



Ontario Respiratory Virus Bulletin | 2013-2014

SURVEILLANCE WEEK 44 (October 27, 2013 – November 2, 2013)

This issue of the Ontario Respiratory Virus Bulletin provides information on the surveillance period from October 27, 2013 to November 2, 2013 (Week 44). Weekly production of the Ontario Respiratory Virus Bulletin will continue until May, 2014.

Please note that Public Health Ontario (PHO) is now publishing expanded versions of the Ontario Respiratory Virus Bulletin each week. This week's issue is the first expanded bulletin for the season. PHO will produce this expanded version throughout the influenza season, until the spring of 2014.

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 nine influenza cases (eight influenza A and one influenza B) reported ¹ in week 44 (Table 1), which was higher than the number of influenza cases reported in week 43 (four influenza A and two influenza B cases). Percent positivity ² of laboratory tests for all influenza types in Ontario was 1.4% for week 44 (Table 2), which was slightly higher than the percent positivity in week 43 (1.1%).
Influenza outbreaks	Similar	No new influenza outbreaks were reported ³ in week 44. There were four outbreaks for which no aetiological agent was reported and one outbreak where Enterovirus/rhinovirus was reported as the aetiological agent (Table 3).
Influenza activity levels reported by health units	Higher	Six health units reported 'sporadic' levels of influenza activity in week 44, which is higher than influenza activity in week 43.
ILI consultation rate reported by sentinels	Slightly higher	The provincial influenza-like-illness (ILI) consultation rate ⁴ in week 44 (32.35/1,000 patient visits) was slightly higher than the rate in week 43 (27.38/1,000 patient visits).
OVERALL ASSESSMENT	Slightly higher	Overall, the indicators show that influenza activity for week 44 was higher compared to week 43.
Measures of severity for influenza		
Hospitalizations and deaths among lab confirmed cases of influenza	Similar	There were four hospitalized cases reported ¹ in week 44, which was the same as the number reported in week 43. No deaths have been reported thus far in the 2013-2014 season.

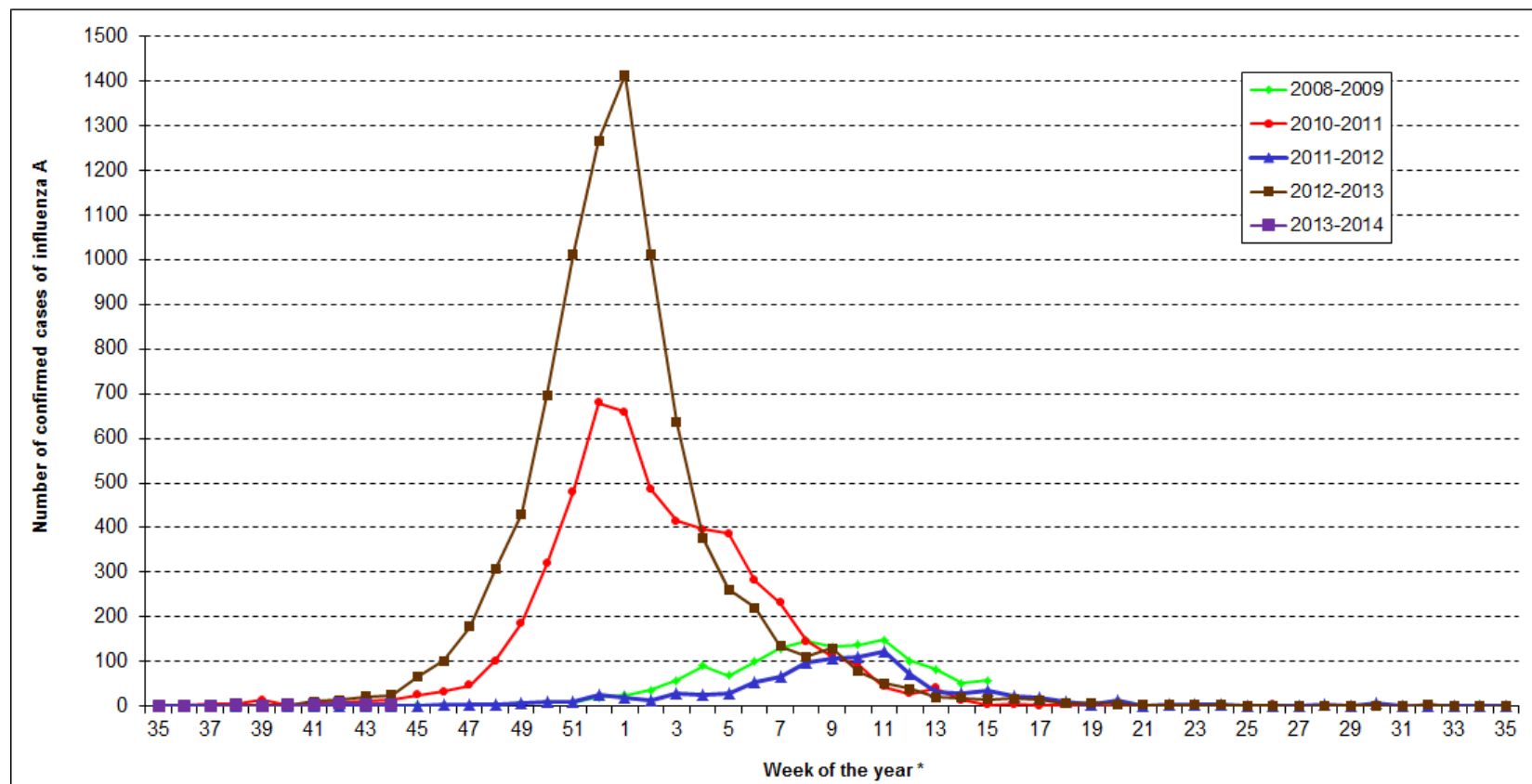
1. The number of **reported** cases needs to be interpreted with caution because there is a lag between the onset of illness, hospital admission or death and when this information is reported to public health. 2. Positivity among specimens submitted for testing to Ontario laboratories reporting to the 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 correspondingly.

