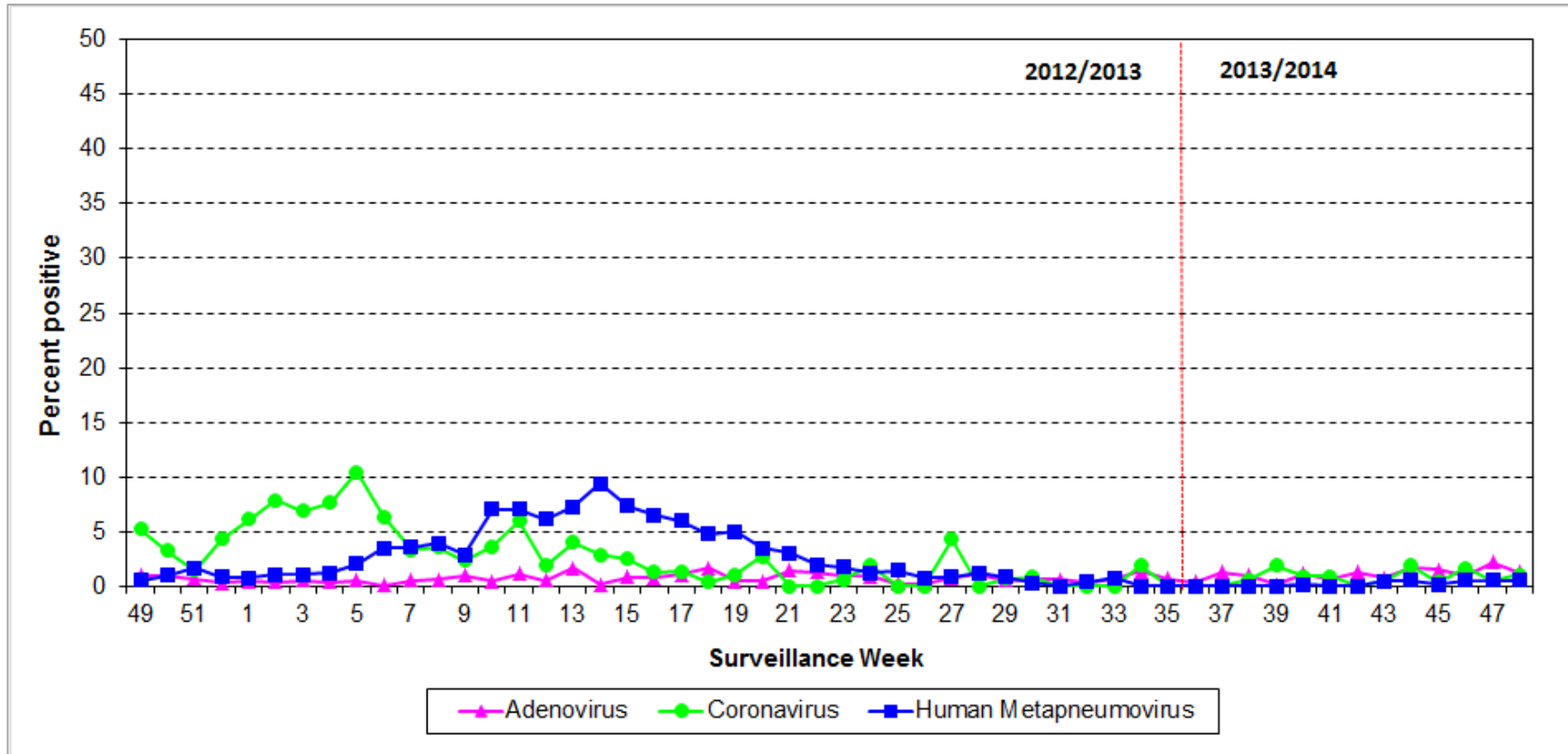
The numbers reported in this figure represent results submitted to the CIRID by 16 laboratories in Ontario, including 11 Public Health Ontario Laboratories, as well as five hospital-based laboratories.

