

Ontario Respiratory Virus Bulletin | 2013-2014

SURVEILLANCE WEEK 49 (December 1, 2013 – December 7, 2013)

This issue of the Ontario Respiratory Virus Bulletin provides information on the surveillance period from December 1, 2013 to December 7, 2013 (Week 49). 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 ^{1,2}	Higher	There were 66 influenza cases (65 influenza A and 1 influenza B) reported ¹ in week 49 (Table 1), which was nearly double the number of influenza cases reported in week 48 (32 influenza A and 2 influenza B). Percent positivity ² of laboratory tests for all influenza types in Ontario was 6.9% for week 49 (Table 2), which was higher than percent positivity in week 48 (4.0%).
Influenza outbreaks ³	Similar	No new influenza outbreaks were reported in week 49. There were six outbreaks for which no organism was reported (Table 3). There were also no influenza outbreaks reported in week 48.
Influenza activity levels reported by health units	Higher	Twenty health units reported 'sporadic' and two reported 'localized' levels of influenza activity in week 49. This is higher than the influenza activity in week 48, in which twelve health units reported 'sporadic' and two reported 'localized' levels of influenza activity.
OVERALL ASSESSMENT	Higher	Overall, the indicators show that influenza activity for week 49 was higher than week 48.
Measures of severity for influenza		
Hospitalizations and deaths among lab confirmed cases of influenza ¹	Higher	There were 23 hospitalized cases reported in week 49, which was higher than the 8 hospitalized cases reported in week 48. There was one death reported in week 49.

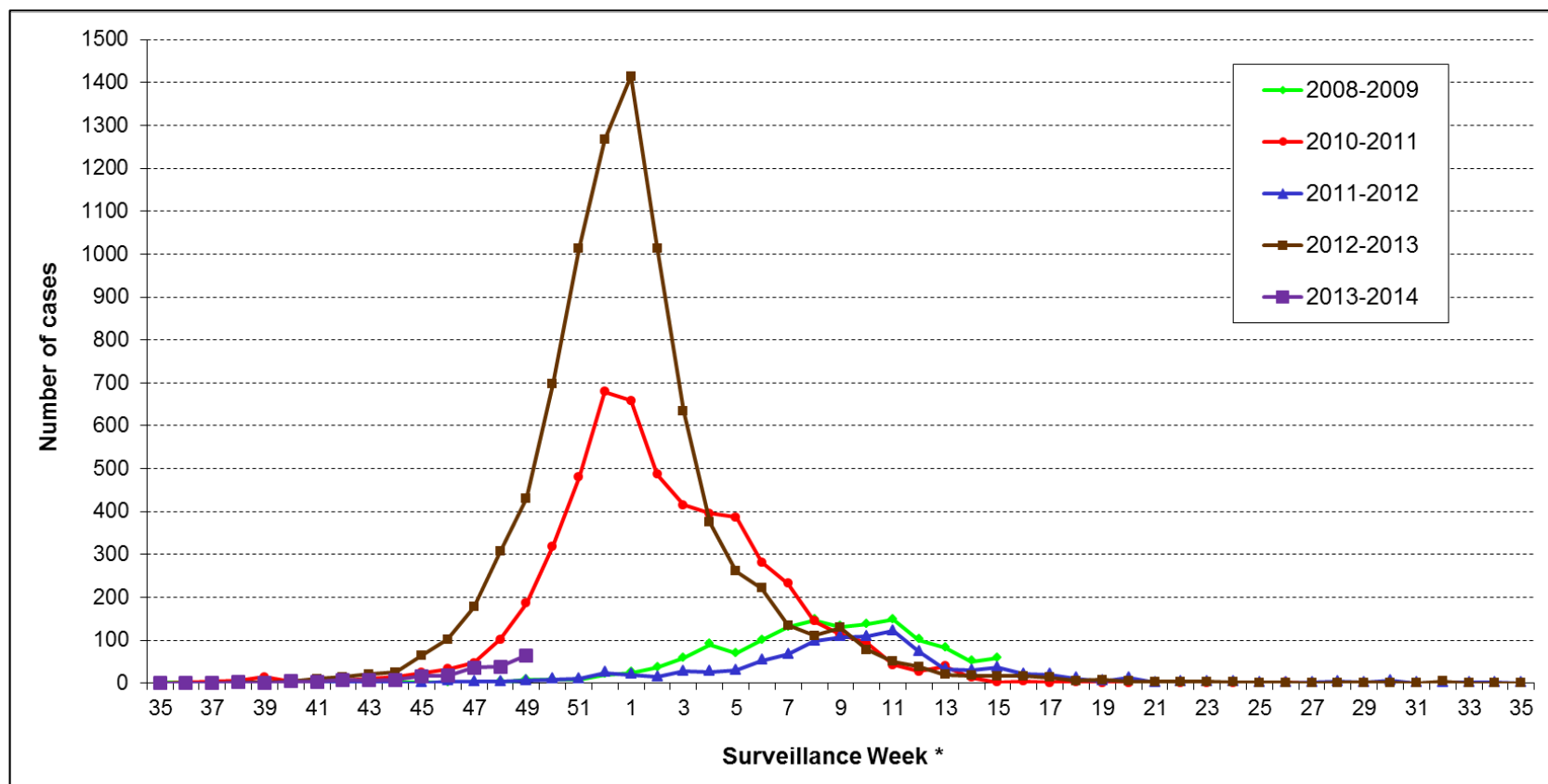
1. The number of **reported** cases needs to be interpreted with caution because there is a lag between the onset of illness, hospital admission or death and when this information is reported to public health. 2. Positivity among specimens submitted for testing to Ontario laboratories reporting to the 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, however influenza A activity, primarily the H1N1 subtype, has recently started to increase.
 - ‘Sporadic’ influenza activity during week 49 has been reported from the majority of health units across the province and at least one health unit within each health unit region (Figure 6).
 - ‘Localized’ influenza activity during week 49 was reported in Eastern Ontario and Toronto health units (Figure 6).
 - In week 49 there were a total of six new institutional respiratory outbreaks, none of which were reported as influenza (Table 3).
 - The percent positivity* for influenza was 6.9% of respiratory samples testing positive for influenza A in week 49; 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 182 influenza cases have been reported for the 2013-2014 surveillance season to date. Among these cases, the majority (92.3%, 168/182) were influenza A (Table 1).
- Among all other circulating respiratory viruses¹ in week 49 (Table 2):
 - Rhinovirus had the highest percent positivity (15.5%), which was slightly higher compared to the previous week (11.5%)
 - Respiratory syncytial virus had the second highest percent positivity (6.8%), which was slightly higher compared to the previous week (5.2%)
- In the season to date, 67 hospitalizations and one death have been reported among laboratory-confirmed influenza cases. The majority of hospitalizations have occurred among influenza A cases (94.0%, 63/67).
- In week 49, the influenza-like illness (ILI) consultation rate was 17.1 per 1,000 patient visits².
Please note: Since this rate was derived from a very low number of reporting sentinels (n=32), we have removed Table 4. *Average influenza-like illness (ILI) consultation rate by age group as reported by sentinels* in this edition of the bulletin, and we have excluded this information from the *Assessment of Influenza Activity in Ontario* table on page 1.