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.
 - Influenza activity during week 44 primarily occurred in the Central East, Central West, and Toronto regions (Figure 6).
 - The percentage of tests* positive for influenza was relatively low; with the proportion of respiratory samples testing positive for influenza A now at 1.4%. (Table 2, Appendix: Figure I).
 - A total of 26 influenza cases have been reported for the 2013-2014 surveillance season to date. Among these cases, the majority (76.9%, 20/26) were influenza A (Table 1).
 - In the season to date, 13 hospitalizations and no deaths have been reported among laboratory-confirmed influenza cases. The majority of hospitalizations occurred in influenza A cases (76.9%).
- Among all other circulating respiratory viruses in week 44 (Table 2):
 - Enterovirus/rhinovirus had the highest percent positivity (15.5%), which was slightly lower compared to the previous week (18.5%)*
 - Parainfluenza had the second highest percent positivity (3.5%), which was slightly lower compared to the previous week (5.2%)*

* 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 2, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/11/06].

Notes:

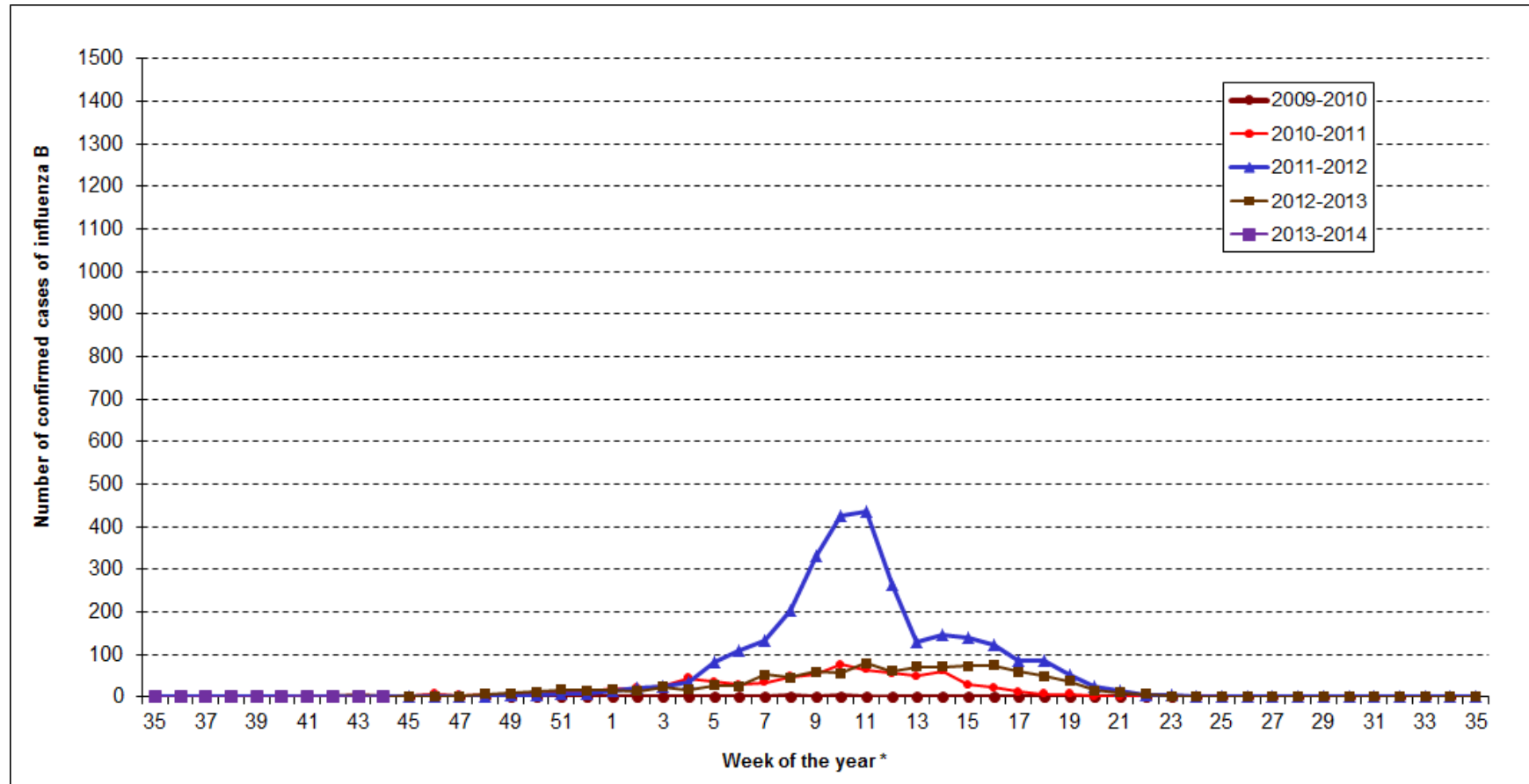
Interpret tail of 2013-2014 line with caution due to reporting lags.

