



Ontario Respiratory Virus Bulletin | 2012-2013

SURVEILLANCE WEEK 1 (December 30, 2012 – January 5, 2013)

This issue of the Ontario Respiratory Virus Bulletin provides information on the surveillance period from December 30, 2012 to January 5, 2013 (Week 1). Unless otherwise specified, **data presented are for week 1** and data extraction and analysis for this issue of the Bulletin occurred on Wednesday, January 9, 2013. In order to enable our readers to better assess influenza and other respiratory virus activity in Ontario, we have combined various sources of information in the following table.

Assessment of Influenza and 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	Higher (cases) Lower (tests)	There were 1,354 influenza cases reported* in week 1 (Table 1), which is higher than the number (791) reported in week 52. The percent positivity** of laboratory tests for influenza A in Ontario was 32.6% for week 1 (Table 3), which is slightly lower than week 52 which was 33.4%.
Other respiratory virus activity	Respiratory syncytial virus activity was lower	Among circulating respiratory viruses, respiratory syncytial virus had the second highest percent positivity** at 6.5% in week 1 (Table 3), which is lower than week 52 at 9.4%.
Institutional respiratory infection outbreaks	Higher	Fifty-two new institutional respiratory infection outbreaks were reported† in week 1, including 32 influenza A outbreaks, one combined outbreak and 19 outbreaks for which no aetiological agent was reported (Table 4, Figure 5).
Influenza activity levels reported by health units	Higher	Eighteen health units across six health regions reported 'widespread' levels of influenza activity, while 13 health units reported 'localized' levels of influenza activity (Figure 6).
ILI consultation rate reported by sentinel physicians	Not comparable	The provincial influenza-like-illness (ILI) consultation rate in week 1 was 75.5/1,000 patient visits and in week 52 was 104.5/1,000 patient visits. Because of decreased sentinel reporting over the holidays, weeks 52 and 1 may not be comparable to previous weeks (Figure 7).
Hospitalizations among lab confirmed cases of influenza*	Higher	There were 160 hospitalized cases reported* in week 1, which is higher than the number (48) reported in week 52 (Table 2).
Deaths among lab confirmed cases of influenza*	Higher	Twelve deaths were reported* in week 1, which is higher than the number (8) reported in week 52 (Table 2).
OVERALL ASSESSMENT	<i>Influenza activity: Slightly higher</i> <i>Other respiratory virus activity: Similar</i>	From week 52 to 1, overall the indicators show that influenza activity may be slightly higher provincially and was driven by influenza A; other respiratory virus activity was similar overall.

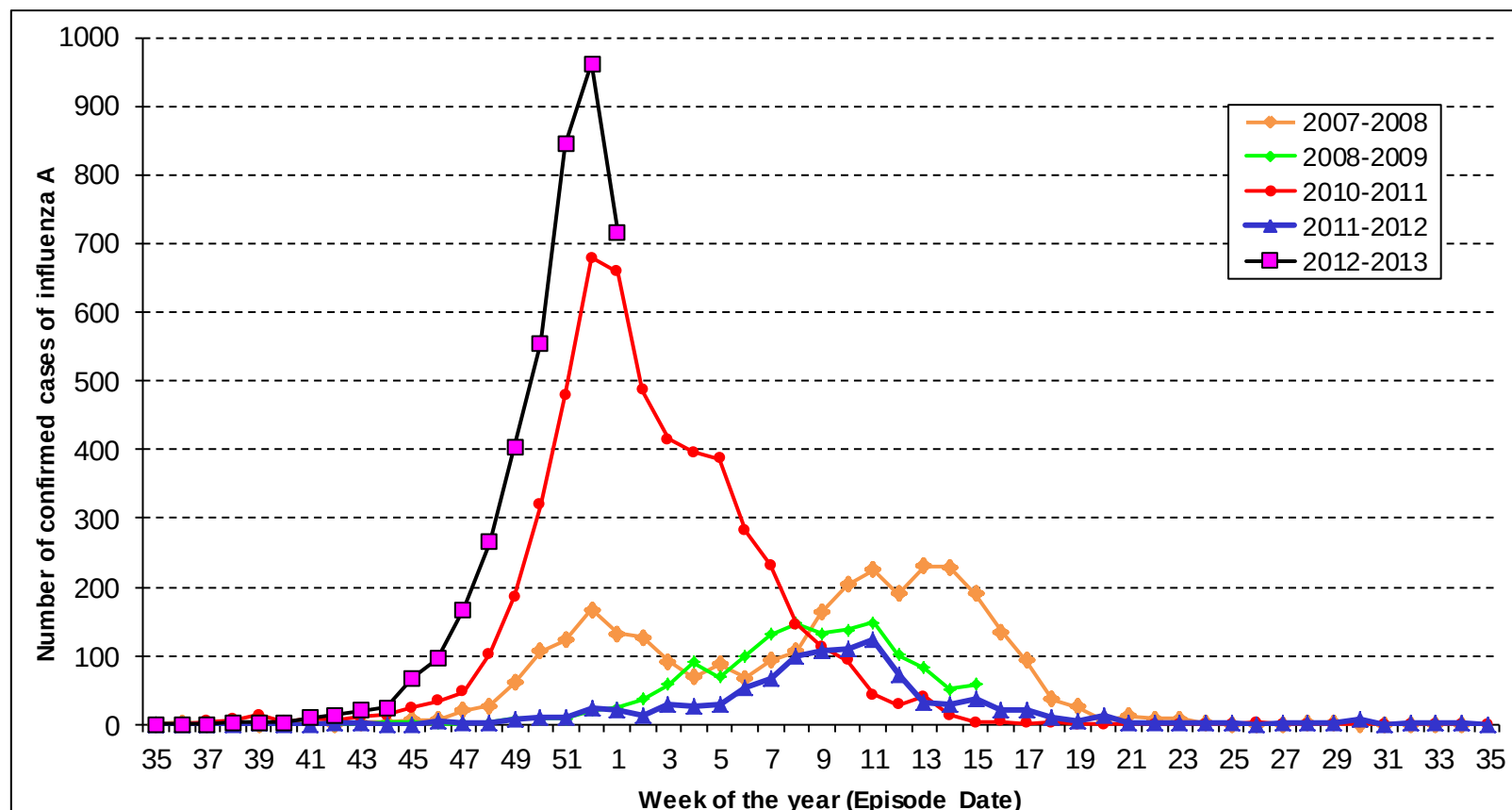
* The number of **reported** cases needs to be interpreted with caution because there is a lag between the onset of illness, hospital admission or death and when this information is reported to public health. ** Positivity reflects positive specimens reported to Public Health Ontario by the Centre for Immunization and Respiratory Infectious Diseases (CIRID). † 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.