¹ 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). ² ILI consultation rates should be interpreted with caution as small numbers of sentinel sites reporting can result in unstable ILI rates.

Figure 1. Number of reported confirmed cases of **influenza A** by surveillance week: Ontario, September 1, 2008 to December 7, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/12/11].

Notes:

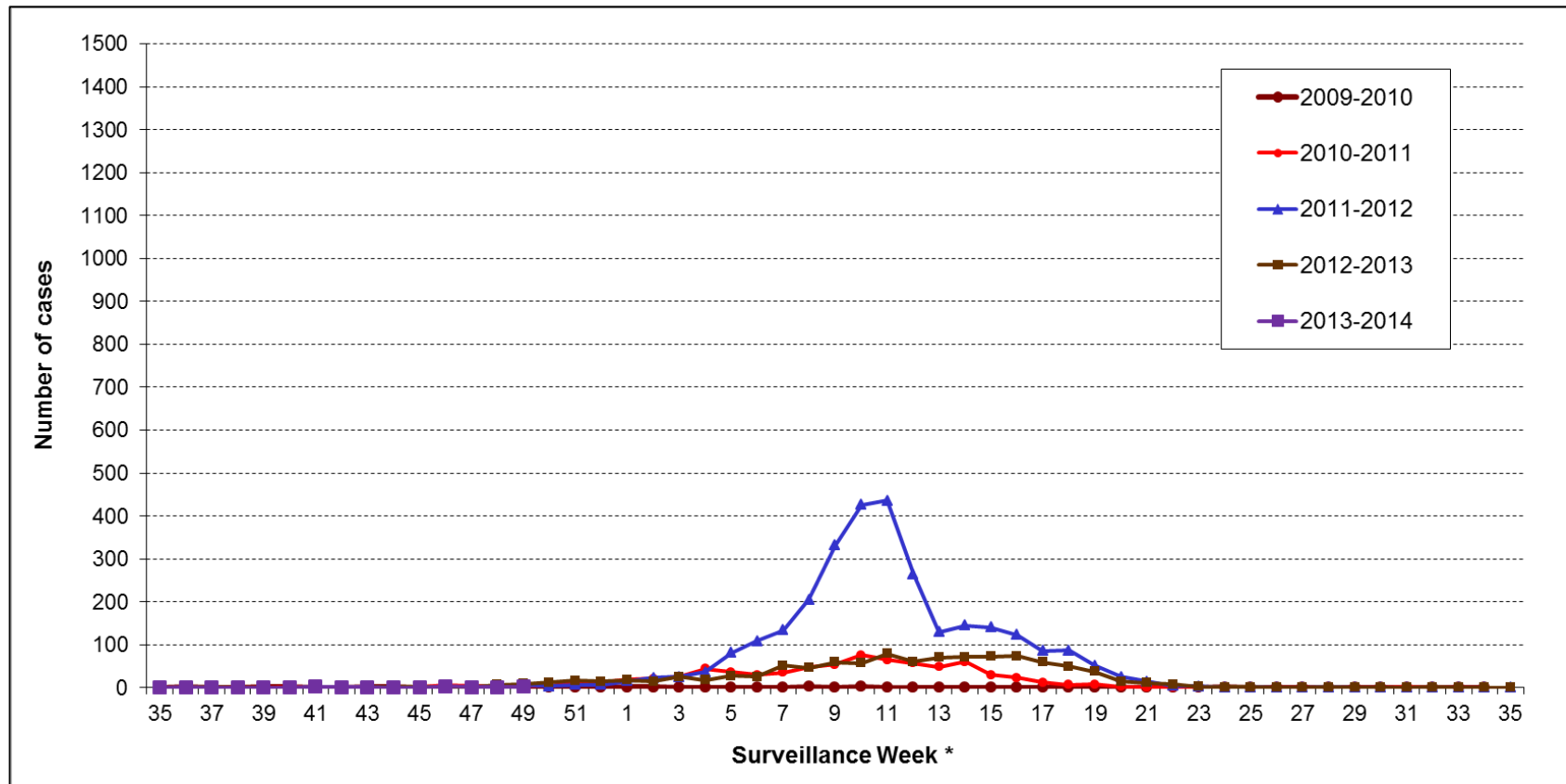
Interpret most recent case counts for the current season with caution due to reporting lags.