* **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.

Cases after week 14 in the 2008-2009 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 2009-2010 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.

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 2, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/11/06].

Notes:

Interpret tail of 2013-2014 line 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.

Ontario Respiratory Virus Bulletin, 2013-2014 (Week 44: October 27, 2013 – November 2, 2013)

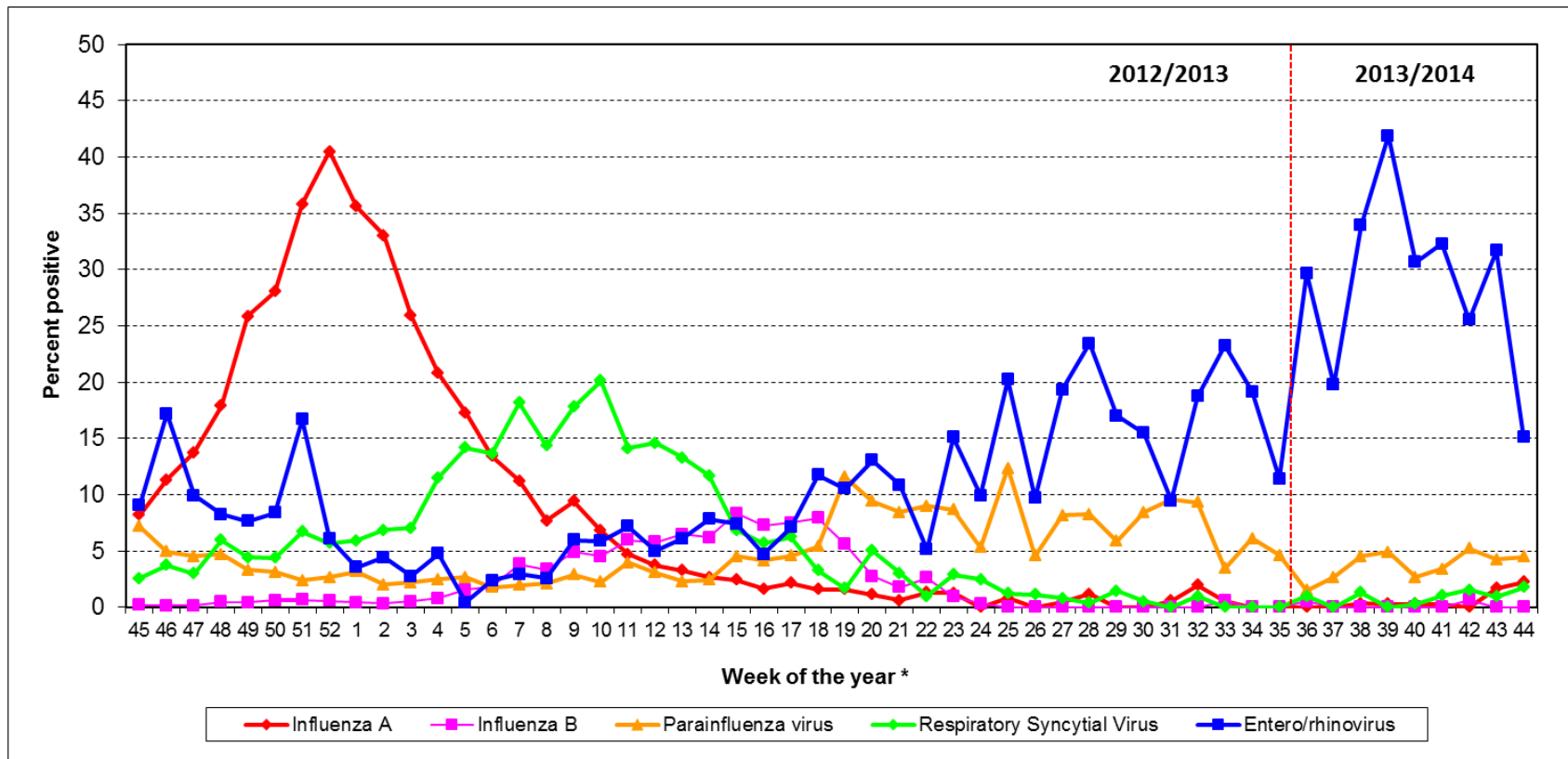
Table 1. Number of reported confirmed influenza cases by health unit and health region: Ontario, week 44 and cumulative (in brackets) for the 2013-2014 season