Results above are assigned to a particular surveillance week based on when test results are reported to PHAC; these data are not updated when results are submitted late for previous surveillance weeks.

These data represent the number of specimens tested, which may not necessarily correspond with the number of patients as more than one specimen may have been submitted per patient.

Cumulative numbers for the season to date are also available through FluWatch: <http://www.phac-aspc.gc.ca/fluwatch/>

Figure 4. Percentage of respiratory viral pathogens (adenovirus, coronavirus, and human metapneumovirus) detected among specimens tested by all methods: Ontario, December 2, 2012 to November 30, 2013



Source: These data have been obtained from the Public Health Agency of Canada's (PHAC) Centre for Immunization and Respiratory Infectious Diseases (CIRID) respiratory virus detection tables as of 11:36 a.m. on December 04, 2013; they are based on data submitted to PHAC from 16 laboratories in Ontario.

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Table 2. Number and percent positivity (in brackets) of respiratory specimens tested by all methods for influenza and other respiratory viruses: Ontario, week 48 and cumulative for the 2013-2014 season

Detected viruses	Current Surveillance Week			Cumulative for Season*		
	Number positive	Number tested	Percent positive	Number positive	Number tested	Percent positive
Influenza (All)	32	804	4.0%	126	9,362	1.3%
Influenza A	32	804	4.0%	114	9,362	1.2%
Influenza B	0	804	0.0%	12	9,362	0.1%
Parainfluenza virus	18	745	2.4%	352	8,360	4.2%
Adenovirus	10	745	1.3%	95	8,360	1.1%
Respiratory Syncytial Virus	39	745	5.2%	156	9,110	1.7%
Rhinovirus	15	130	11.5%	698	3,544	19.7%
Human metapneumovirus	4	715	0.6%	26	7,871	0.3%
Coronavirus	1	94	1.1%	24	2,705	0.9%

Source: These data have been obtained from the Public Health Agency of Canada's (PHAC) Centre for Immunization and Respiratory Infectious Diseases (CIRID) respiratory virus detection tables as of 11:36 a.m. on December 04, 2013; they are based on data submitted to PHAC from 16 laboratories in Ontario.

Notes:

*Cumulative numbers include counts from August 25, 2013 (surveillance week 35) because the PHAC includes week 35 as part of the 2013-2014 season.

The numbers reported in this table represent results submitted to the CIRID by 16 laboratories in Ontario, including 11 Public Health Ontario Laboratories, as well as five hospital-based laboratories.

The data in this table are based on the date on which test results are reported. Cumulative counts reported include late reports from previous weeks; however, the current week will not include data from laboratories that submit late reports. Therefore, weekly counts from previous weeks may not equal the cumulative count.

These data represent the number of specimens tested, which may not necessarily correspond with the number of patients as more than one specimen may have been submitted per patient.

Cumulative numbers for the season to date are also available through FluWatch: <http://www.phac-aspc.gc.ca/fluwatch/>

Table 3. Institutional respiratory infection outbreaks: Ontario, week 48 and total for the 2013-2014 season to date¹

Institutional Respiratory Infection Outbreaks		
New outbreaks (Week 48) ²	Number of outbreaks	Percentage (%) of total
Influenza A	0	0.0
Influenza B	0	0.0
Influenza A and B	0	0.0
Enterovirus/rhinovirus	1	20.0
Parainfluenza (All types)	0	0.0
Respiratory Syncytial Virus (RSV)	1	20.0
Combined outbreaks ³	0	0.0
Other organisms ⁴	0	0.0
No organism identified	3	60.0
TOTAL	5	100.0
Cumulative outbreaks (season to date) ¹	N	
Influenza A	3	2.0
Influenza B	0	0.0
Influenza A and B	0	0.0
Enterovirus/rhinovirus	95	62.1
Parainfluenza (All types)	11	7.2
Respiratory Syncytial Virus (RSV)	1	0.7
Combined outbreaks ³	3	2.0
Other organisms ⁴	2	1.3
No organism identified	38	24.8
TOTAL	153	100.0
Types of institutions for cumulative outbreaks		
Long-Term Care Homes	112	73.2
Hospitals	8	5.2
Retirement Homes	18	11.8
Other ⁵	0	0.0
Unknown	15	9.8
TOTAL	153	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/12/04].