*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 December 7, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/12/11].

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 49 and cumulative* (in brackets) for the 2013-2014 season

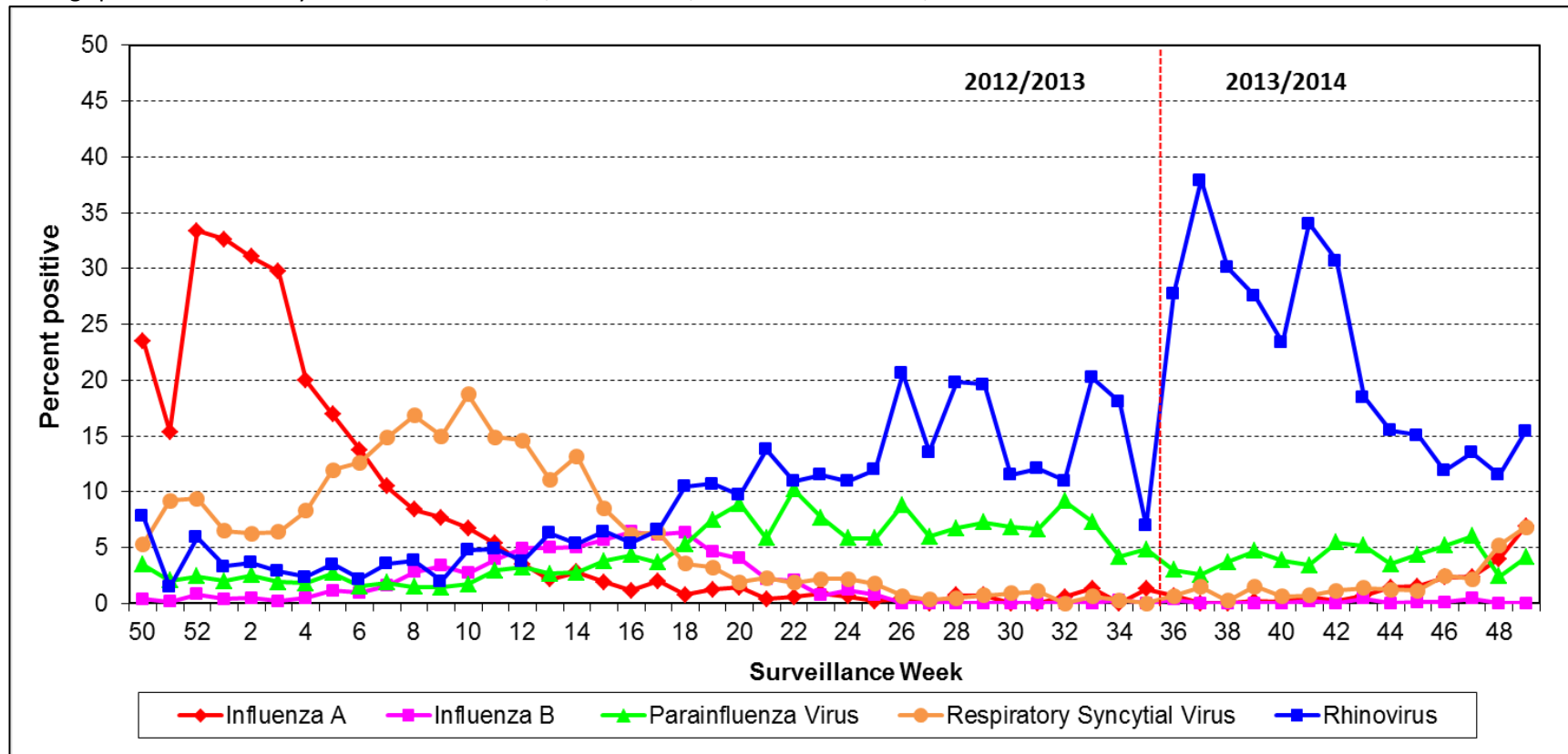
Health Unit and Region	Influenza A				Influenza A & B	Influenza B	TOTAL
	(H1N1) pdm09	No Subtype/ Not Subtyped	Other [†]	H3			
Northwestern	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Thunder Bay District	3 (6)	0 (2)	0 (0)	0 (0)	0 (0)	0 (0)	3 (8)
TOTAL NORTH WEST	3 (6)	0 (2)	0 (0)	0 (0)	0 (0)	0 (0)	3 (8)
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 (0)	1 (1)
Porcupine	0 (0)	2 (2)	0 (0)	0 (0)	0 (0)	0 (0)	2 (2)
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)	3 (3)	0 (0)	0 (0)	0 (0)	0 (0)	3 (3)
City of Ottawa	0 (0)	3 (5)	0 (0)	0 (0)	0 (0)	0 (0)	3 (5)
Eastern Ontario	0 (5)	1 (3)	0 (0)	0 (0)	0 (0)	0 (0)	1 (8)
Hastings & Prince Edward Counties	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Kingston, Frontenac, Lennox & Addington	0 (1)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	1 (2)
Leeds, Grenville And Lanark District	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)
Renfrew County And District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
TOTAL EASTERN	1 (7)	5 (9)	0 (0)	0 (0)	0 (0)	0 (0)	6 (16)
Durham Region	1 (1)	2 (3)	0 (0)	0 (0)	0 (0)	0 (0)	3 (4)
Haliburton, Kawartha, Pine Ridge	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Peel Region	2 (6)	3 (5)	0 (0)	1 (5)	0 (0)	0 (4)	6 (20)
Peterborough County-City	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Simcoe Muskoka District	5 (9)	1 (1)	0 (0)	0 (0)	0 (0)	0 (1)	6 (11)
York Region	1 (2)	1 (1)	0 (0)	0 (1)	0 (0)	0 (1)	2 (5)
TOTAL CENTRAL EAST	9 (18)	7 (10)	0 (0)	1 (6)	0 (0)	0 (6)	17 (40)
Toronto	7 (19)	6 (16)	0 (0)	5 (24)	0 (0)	0 (3)	18 (62)
TOTAL TORONTO	7 (19)	6 (16)	0 (0)	5 (24)	0 (0)	0 (3)	18 (62)
Chatham-Kent	2 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)	2 (3)
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 (1)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	1 (2)
Lambton County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Middlesex-London	2 (3)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	2 (4)
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	2 (11)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	3 (12)
TOTAL SOUTHWEST	6 (17)	2 (3)	0 (0)	0 (0)	0 (0)	0 (3)	8 (23)
Brant County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
City Of Hamilton	0 (1)	3 (5)	0 (0)	0 (3)	0 (0)	1 (2)	4 (11)
Haldimand-Norfolk	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)	0 (0)	1 (1)
Halton Region	0 (0)	2 (2)	0 (0)	0 (0)	0 (0)	0 (0)	2 (2)
Niagara Region	1 (4)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	1 (5)
Waterloo Region	0 (3)	1 (2)	0 (0)	1 (2)	0 (0)	0 (0)	2 (7)
Wellington-Dufferin-Guelph	1 (4)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (4)
TOTAL CENTRAL WEST	2 (12)	6 (10)	0 (0)	2 (6)	0 (0)	1 (2)	11 (30)
TOTAL ONTARIO	28 (79)	29 (53)	0 (0)	8 (36)	0 (0)	1 (14)	66 (182)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/12/11].