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

- Seasonal influenza activity, primarily influenza A/H3N2, may be leveling off, with the proportion of respiratory samples testing positive for influenza now at 32.6%, the first time since week 39 that influenza positivity declined.*
 - A total of 4,183 influenza cases have been reported this season to January 5, 2013, 32.4% (1,354 cases) of which were reported in week 1. The majority of influenza cases this season (98.4%; 4,115/4,183) were influenza A infections (Table 1). The dominant circulating subtype of influenza A is still H3N2, representing 97.2% of all subtyped influenza A positive specimens.* Based on data from Public Health Ontario Laboratories, while influenza positivity has declined slightly, the volume of specimens submitted for testing has increased in the previous surveillance week, which partly accounts for the increased number of cases.
 - In the season to date, 530 institutional respiratory infection outbreaks have been reported, 258 (48.7%) of which were laboratory-confirmed influenza A (Table 4). The majority of the influenza A outbreaks in institutions have been reported by Toronto (19.4%; 50/258), followed by Ottawa (13.6%; 35/258).
 - A total of 552 hospitalizations and 43 deaths have been reported among lab confirmed influenza cases in the current surveillance season to January 5 (Table 2). The majority of hospitalizations and deaths occurred in influenza A cases.
 - Data from Public Health Ontario Laboratories indicates that higher percentage of influenza is being detected among specimens submitted from institutions, hospital and ambulatory care settings compared to emergency department and intensive care settings.
- The causes of influenza-like-illness (ILI) activity in the 2012-2013 surveillance season are changing as the season progresses.
 - At the beginning of the season, entero/rhinovirus was the causative organism of many institutional respiratory infection outbreaks. Currently, influenza A is the most common causative organism of institutional outbreaks and the number of newly reported influenza A outbreaks continues to increase (Table 4, Figure 5).
 - Currently, influenza A has the highest percent positivity and respiratory syncytial virus has the second highest percent positivity of all respiratory viruses. For the season to date, influenza A has had the highest percent positivity overall, followed by entero/rhinovirus (Table 3).*

* Positivity among specimens submitted for testing to laboratories reporting to the Centre for Immunization and Respiratory Infectious Diseases (CIRID).

Figure 1. Confirmed cases of influenza A in Ontario by episode date reported from September 1, 2007 to January 5, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/01/09].

Notes:

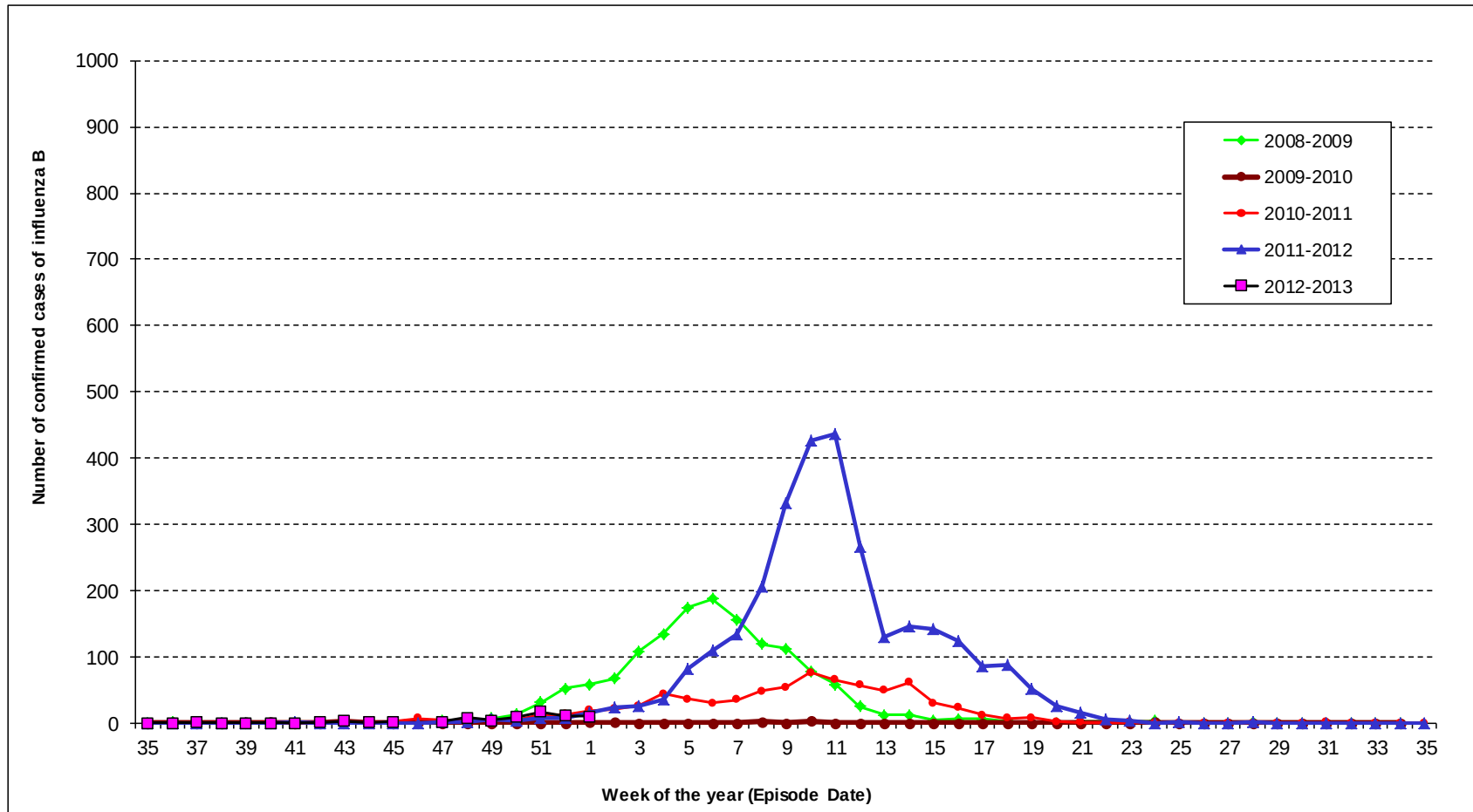
Interpret tail of 2012-2013 line with caution due to reporting lags.

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. Confirmed cases of influenza B in Ontario by episode date reported from September 1, 2008 to January 5, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/01/09].

Notes:

Interpret tail of 2012-2013 line with caution due to reporting lags.

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, 2012-2013 (Week 1: December 30, 2012 – January 5, 2013)

Table 1. Confirmed influenza cases with a reported date during week 1 and cumulative (in brackets) for the season since September 1, 2012, by health unit and health region