Notes:

¹ Season to date includes all outbreaks in which the date of onset of illness for the first case associated with the outbreak occurred between September 1, 2013 (Week 36) and the current reporting week.

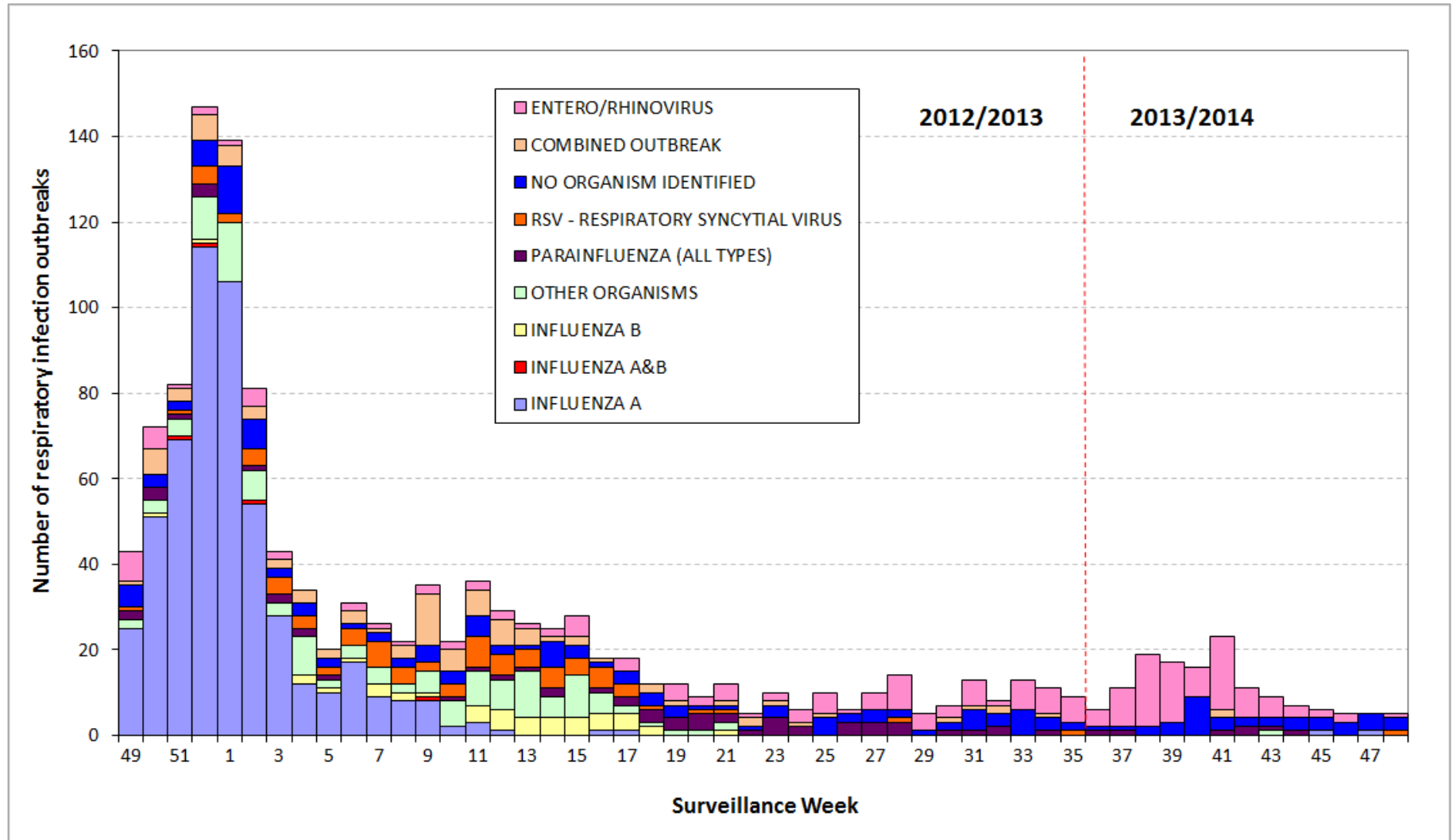
² New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded through iPHIS in the current surveillance period; i.e. November 24, 2013–November 30, 2013 (Week 48).