* 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 9, 2012 to December 7, 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 December 11, 2013; they are based on data submitted to PHAC from 16 laboratories in Ontario.

Notes:

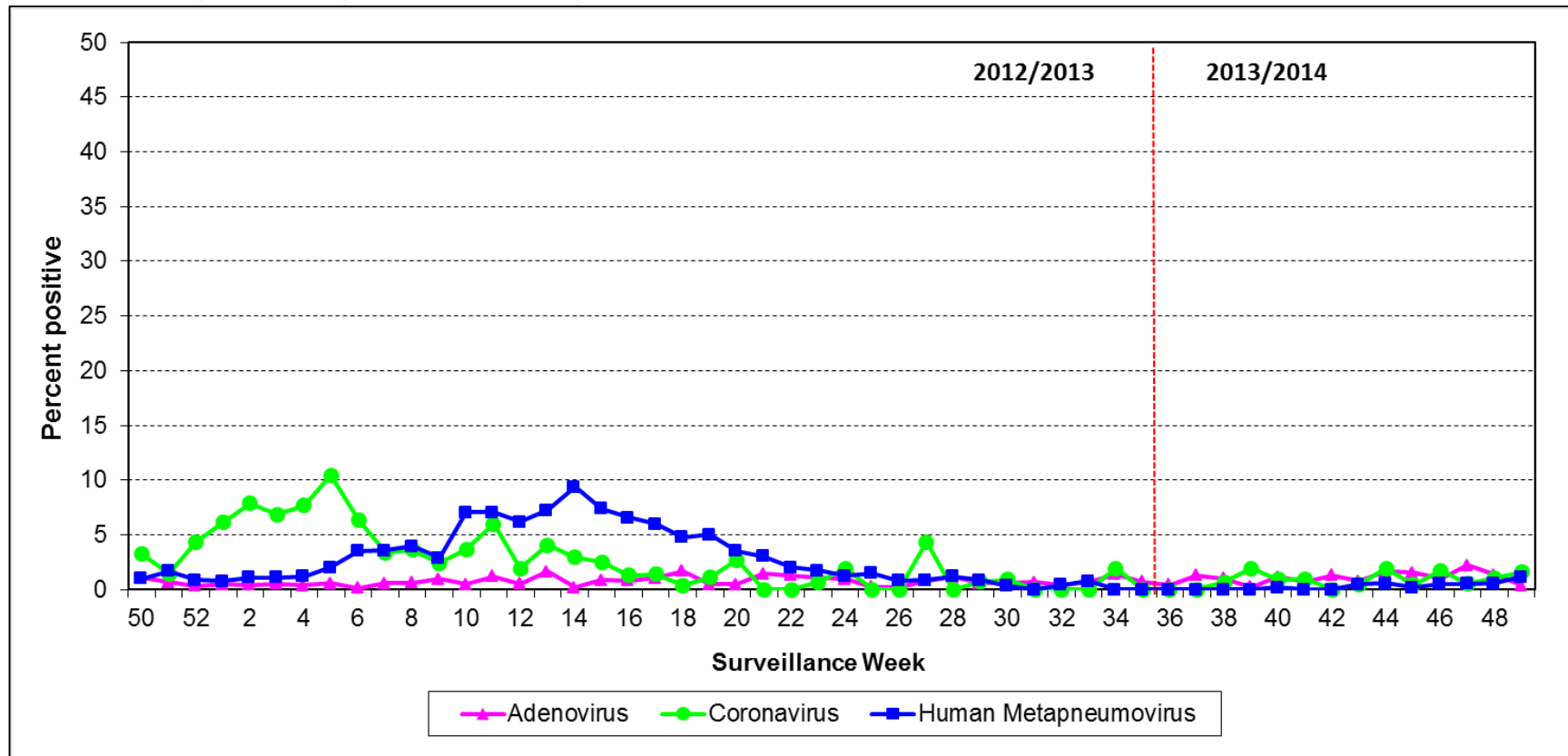
The numbers reported in this figure represent results submitted to the CIRID by 16 laboratories in Ontario, including 11 Public Health Ontario Laboratories and five hospital-based laboratories.