Region	Health Unit	Influenza A				Influenza A & B	Influenza B	TOTAL
		(H1N1) pdm09	No Subtype/ Not Subtyped	Other*	H3			
North West	Northwestern	0 (0)	3 (4)	0 (0)	2 (8)	0 (0)	0 (1)	5 (13)
	Thunder Bay District	0 (0)	2 (5)	0 (0)	19 (36)	0 (0)	0 (0)	21 (41)
	TOTAL NORTH WEST	0 (0)	5 (9)	0 (0)	21 (44)	0 (0)	0 (1)	26 (54)
North East	Algoma	0 (0)	2 (3)	0 (0)	3 (4)	0 (0)	0 (0)	5 (7)
	North Bay Parry Sound District	0 (1)	29 (141)	0 (0)	15 (35)	0 (0)	1 (1)	45 (178)
	Porcupine	0 (0)	5 (7)	0 (0)	2 (7)	0 (0)	0 (0)	7 (14)
	Sudbury & District	0 (0)	11 (16)	0 (0)	3 (4)	0 (0)	0 (0)	14 (20)
	Timiskaming	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	TOTAL NORTH EAST	0 (1)	47 (167)	0 (0)	23 (50)	0 (0)	1 (1)	71 (219)
Eastern	City of Ottawa	0 (0)	118 (180)	0 (0)	3 (6)	0 (0)	1 (1)	122 (187)
	Eastern Ontario	0 (0)	4 (14)	0 (0)	9 (30)	0 (0)	0 (0)	13 (44)
	Hastings & Prince Edward Counties	0 (0)	13 (42)	0 (0)	3 (72)	0 (0)	0 (0)	16 (114)
	Kingston, Frontenac, Lennox & Addington	0 (0)	41 (113)	0 (0)	0 (26)	0 (0)	1 (4)	42 (143)
	Leeds, Grenville And Lanark District	0 (0)	14 (32)	0 (0)	5 (18)	0 (0)	0 (0)	19 (50)
	Renfrew County And District	0 (1)	2 (7)	0 (0)	0 (2)	0 (0)	1 (4)	3 (14)
	TOTAL EASTERN	0 (1)	192 (388)	0 (0)	20 (154)	0 (0)	3 (9)	215 (552)
Central East	Durham Region	1 (2)	15 (46)	1 (1)	12 (34)	0 (0)	0 (2)	29 (85)
	Haliburton, Kawartha, Pine Ridge	0 (0)	31 (58)	0 (0)	1 (21)	0 (0)	0 (0)	32 (79)
	Peel Region	1 (6)	98 (194)	0 (1)	14 (76)	0 (0)	2 (9)	115 (286)
	Peterborough County-City	0 (0)	7 (28)	0 (0)	9 (65)	0 (0)	0 (0)	16 (93)
	Simcoe Muskoka District	0 (0)	48 (158)	0 (0)	41 (88)	0 (0)	0 (1)	89 (247)
	York Region	0 (1)	15 (34)	0 (0)	6 (25)	0 (0)	2 (2)	23 (62)
	TOTAL CENTRAL EAST	2 (9)	214 (518)	1 (2)	83 (309)	0 (0)	4 (14)	304 (852)
Toronto	Toronto	0 (15)	202 (366)	0 (0)	66 (326)	0 (0)	2 (21)	270 (728)
	TOTAL TORONTO	0 (15)	202 (366)	0 (0)	66 (326)	0 (0)	2 (21)	270 (728)
South West	Chatham-Kent	0 (0)	5 (13)	0 (0)	8 (18)	0 (0)	0 (0)	13 (31)
	Elgin-St. Thomas	0 (0)	11 (21)	0 (0)	5 (13)	0 (0)	0 (0)	16 (34)
	Grey Bruce	0 (0)	13 (71)	0 (0)	3 (33)	0 (0)	2 (2)	18 (106)
	Huron County	0 (1)	8 (35)	0 (1)	0 (18)	0 (0)	1 (1)	9 (56)
	Lambton County	1 (1)	7 (15)	0 (0)	4 (10)	0 (0)	0 (1)	12 (27)
	Middlesex-London	0 (1)	80 (232)	0 (0)	1 (42)	0 (0)	1 (2)	82 (277)
	Oxford County	0 (1)	5 (23)	0 (2)	5 (21)	0 (0)	1 (1)	11 (48)
	Perth District	0 (2)	3 (9)	0 (0)	3 (33)	0 (0)	0 (0)	6 (44)
	Windsor-Essex County	0 (1)	17 (35)	0 (0)	6 (18)	0 (0)	0 (0)	23 (54)
	TOTAL SOUTHWEST	1 (7)	149 (454)	0 (3)	35 (206)	0 (0)	5 (7)	190 (677)
Central West	Brant County	0 (2)	6 (45)	0 (0)	9 (67)	0 (0)	0 (1)	15 (115)
	City Of Hamilton	0 (0)	118 (321)	1 (1)	10 (19)	0 (0)	1 (4)	130 (345)
	Haldimand-Norfolk	0 (0)	4 (18)	0 (0)	0 (10)	0 (0)	0 (1)	4 (29)
	Halton Region	0 (1)	27 (72)	0 (0)	10 (37)	0 (0)	0 (1)	37 (111)
	Niagara Region	0 (0)	13 (38)	0 (0)	9 (30)	0 (0)	0 (0)	22 (68)
	Waterloo Region	0 (4)	36 (197)	0 (0)	5 (95)	0 (0)	2 (3)	43 (299)
	Wellington-Dufferin-Guelph	0 (3)	20 (56)	0 (0)	7 (70)	0 (0)	0 (5)	27 (134)
	TOTAL CENTRAL WEST	0 (10)	224 (747)	1 (1)	50 (328)	0 (0)	3 (15)	278 (1101)
	TOTAL ONTARIO	3 (43)	1033 (2649)	2 (6)	298 (1417)	0 (0)	18 (68)	1354 (4183)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/01/09].

* The 'Other' influenza A category includes indeterminate, untypeable and other subtypes.

Table 2. Hospitalizations and deaths among confirmed influenza cases during week 1 and cumulative (rates, and numbers in brackets) for the season since September 1, 2012, by age group

Age Group	Number of Hospitalizations	Cumulative Rate per 100,000	Number of Deaths	Cumulative Rate per 100,000
<1	9 (33)	23.31	1 (1)	0.71
1-4	11 (50)	8.77	0 (2)	0.35
5-14	6 (30)	2.01	0 (0)	0.00
15-24	6 (17)	0.94	0 (0)	0.00
25-44	11 (33)	0.90	0 (1)	0.03
45-64	24 (84)	2.28	0 (0)	0.00
65+	93 (303)	16.52	11 (39)	2.13
Unknown	0 (2)	-	0 (0)	-
Total	160 (552)	4.18	12 (43)	0.33

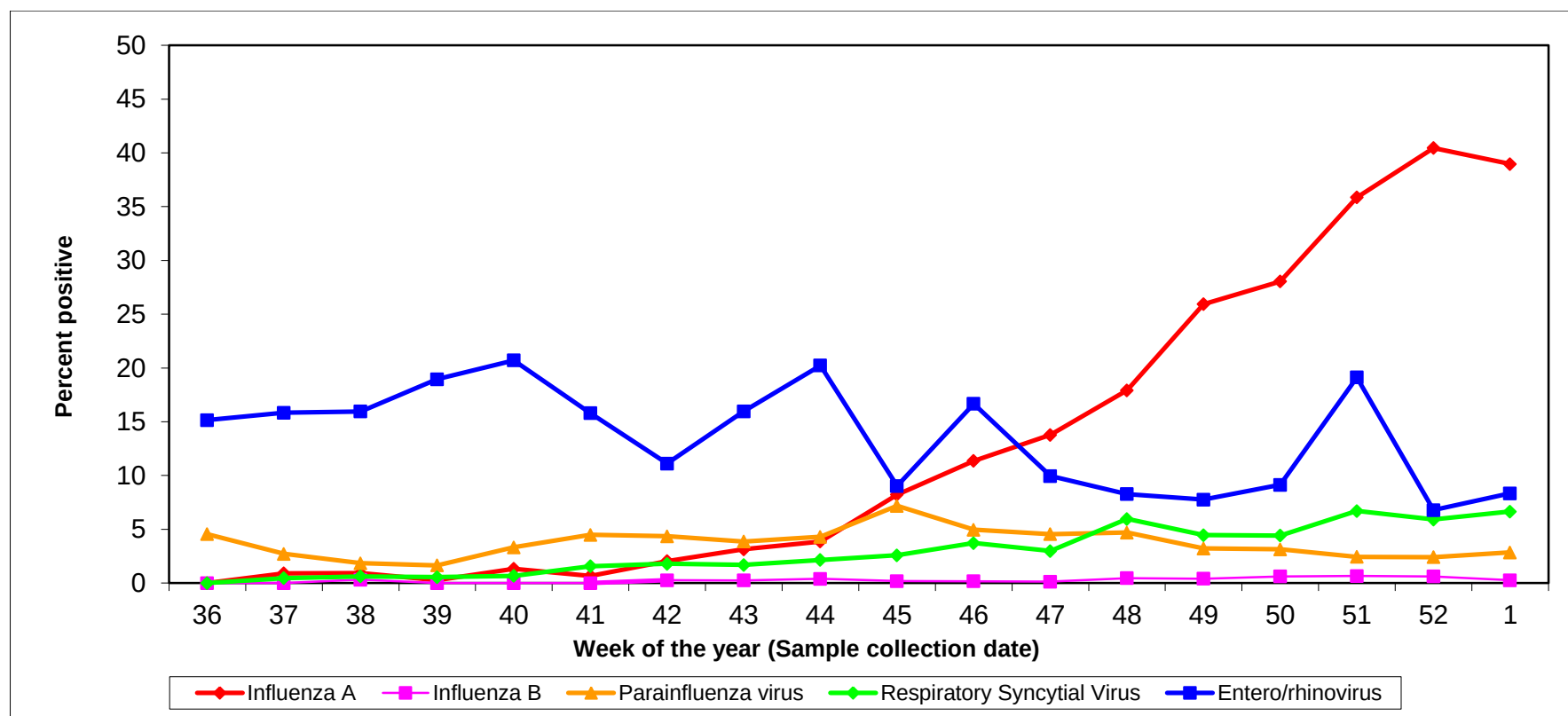
Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/01/10]. Population data obtained from IntelliHEALTH Ontario, retrieved by Public Health Ontario [2012/01/13].