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 (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 (0)	0 (0)	0 (0)	0 (0)
	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 (0)	0 (0)	0 (0)	0 (0)
Central East	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	0 (0)	1 (1)	0 (0)	0 (1)	0 (0)	1 (3)	2 (5)
	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)	1 (1)	0 (0)	0 (0)	1 (1)
	TOTAL CENTRAL EAST	0 (0)	1 (2)	0 (0)	1 (2)	0 (0)	1 (3)	3 (7)
Toronto	Toronto	1 (3)	2 (3)	0 (0)	1 (4)	0 (0)	0 (2)	4 (12)
	TOTAL TORONTO	1 (3)	2 (3)	0 (0)	1 (4)	0 (0)	0 (2)	4 (12)
South West	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)	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 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)
	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 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)
	TOTAL SOUTHWEST	0 (1)	0 (1)	0 (0)	0 (0)	0 (0)	0 (1)	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)	0 (0)	0 (0)	0 (2)	0 (0)	0 (0)	0 (2)
	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)	1 (1)	0 (0)	0 (0)	1 (1)
	Wellington-Dufferin-Guelph	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)
	TOTAL CENTRAL WEST	1 (1)	0 (0)	0 (0)	1 (3)	0 (0)	0 (0)	2 (4)
	TOTAL ONTARIO	2 (5)	3 (6)	0 (0)	3 (9)	0 (0)	1 (6)	9 (26)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/11/06].

* 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, entero/rhinovirus) detected among specimens tested by all methods at PHOL, by surveillance week: Ontario, November 4, 2012 to November 2, 2013



Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/11/05].

Notes:

Interpret tail of all lines with caution due to reporting lags.

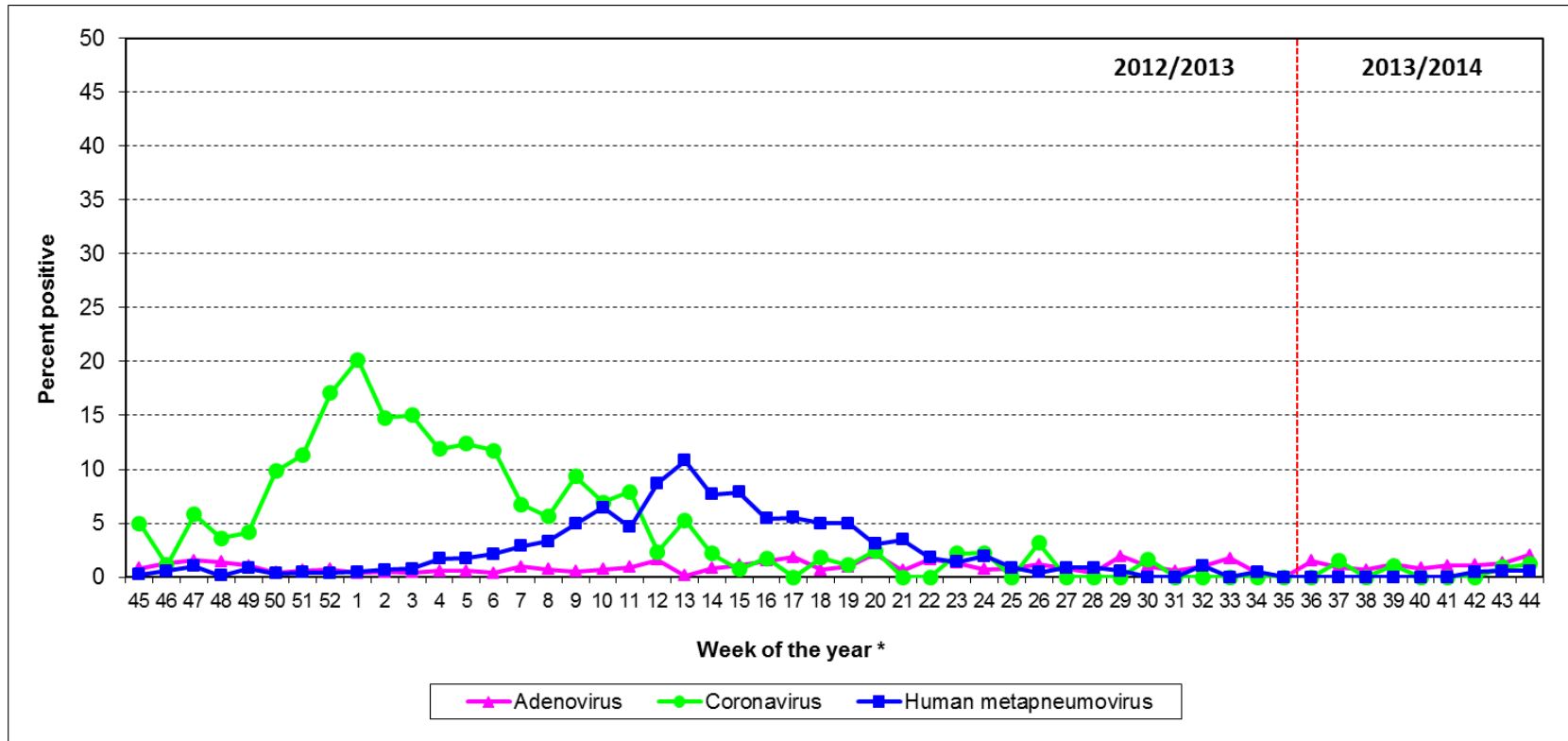
* **Specimens are assigned to a particular reporting week based on the sample collection date.** Because of the lag time from the date the specimens were collected to the date test results are confirmed (up to 10 days for negative results to be finalized), not all specimens collected during the current weeks are included and the percent positivity for the most current week is likely to change in subsequent reports.