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 9, 2012 to December 7, 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 12:04 p.m. on December 11, 2013; they are based on data submitted to PHAC from 16 laboratories in Ontario.

Notes:

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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 49 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)	72	1,042	6.9%	205	10,999	1.9%
Influenza A	72	1,042	6.9%	193	10,999	1.8%
Influenza B	0	1,042	0.0%	12	10,999	0.1%
Parainfluenza virus	33	799	4.1%	395	9,642	4.1%
Adenovirus	3	799	0.4%	105	9,642	1.1%
Respiratory syncytial virus	67	984	6.8%	233	10,688	2.2%
Rhinovirus	26	168	15.5%	758	4,196	18.1%
Human metapneumovirus	9	769	1.2%	39	9,123	0.4%
Coronavirus	2	127	1.6%	26	2,946	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 12:04 p.m. on December 11, 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 and 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 49 and total for the 2013-2014 season to date¹

Institutional Respiratory Infection Outbreaks		
New outbreaks (Week 49) 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	0	0.0
Parainfluenza (All types)	0	0.0
Respiratory Syncytial Virus (RSV)	0	0.0
Combined outbreaks ³	0	0.0
Other organisms ⁴	0	0.0
No organism identified	6	100.0
TOTAL	6	100.0
Cumulative outbreaks (season to date) ¹	N	
Influenza A	3	1.9
Influenza B	0	0.0
Influenza A and B	0	0.0
Enterovirus/rhinovirus	96	59.3
Parainfluenza (All types)	12	7.4
Respiratory Syncytial Virus (RSV)	1	0.6
Combined outbreaks ³	3	1.9
Other organisms ⁴	3	1.9
No organism identified	44	27.2
TOTAL	162	100.0
Types of institutions for cumulative outbreaks		
Long-Term Care Homes	118	72.8
Hospitals	8	4.9
Retirement Homes	19	11.7
Other ⁵	0	0.0
Unknown	17	10.5
TOTAL	162	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/12/11].

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.