³ Combined outbreaks include outbreaks in which more than one non-influenza organism has been identified (e.g. RSV, parainfluenza, rhinovirus, etc.).

⁴ Other organisms include outbreaks involving other aetiological agents, such as human metapneumovirus, adenovirus, and coronavirus.

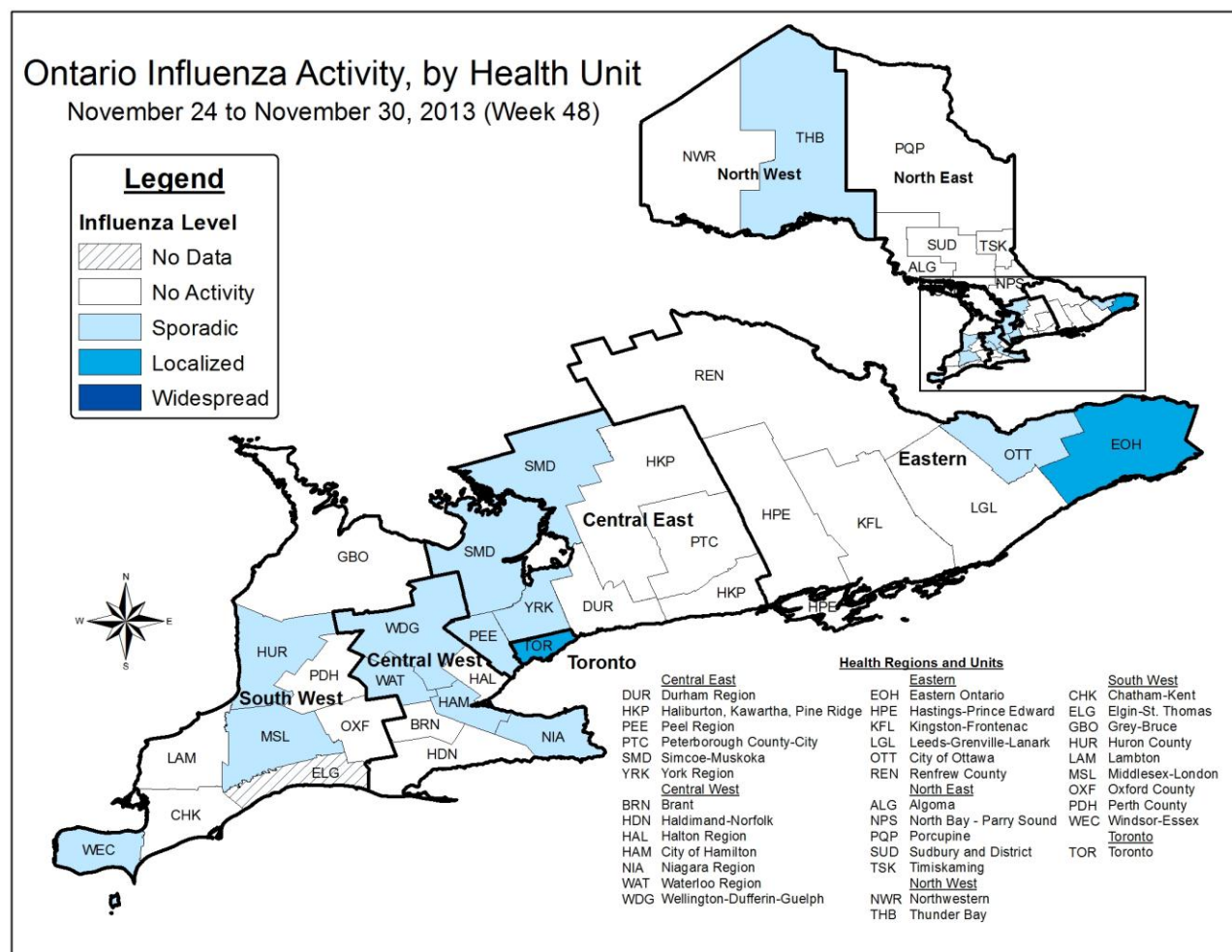
⁵ Other types of institutions include: correctional facilities, group homes, shelters, and facilities operating under the developmental services act. Note that school-based respiratory outbreaks are not captured in this table.