The PHOL performs the majority of testing for influenza and other respiratory viruses, but other microbiology laboratories in Ontario also perform these tests.

Therefore, the numbers reported here do not represent the total number of respiratory viruses identified in Ontario laboratories.

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.

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



Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/11/05].

Notes:

Interpret tail of all lines with caution due to reporting lags.

* **Specimens are assigned to a particular reporting week based on the sample collection date.** Because of the lag time from the date the specimens were collected to the date test results are confirmed (up to 10 days for negative results to be finalized), not all specimens collected during the current weeks are included and the percent positivity for the most current week is more subject to change. Therefore, the most appropriate comparison for week 49, for example, is the percent positivity for week 48 that was reported in the Bulletin for week 48.

PHOL performs the majority of testing for influenza and other respiratory viruses, but other microbiology laboratories also perform these tests. Therefore, the numbers reported here do not represent the total number of respiratory viruses identified in Ontario laboratories.

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.

Table 2. Number and percent positivity (in brackets) of respiratory specimens tested by all methods for influenza and other respiratory viruses: Ontario, week 44 and cumulative for the 2013-2014 season

Detected viruses	Number and specimen percent positivity		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza (All)	12 (1.45)	32 (0.55)	827	5,762
Influenza A	12 (1.45)	26 (0.45)	827	5,762
Influenza B	0 (0)	6 (0.10)	827	5,762
Parainfluenza virus	25 (3.51)	203 (3.95)	712	5,140
Adenovirus	12 (1.69)	46 (0.89)	712	5,140
Respiratory Syncytial Virus	10 (1.22)	64 (1.12)	817	5,739
Enterovirus	37 (15.48)	536 (22.94)	239	2,337
Human metapneumovirus	4 (0.58)	13 (0.26)	695	4,908
Coronavirus	4 (1.93)	15 (0.84)	207	1,782

Source: Centre for Immunization and Respiratory Infectious Diseases, Public Health Agency of Canada (PHAC), as of 10:30 a.m. on November 6, 2013. These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada from 16 laboratories in Ontario and do not include data from late reports to PHAC for the current season: Week 44, 2013.

Notes:

The numbers reported in this table represent respiratory viruses identified at both Public Health Ontario Laboratories and other laboratories in Ontario.

The data in this table are based on the date on which test results are reported. Total numbers reported include late reports from previous weeks; therefore, totals may not be equal to the sum of the weekly numbers.

Cumulative numbers include reports from week 35, as PHAC includes week 35 as part of the 2013-2014 season.

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

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.

Table 3. Institutional respiratory infection outbreaks: Ontario, week 44 and total for the 2013-2014 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
Enterovirus/rhinovirus	1	20.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Combined Outbreaks [†]	0	0.0
Other organisms	0	0.0
No organism identified	4	80.0
TOTAL	5	100.0
Total respiratory infection outbreaks in the season to date	N	
Influenza A	0	0.0
Influenza B	0	0.0
Influenza A and B	0	0.0
Enterovirus/rhinovirus	76	68.5
Parainfluenza (All types)	5	4.5
RSV	0	0.0
Combined Outbreaks [†]	2	1.8
Other organisms	1	0.9
No organism identified	27	24.3
TOTAL	111	100.0
Types of institutions – All outbreaks in the season to date		
Long-Term Care Homes	86	77.5
Hospitals	5	4.5
Retirement Homes	12	10.8
Other	0	0.0
Unknown	8	7.2
TOTAL	111	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/11/06].