Note:

The numbers of hospitalizations and deaths provided in iPHIS need to be interpreted with caution because there are lags between the onset of illness, hospital admission or death, and when this information is reported to public health. Due to closures over the holidays coinciding with increased influenza activity, there may be additional delays in the reporting of hospitalizations and deaths beyond the usually expected reporting time lag.

In addition, the numbers of hospitalizations and deaths reported in iPHIS are believed to be an underestimation of the true experience in the Ontario population for many reasons, including underreporting of confirmed cases by physicians to local public health units, and ill persons not seeking medical care and therefore not getting tested.

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, September 2, 2012 to January 5, 2013



Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/01/08].

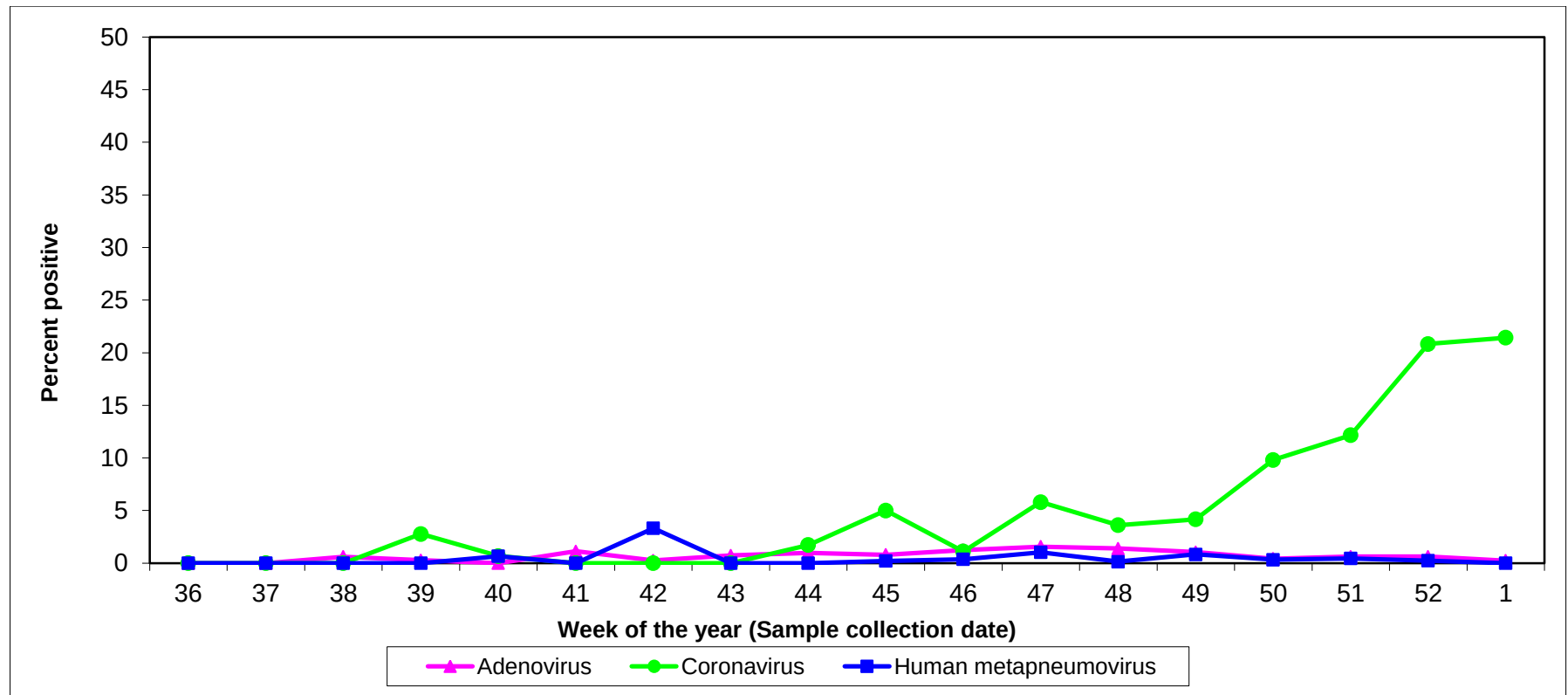
Notes:

Interpret tail of all lines with caution due to reporting lags. The data in this figure is presented by specimen 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.

The 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.

Figure 4. Percentage of respiratory viral pathogens (coronavirus, metapneumovirus, adenovirus) detected among specimens tested by all methods at PHOL, September 2, 2012 to January 5, 2013



Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/01/08].

Notes:

Interpret tail of all lines with caution due to reporting lags. The data in this figure is presented by specimen 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.

The 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 3. Number and percent positivity (in brackets) of respiratory specimens tested by all methods for influenza and other respiratory viruses during week 1 and cumulative for the 2012-2013 season

Detected viruses	Number and specimen percent positivity		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza A	1286 (32.63)	3852 (17.69)	3,941	21,769
Influenza B	15 (0.38)	71 (0.33)	3,941	21,769
Parainfluenza virus	49 (2.00)	563 (3.37)	2,448	16,708
Adenovirus	11 (0.45)	112 (0.67)	2,448	16,666
Respiratory Syncytial Virus	190 (6.49)	834 (4.59)	2,926	18,157
Enterovirus/rhinovirus	29 (3.31)	963 (11.74)	876	8,202
Human metapneumovirus	18 (0.75)	99 (0.71)	2,385	14,028
Coronavirus	45 (6.11)	154 (3.01)	736	5,121

Source: Centre for Immunization and Respiratory Infectious Diseases, Public Health Agency of Canada (PHAC). 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 1:00 PM on January 9, 2013 was used.

Notes:

The data in this table is based on when 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 reporting by PHAC includes week 35 as part of the 2012-2013 season. Cumulative numbers for the season to date are also available through FluWatch: <http://www.phac-aspc.gc.ca/fluwatch/>

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

Table 4. Institutional respiratory infection outbreaks in Ontario during week 1 and total for the season since September 1, 2012

Institutional Respiratory Infection Outbreaks		
New outbreaks	N	% (of outbreaks)
Influenza A (All subtypes)	32	61.5
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Combined outbreaks	1	1.9
Other organisms	0	0.0
Entero/rhinovirus	0	0.0
No organism identified	19	36.5
TOTAL	52	100.0
Total respiratory infection outbreaks in the season to date		
Influenza A (All subtypes)	258	48.7
Influenza B	2	0.4
Influenza A and B	2	0.4
Parainfluenza (All types)	12	2.3
RSV	3	0.6
Combined outbreaks	18	3.4
Other organisms	10	1.9
Entero/rhinovirus	131	24.7
No organism identified	94	17.7
TOTAL	530	100.0
Types of institutions –All outbreaks in the season to date		
Long-term care homes	316	59.6
Hospitals	39	7.4
Retirement homes	91	17.2
Other	0	0.0
Unknown	84	15.8
TOTAL	530	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/01/09].