Figure 5. Institutional respiratory infection outbreaks by week of illness onset in the first case: Ontario, December 2, 2012 to November 30, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/12/04].

Figure 6. Influenza activity levels by health unit: Ontario, week 48, 2013



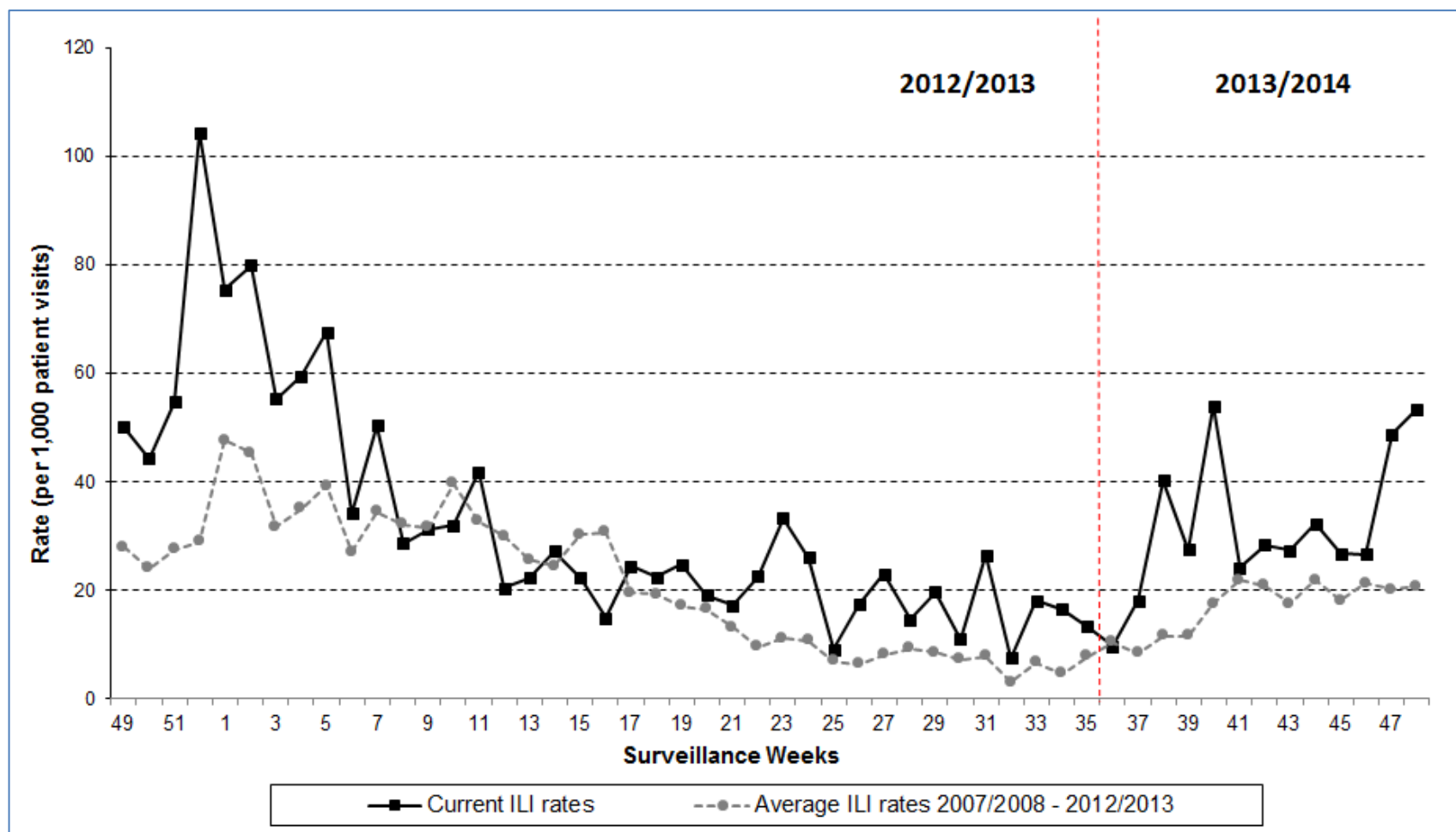
Source: Public Health Ontario [Provincial Influenza Activity Report (Appendix C) Database]