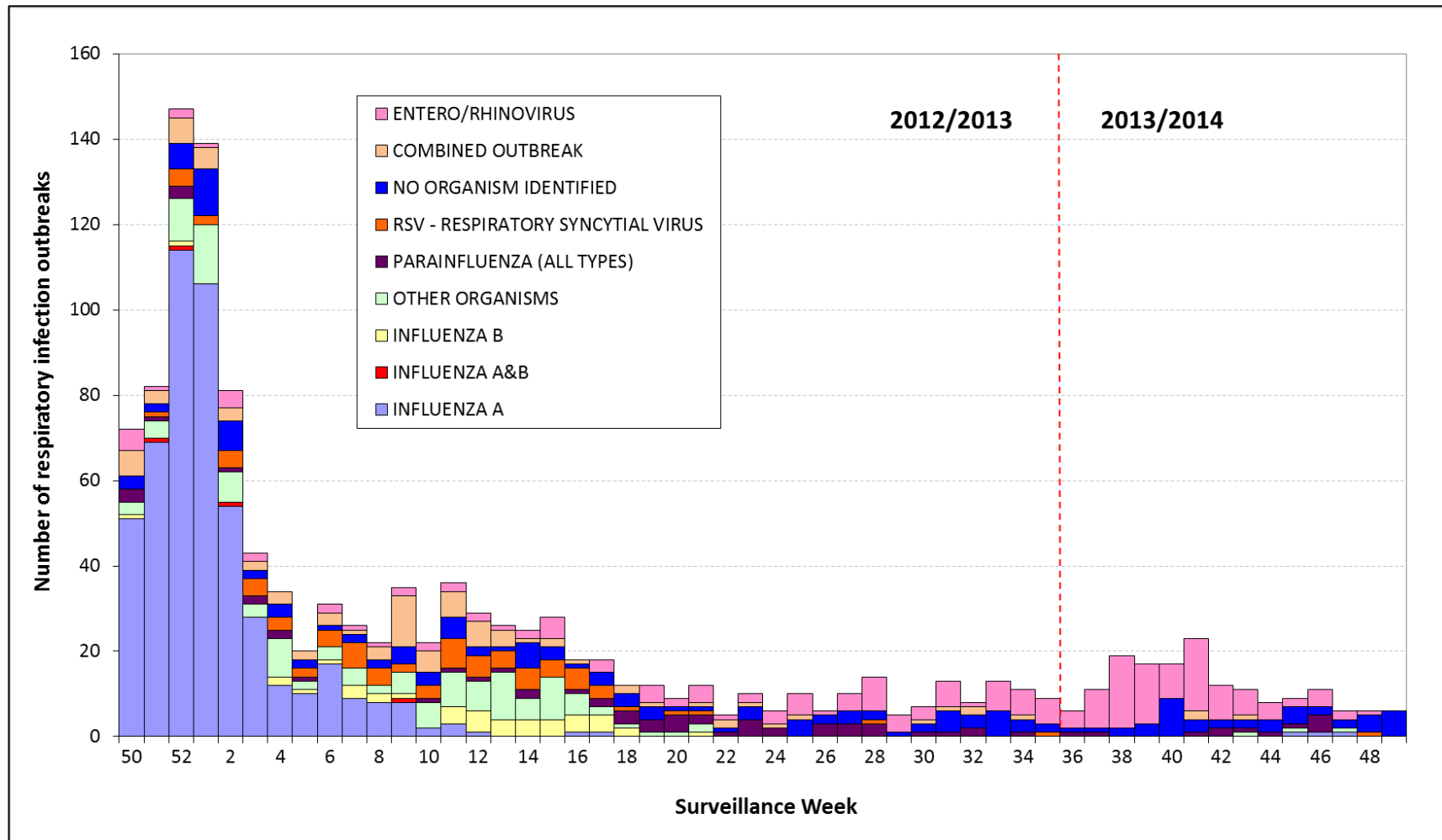
² New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded through iPHIS in the current surveillance period; i.e. December 1, 2013–December 7, 2013 (Week 49).

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.

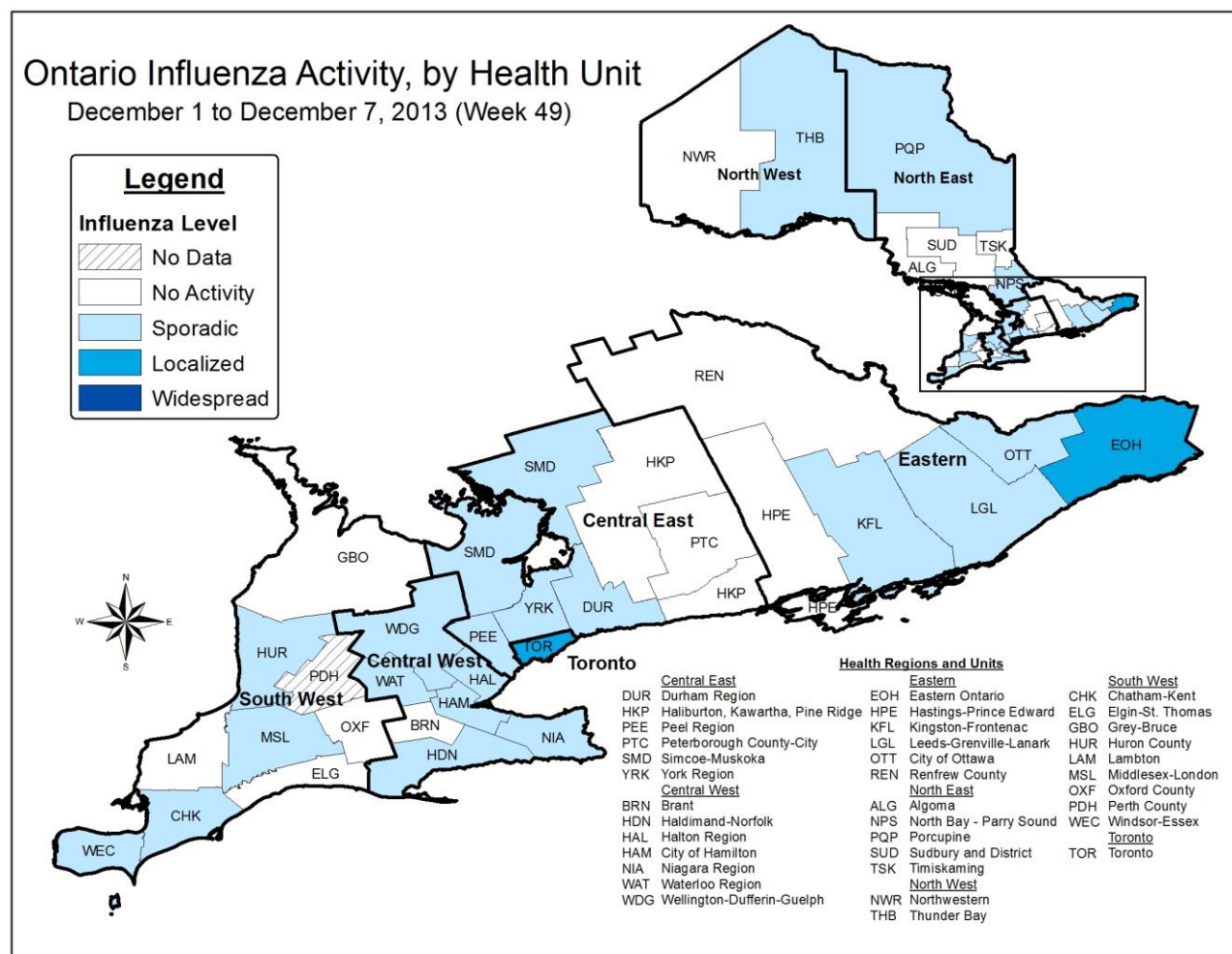
⁵ Other types of institutions include: correctional facilities, group homes, shelters, and facilities operating under the *Developmental Services Act*. Note that school-based respiratory outbreaks are not captured in this table.