Notes:

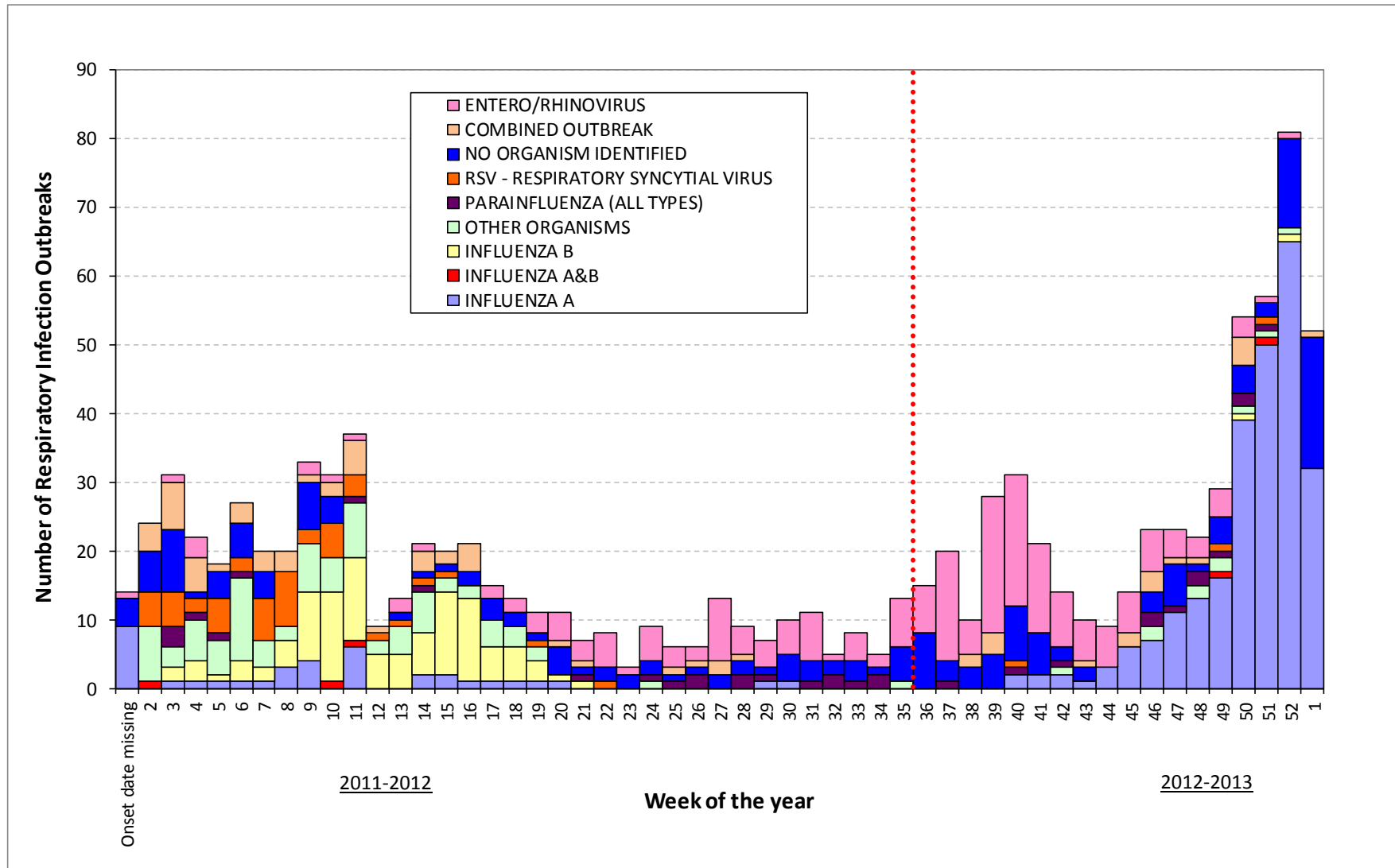
New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded through iPHIS in the current surveillance period; i.e. December 30, 2012 – January 5, 2012.

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.).

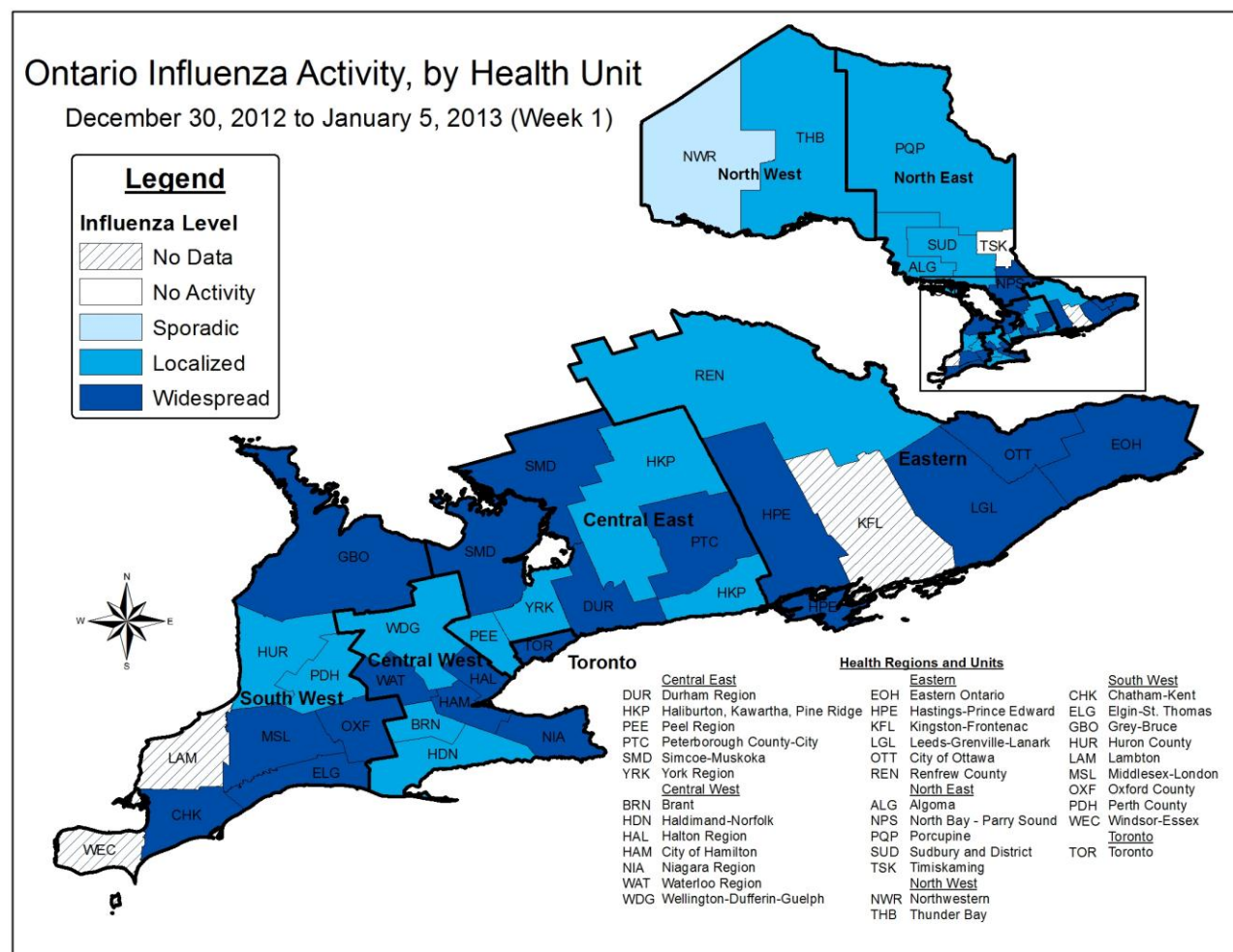
Other organisms include outbreaks involving other aetiological agents, such as human metapneumovirus, adenovirus, and coronavirus.