Notes:

Influenza activity levels are assigned by local public health units and reported to Public Health Ontario by the Tuesday following the end of each surveillance week at 4:00 p.m. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory-confirmed institutional respiratory infection outbreaks. Please click [here](#) for [detailed definitions for the 2013-2014 season](#).

Activity levels reported for a particular surveillance week may not necessarily correspond to the number of new outbreaks reported in the same week in Table 3 because ongoing outbreaks from previous weeks, as well as laboratory confirmed outbreaks in schools, may be included in the assessment of the activity level.

Figure 7. Influenza-like-illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinels by surveillance week compared to historical average (2007/2008 - 2012/2013 seasons): Ontario, December 2, 2012 to November 30, 2013



Source: Public Health Agency of Canada, FluWatch ILI sentinel surveillance reporting

Notes:

ILI consultations from sentinels are reported to Public Health Agency of Canada. Due to small numbers of sentinel sites currently reporting, readers are advised to review overall trends and place less emphasis on week-to-week fluctuations.

Ontario average ILI rates include data from the 2007-2008 to the 2012-2013 seasons, excluding ILI rates during the time period of the influenza pandemic in Ontario (April 2009 to January 2010) due to the incomparability of those rates to a regular influenza season.

Table 4. Influenza-like illness (ILI) consultation rate (per 1,000 patient visits) by age group as reported by sentinel sites: Ontario, week 48

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of Patients with ILI	2	4	32	16	0	54
Number of Total Consultations	45	76	585	304	0	1010
<i>ILI Consultation Rate (per 1,000 patient visits)</i>	44.4	52.6	54.7	52.6	0.0	53.5

Source: Public Health Agency of Canada, FluWatch ILI sentinel surveillance reporting

Notes:

Sentinel information is reported to the Public Health Agency of Canada; 39 sentinel physician sites reported in week 48. ILI consultation rates presented in Table 4 should be interpreted with caution, as small numbers of sentinel sites reporting can result in unstable ILI rates.

APPENDIX**Table I.** Strain characterization completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2013 to December 5, 2013

Influenza strains	Ontario	Canada
Influenza A (H3N2) A/Texas/50/2012-like	5	6
Influenza A (H1N1)pdm09 A/California/07/2009-like	26	35
Influenza B B/Brisbane/60/2008-like	1	5
Influenza B B/Massachusetts/02/2012-like	8	11

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

Notes:

The influenza strains recommended by the World Health Organization (WHO) for the Northern Hemisphere vaccine for the [2013-2014 season](#) are: A/California/7/2009-like (A H1N1pdm09-like virus); A/Texas/50/2012-like virus; and B/Massachusetts/02/2012-like virus (Yamagata lineage).