Figure 5. Institutional respiratory infection outbreaks by week of illness onset in the first case: Ontario, December 9, 2012 to December 7, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/12/11].

Figure 6. Influenza activity levels by health unit: Ontario, week 49, 2013



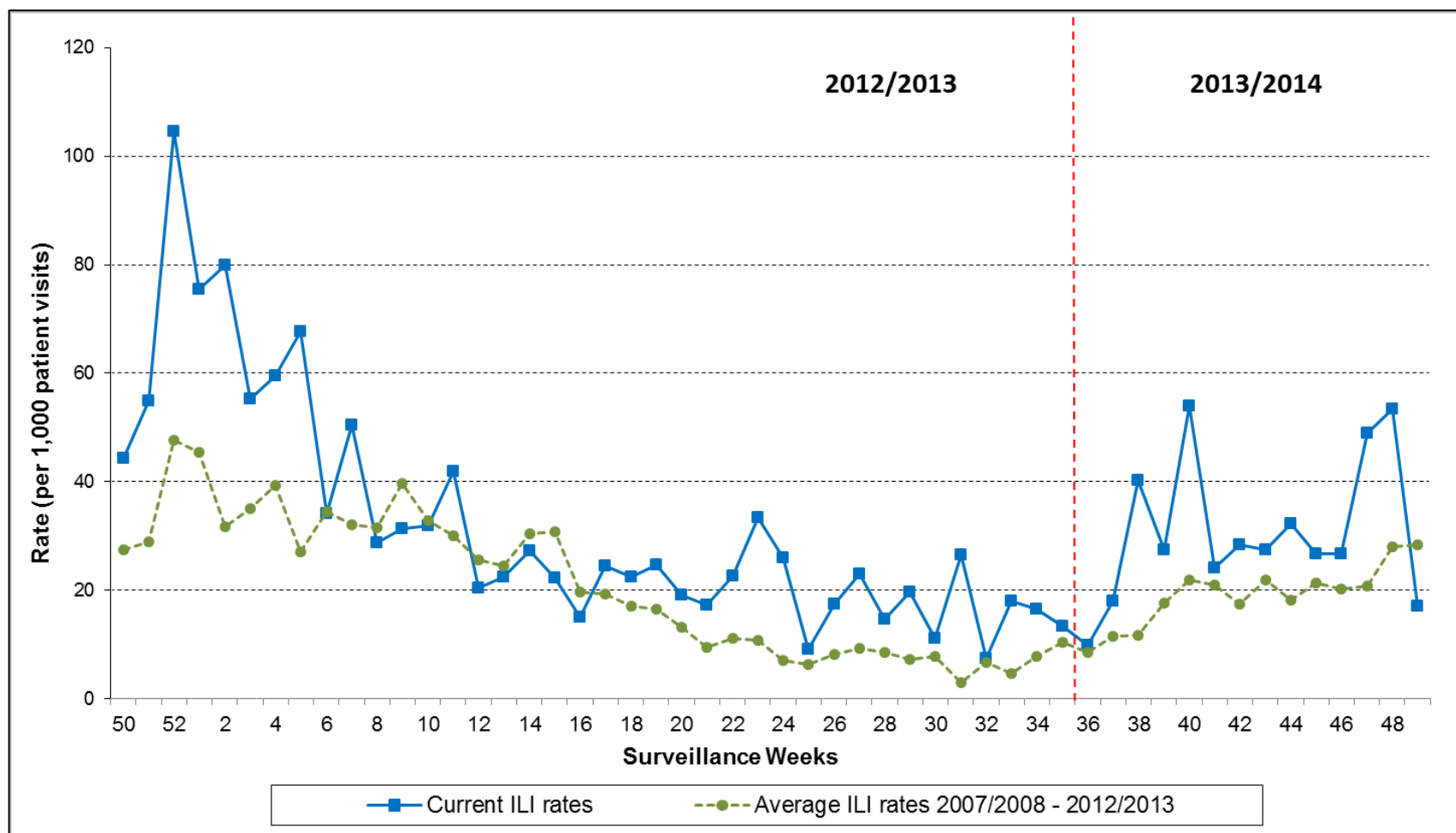
Source: Public Health Ontario [Provincial Influenza Activity Report (Appendix C) Database]

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 9, 2012 to December 7, 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.