Figure 5. Institutional respiratory infection outbreaks in Ontario during the past year by onset week of illness in the first case



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/01/09].

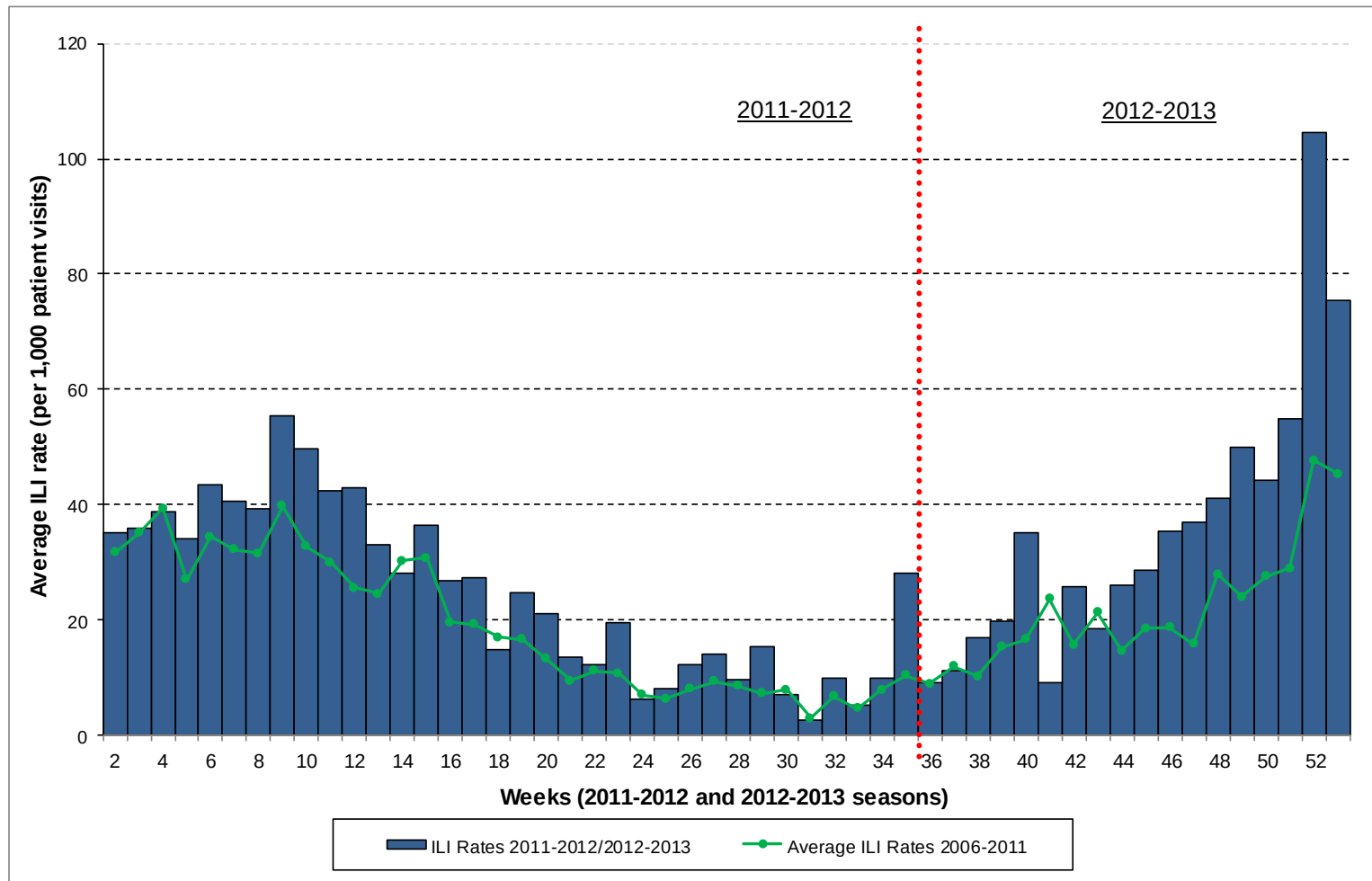
Figure 6. Influenza activity levels in Ontario during week 1 by health unit



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

Note: Influenza activity levels are assigned by local public health units and reported to Public Health Ontario by the Tuesday following the end of the surveillance week at 4:00PM. 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 2012-2013 season](#).

Figure 7. Average influenza-like-illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinels in Ontario during the past year by report week, compared to historical average (2006-2007 to 2011-2012 seasons)