Notes:

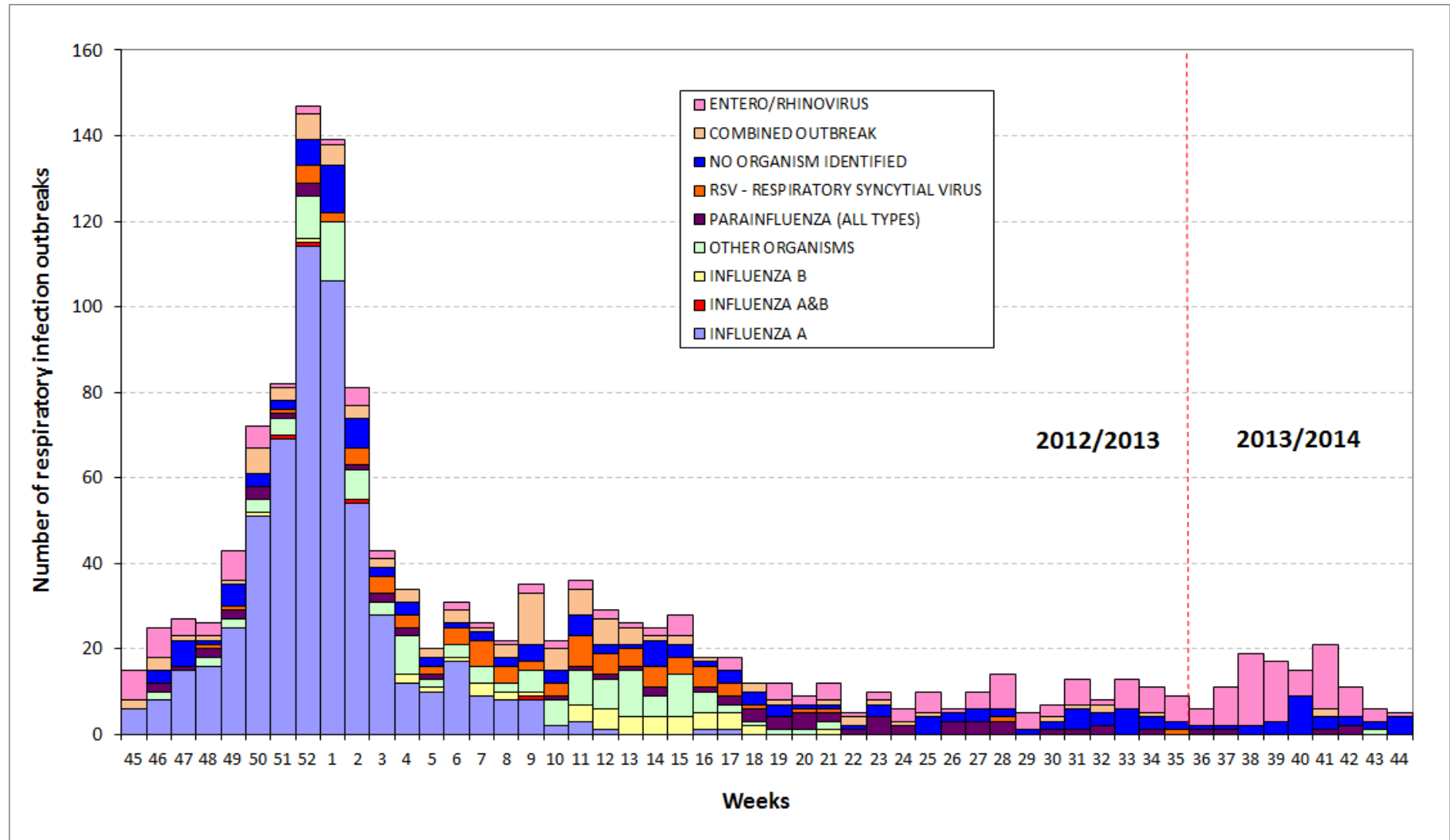
New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded through iPHIS in the current surveillance period; i.e. October 27, 2013 – November 2, 2013 (Week 44).

Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to the current reporting week.