APPENDIX**Table I.** Strain characterization completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2013 to December 12, 2013

Influenza strains	Ontario	Canada
Influenza A (H3N2) A/Texas/50/2012-like	11	12
Influenza A (H1N1)pdm09 A/California/07/2009-like	36	46
Influenza B B/Brisbane/60/2008-like	1	5
Influenza B B/Massachusetts/02/2012-like	10	19

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).

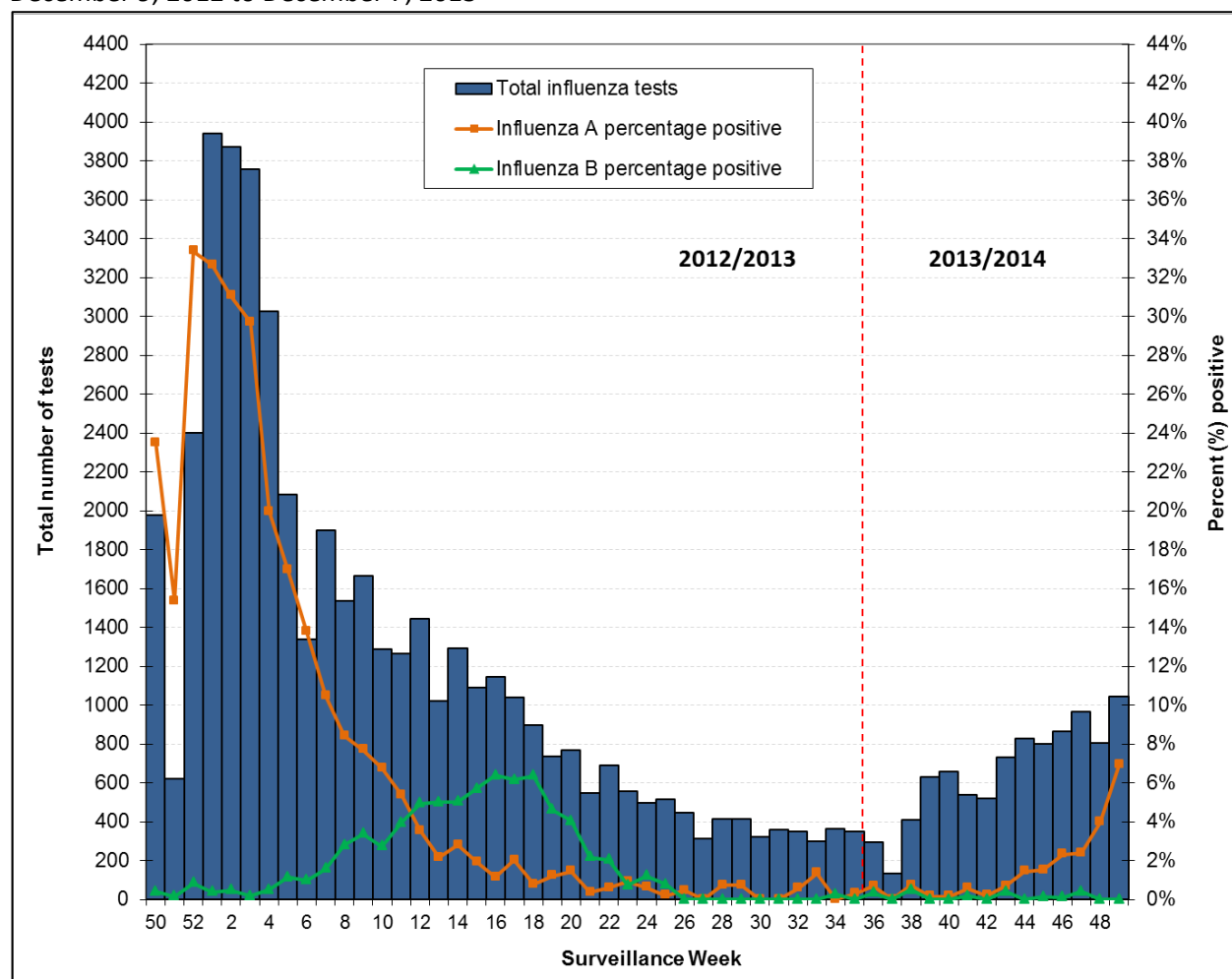
Table II. Amantadine, oseltamivir and zanamivir susceptibility assays completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2013 to December 12, 2013

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)	12	0	14	0	0	9	0	10	0	9	0	10
Influenza A (H1N1)pdm09	27	0	40	0	0	32	0	42	0	32	0	42
Influenza B	NA	NA	NA	NA	0	11	0	23	0	11	0	23

(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 9, 2012 to December 7, 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 December 11, 2013; they are based on data submitted to PHAC from 16 laboratories in Ontario.

Notes:

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