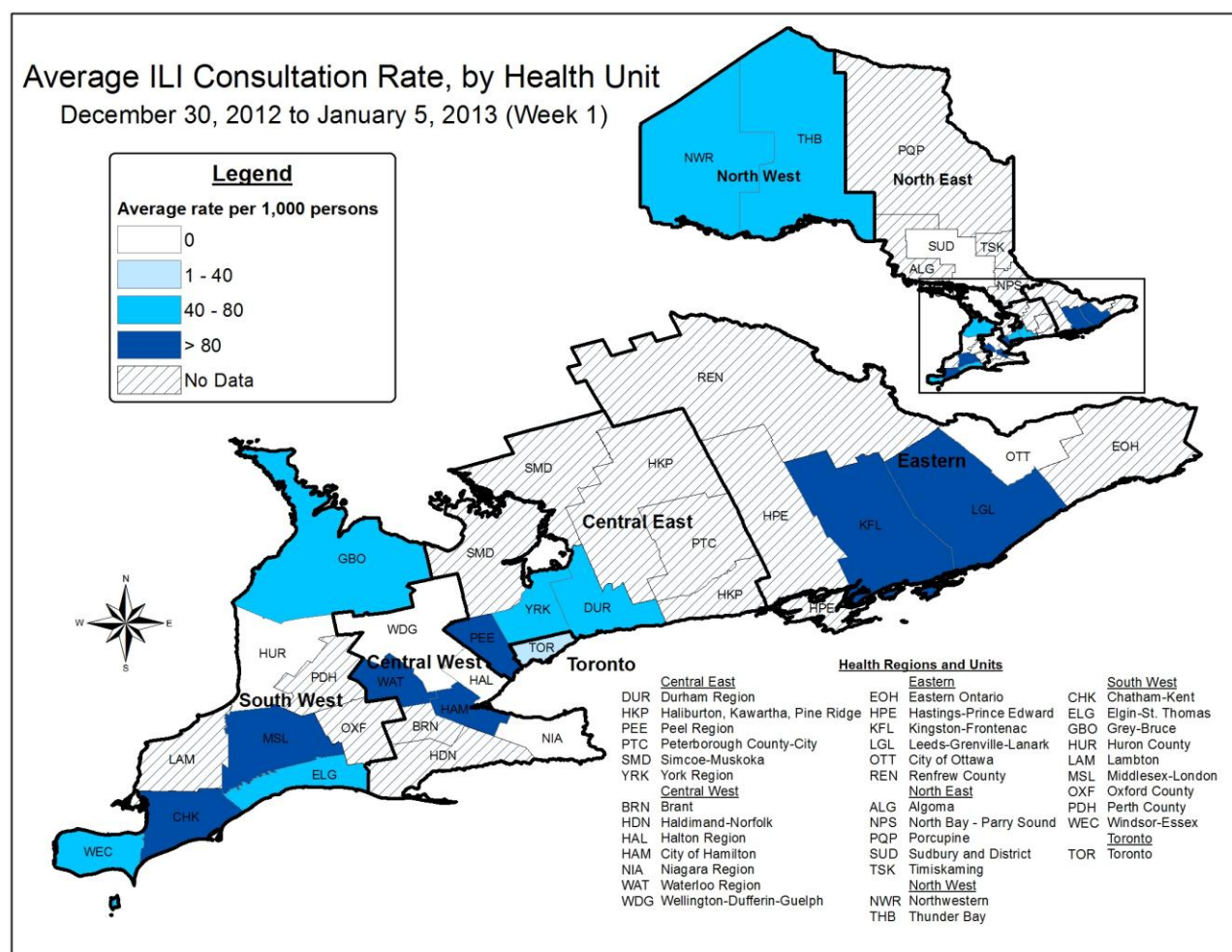


Source: Public Health Agency of Canada

Notes:

Sentinel information is reported to Public Health Agency of Canada. Due to small numbers of sentinels currently reporting (particularly for week 52, 2012 due to reduced reporting over the holidays), readers are advised to review overall trends and place less emphasis on week to week fluctuations. Ontario average ILI rates include data from the 2006-2007 to the 2011-2012 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.

Figure 8. Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) as reported by sentinels in Ontario during week 1 by health unit*



Source: Public Health Agency of Canada

Note: Sentinels report ILI and patient data to the Public Health Agency of Canada; 46 sentinels reported in week 1, all of which were matched to a health unit and represented in the above map.

Table 5. Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) as reported by sentinels in Ontario during week 1 by age group*

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	10	12	54	12	0	88
ILI Consultation Rate (per 1,000 patient visits)	133.33	113.21	82.70	36.14	0.00	75.47

Source: Public Health Agency of Canada

Note: Sentinel information is reported to the Public Health Agency of Canada; 46 sentinels reported in week 1.

* Small numbers of sentinels reporting can make the ILI rates unstable. Please interpret these data correspondingly. In week 1, ILI rates are less comparable to week 51 and earlier due to a reduced number of sentinels reporting over the holidays. Please interpret the ILI rates presented in Figure 8 and Table 5 correspondingly.

APPENDIX**Table I.** Number of specimens submitted to PHOL and results for influenza during week 1 and cumulative (in brackets) for the season since September 2, 2012, by health unit

Health Unit	Specimens submitted	Influenza B	Number of positive influenza A specimens			Total tested	% positive influenza A
			H3	A(H1N1) pdm09	Total influenza A		
ALGOMA DISTRICT	31 (155)	0 (0)	0 (5)	0 (0)	3 (10)	17 (139)	17.6 (7.2)
BRANT COUNTY	40 (373)	0 (1)	3 (93)	0 (2)	6 (116)	33 (350)	18.2 (33.1)
CHATHAM-KENT	27 (120)	0 (0)	5 (23)	0 (0)	6 (33)	26 (118)	23.1 (28.0)
CITY OF HAMILTON	45 (200)	0 (1)	16 (33)	0 (0)	17 (48)	30 (173)	56.7 (27.7)
CITY OF OTTAWA	8 (60)	0 (0)	1 (10)	0 (0)	1 (14)	4 (54)	25.0 (25.9)
CITY OF TORONTO	603 (3,518)	0 (14)	20 (400)	0 (19)	64 (574)	135 (2,867)	47.4 (20.0)
DURHAM REGIONAL	107 (628)	1 (4)	13 (51)	0 (3)	17 (86)	43 (536)	39.5 (16.0)
ELGIN-ST. THOMAS	28 (113)	0 (0)	9 (22)	0 (0)	13 (36)	25 (109)	52.0 (33.0)
EASTERN ONTARIO	16 (120)	0 (0)	8 (30)	0 (0)	8 (32)	15 (114)	53.3 (28.1)
GREY BRUCE	25 (398)	0 (2)	5 (88)	0 (0)	7 (124)	20 (379)	35.0 (32.7)
HALTON REGIONAL	86 (460)	0 (1)	4 (49)	0 (1)	11 (77)	45 (402)	24.4 (19.2)
HALDIMAND-NORFOLK	20 (116)	0 (1)	3 (20)	0 (0)	4 (32)	14 (102)	28.6 (31.4)
HALIBURTON-KAWARTHA-PINE RIDGE DISTRICT	44 (340)	0 (0)	2 (33)	0 (0)	7 (80)	28 (319)	25.0 (25.1)
HASTINGS AND PRINCE EDWARD COUNTIES	33 (393)	0 (0)	0 (101)	0 (0)	5 (119)	29 (380)	17.2 (31.3)
HURON COUNTY	26 (184)	1 (1)	1 (28)	0 (1)	4 (51)	18 (175)	22.2 (29.1)
KINGSTON-FRONTENAC AND LENNOX AND ADDINGTON	100 (511)	0 (4)	21 (120)	0 (0)	34 (179)	87 (491)	39.1 (36.5)
LAMBTON	22 (202)	0 (1)	3 (18)	0 (1)	6 (32)	16 (195)	37.5 (16.4)
LEEDS-GRENVILLE AND LANARK DISTRICT	56 (171)	0 (0)	9 (42)	0 (0)	16 (60)	45 (158)	35.6 (38.0)
MIDDLESEX-LONDON	44 (361)	0 (1)	8 (69)	0 (1)	14 (91)	40 (341)	35.0 (26.7)

Ontario Respiratory Virus Bulletin, 2012-2013 (Week 1: December 30, 2012 – January 5, 2013)

Health Unit	Specimens submitted	Influenza B	Number of positive influenza A specimens			Total tested	% positive influenza A
			H3	A(H1N1) pdm09	Total influenza A		
NIAGARA REGIONAL AREA	93 (460)	0 (0)	12 (48)	0 (1)	20 (89)	45 (376)	44.4 (23.7)
NORTH BAY PARRY SOUND DISTRICT	70 (389)	0 (0)	15 (55)	0 (0)	21 (76)	48 (364)	43.8 (20.9)
NORTHWESTERN	18 (134)	0 (1)	0 (6)	0 (0)	0 (12)	3 (118)	0.0 (10.2)
OXFORD COUNTY	15 (136)	0 (0)	3 (28)	0 (1)	5 (42)	11 (127)	45.5 (33.1)
PERTH DISTRICT	17 (211)	0 (0)	0 (34)	0 (2)	1 (45)	15 (207)	6.7 (21.7)
PEEL REGIONAL	225 (1,869)	0 (9)	5 (107)	1 (11)	14 (223)	27 (1,589)	51.9 (14.0)
PORCUPINE	25 (188)	0 (0)	3 (11)	0 (0)	5 (19)	18 (179)	27.8 (10.6)
PETERBOROUGH COUNTY-CITY	33 (204)	0 (0)	4 (31)	0 (0)	9 (49)	19 (186)	47.4 (26.3)
RENFREW COUNTY AND DISTRICT	8 (78)	0 (3)	0 (9)	0 (1)	0 (14)	6 (73)	0.0 (19.2)
SIMCOE MUSKOKA DISTRICT	255 (1,421)	0 (1)	35 (98)	0 (1)	55 (270)	111 (1,243)	49.5 (21.7)
SUDBURY AND DISTRICT	48 (250)	0 (0)	0 (6)	0 (0)	8 (26)	14 (212)	57.1 (12.3)
THUNDER BAY DISTRICT	32 (163)	0 (0)	8 (42)	0 (0)	8 (46)	15 (138)	53.3 (33.3)
TIMISKAMING	5 (30)	0 (0)	0 (0)	0 (0)	0 (1)	4 (29)	0.0 (3.4)
WATERLOO	57 (648)	1 (4)	6 (154)	0 (6)	14 (212)	45 (628)	31.1 (33.8)
WELLINGTON-DUFFERIN-GUELPH	82 (521)	0 (4)	10 (83)	0 (3)	16 (147)	39 (447)	41.0 (32.9)
WINDSOR-ESSEX COUNTY	38 (171)	0 (0)	6 (29)	0 (1)	15 (53)	26 (154)	57.7 (34.4)
YORK REGIONAL	147 (843)	0 (2)	0 (45)	0 (1)	9 (79)	22 (673)	40.9 (11.7)
OUT OF PROVINCE	8 (45)	0 (0)	0 (2)	0 (0)	2 (6)	4 (40)	50.0 (15.0)
TOTAL ONTARIO	2,537 (16,184)	3 (55)	238 (2,023)	1 (56)	445 (3,203)	1,142 (14,185)	39.0 (22.6)