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

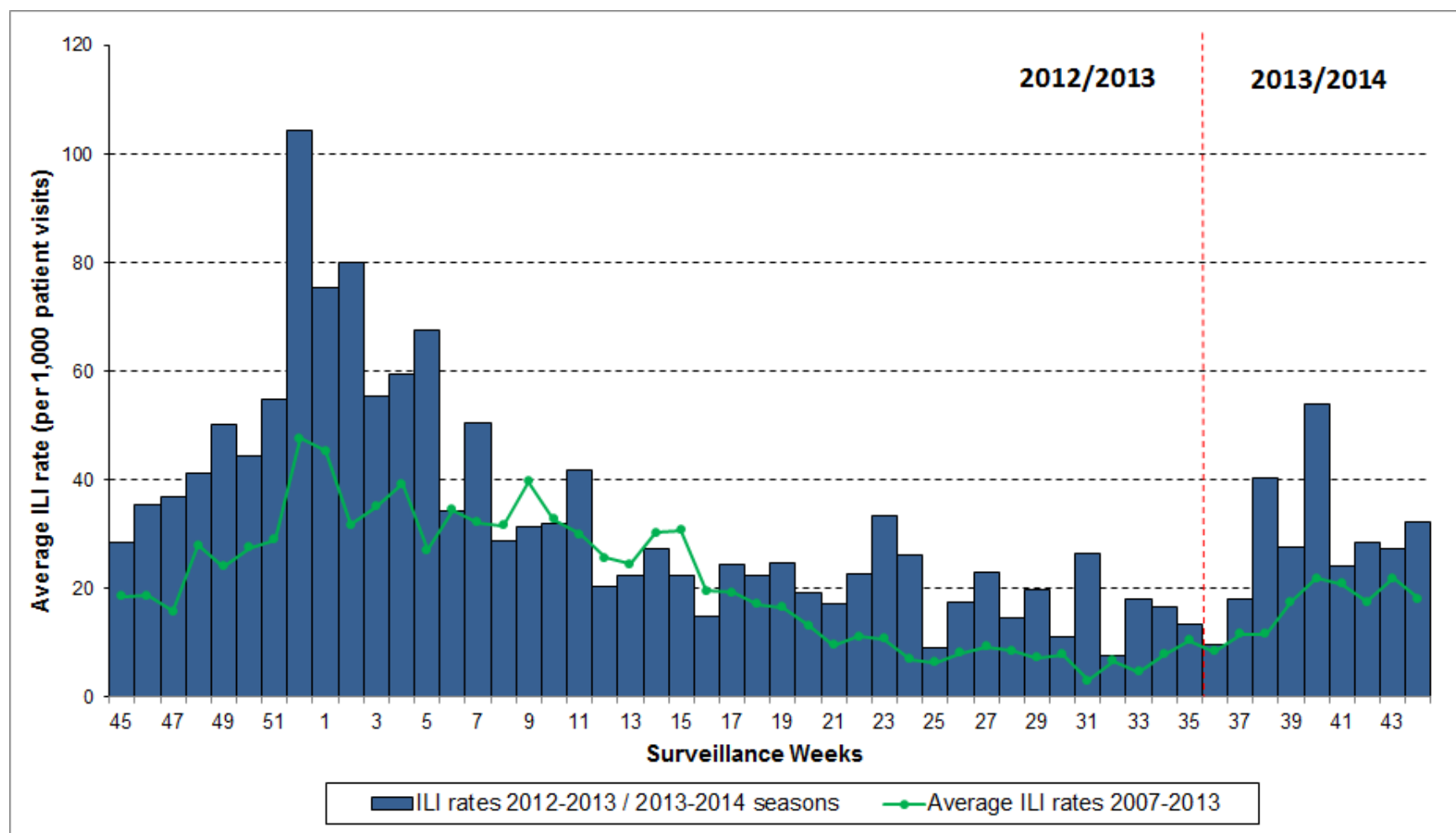
Other organisms include outbreaks involving other aetiological agents, such as human metapneumovirus, adenovirus, and coronavirus.

Figure 5. Institutional respiratory infection outbreaks by week of illness onset in the first case: Ontario, November 4, 2012 to November 2, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/11/06].

Figure 7. Average influenza-like-illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinels by report week compared to historical average (2007-2008 to 2012-2013 seasons): Ontario, November 4, 2012 to November 2, 2013



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

Notes:

ILI consultations from sentinel physicians 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. Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) by age group as reported by sentinels: Ontario, week 44*

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	6	11	24	4	0	45
<i>ILI Consultation Rate (per 1,000 patient visits)</i>	72.29	85.94	30.00	10.53	0.00	32.35

Source: Public Health Agency of Canada

Note: Sentinel information is reported to the Public Health Agency of Canada; 53 sentinels reported in week 44.

* Small numbers of sentinels reporting can make the ILI rates unstable. Please interpret the ILI rates presented in Table 4 correspondingly.

APPENDIX**Table I.** Strain characterization completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2013 to November 7, 2013

Influenza strains	Ontario	Canada
Influenza A (H3N2) A/Victoria/361/2011-like	1	2
Influenza A (H1N1)pdm09 A/California/07/09-like	1	2
Influenza B B/Brisbane/60/2008-like	1	1
Influenza B B/Massachusetts/02/2012-like	2	4

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

Notes:

The World Health Organization (WHO) recommended influenza vaccine strains for the Northern Hemisphere for the [2013-2014 season](#) are: A/California/7/2009-like (A H1N1pdm09-like virus); A/Victoria/361/2011 (H3N2)-like virus; and B/Massachusetts/2/2012-like virus (Yamagata lineage).