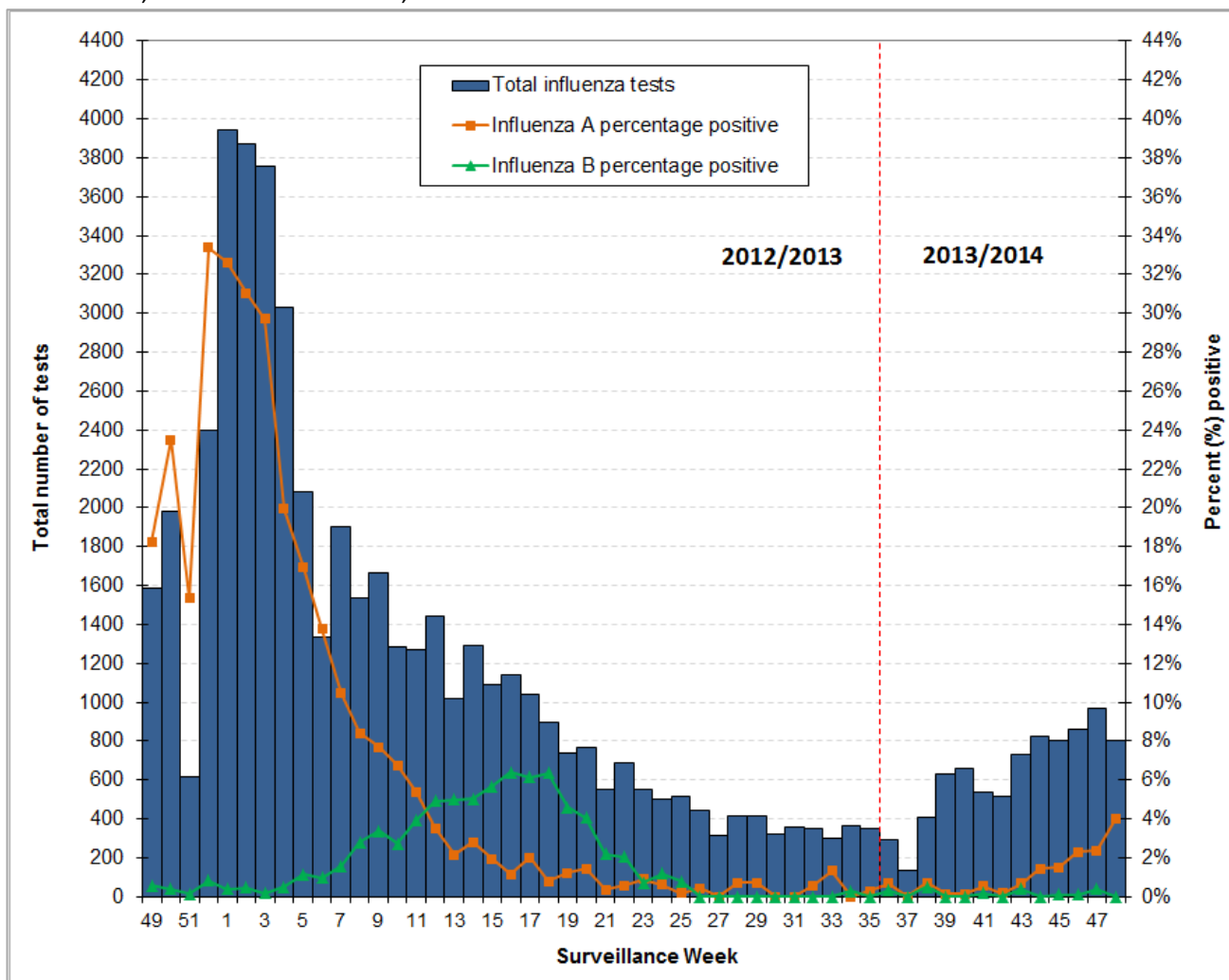
Table II. Amantadine, oseltamivir and zanamivir susceptibility assays completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2013 to December 5, 2013

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	7	0	0	5	0	6	0	5	0	6
Influenza A (H1N1)pdm09	9	0	20	0	0	18	0	27	0	16	0	25
Influenza B	NA	NA	NA	NA	0	8	0	14	0	8	0	14

(R = Resistant, S = Susceptible, NA = Not Applicable)

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

Figure I. Total number of influenza tests performed and percent of positive tests by report week: Ontario, December 2, 2012 to November 30, 2013



Source: These data have been obtained from the Public Health Agency of Canada's (PHAC) Centre for Immunization and Respiratory Infectious Diseases (CIRID) respiratory virus detection tables as of 11:36 a.m. on December 04, 2013; they are based on data submitted to PHAC from 16 laboratories in Ontario.

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