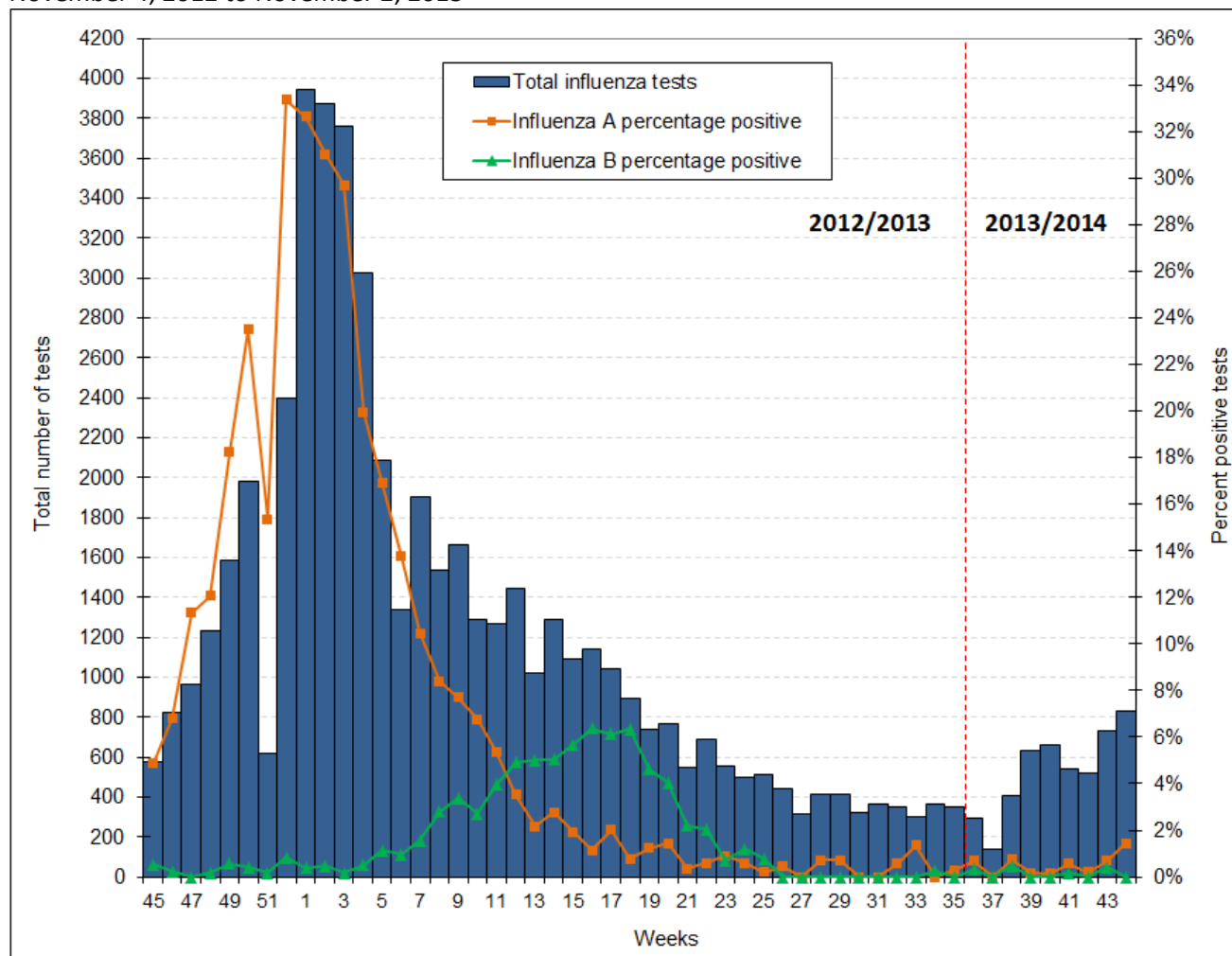
Table II. Amantadine, oseltamivir and zanamivir susceptibility assays completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2013 to November 7, 2013

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)	1	0	2	0	0	1	0	2	0	1	0	2
Influenza A (H1N1)pdm09	1	0	2	0	0	1	0	2	0	1	0	2
Influenza B	NA	NA	NA	NA	0	3	0	5	0	3	0	5

(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, November 4, 2012 to November 2, 2013



Source: Public Health Agency of Canada (PHAC), as of 10:30 a.m. on November 6, 2013. These data have been obtained from the PHAC Respiratory Virus Detection tables from 16 laboratories in Ontario. These data are not updated when results are submitted late for previous surveillance weeks.

Notes:

Results above are assigned to the surveillance week is based on when test results are reported to PHAC.

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

The numbers reported in this figure represent respiratory viruses identified in Public Health Ontario Laboratories, as well as other microbiology laboratories in Ontario.

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.