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/01/08].

Notes:

Cumulative numbers are from September 2, 2012, and are displayed in brackets.

Health unit reflects the jurisdiction where the patient resides. In the event this is not available, health unit of the specimen submitter is used.

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

The data in this table are presented by specimen 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 may be overestimated. 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.

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 II. Strain characterization completed on Ontario and Canadian influenza isolates at the National Microbiology Laboratory, September 1, 2012 to January 10, 2013

Influenza strains	Ontario	Canada
Influenza A (H3N2) A/Victoria/361/2011-like	62	143
Influenza A (H1N1)pdm09 A/California/07/09-like	22	25
Influenza B B/Brisbane/60/2008-like*	3	4
Influenza B B/Wisconsin/01/2010-like	12	21

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

Note: The World Health Organization's recommended influenza vaccine strains for the Northern Hemisphere for the 2012-2013 season are: A/California/7/2009-like (A H1N1pdm09-like virus); A/Victoria/361/2011 (H3N2)-like virus; and B/Wisconsin/1/2010-like virus.

* This strain was the recommended influenza B component for the 2011-2012 influenza vaccine.

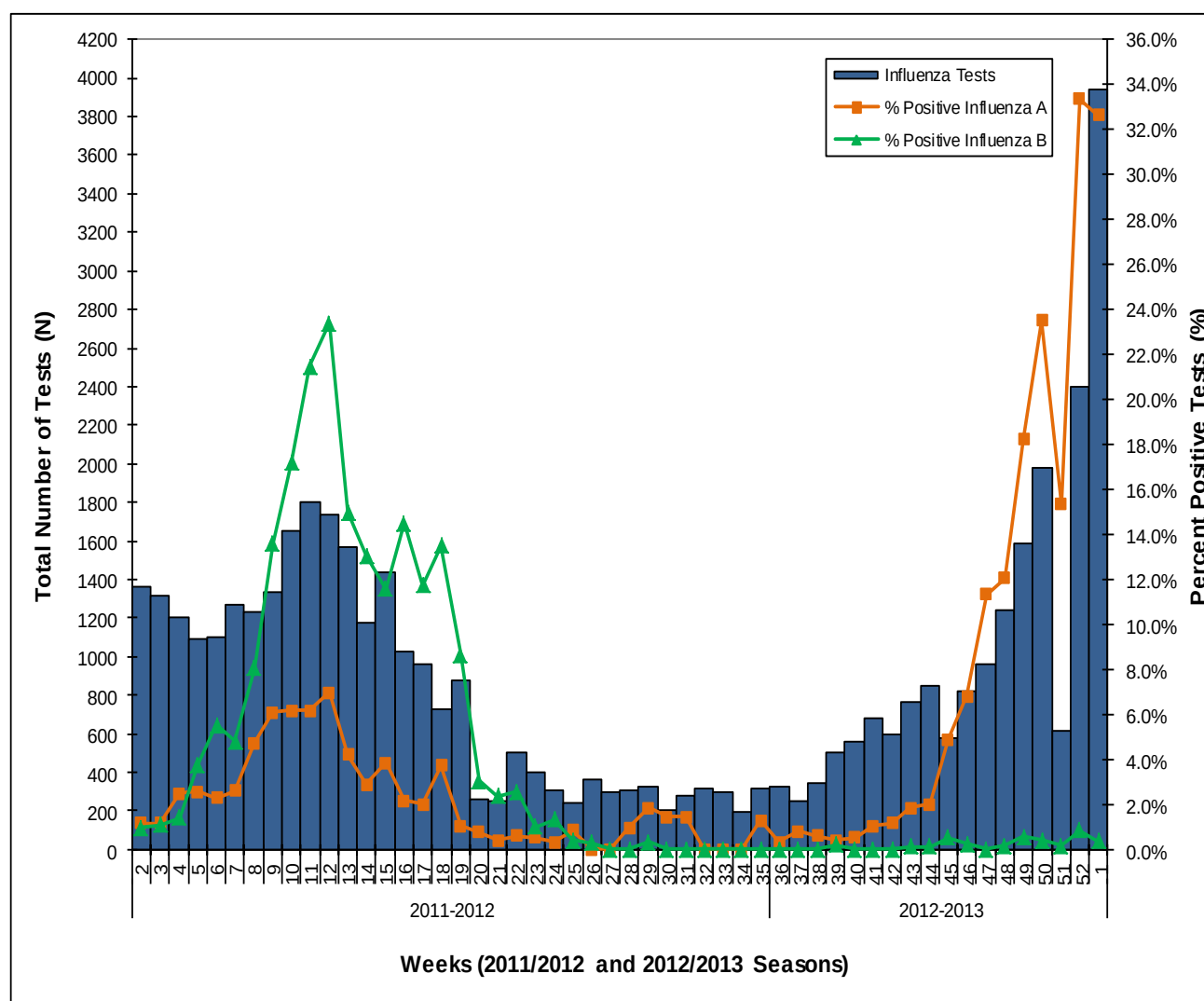
Table III. Amantadine, Oseltamivir and Zanamivir susceptibility assays completed on Ontario and Canadian influenza isolates at the National Microbiology Laboratory, September 1, 2012 to January 9, 2013

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)	117	0	225	0	0	63	0	137	0	61	0	135
Influenza A (H1N1)pdm09	16	0	18	0	0	16	0	18	0	16	0	18
Influenza B	NA	NA	NA	NA	0	14	0	23	0	14	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 in Ontario during the past year by report week



Source: Public Health Agency of Canada (PHAC). These data have been obtained from the PHAC Respiratory Virus Detection tables from 16 labs in Ontario and do not include data from late reports to PHAC. Please note that the last version received from PHAC as of 1:00 PM on January 9, 2013 was used.

Notes:

The data in figure is based on when test results are reported.

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

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

Bacterial respiratory pathogens identified at PHOL, week 1

Table IV. Number and percent positivity (in brackets) of respiratory specimens tested by all methods at PHOL for any *Mycoplasma pneumoniae* and *Chlamydophila pneumoniae* species during week 1 and cumulative for the season since September 2, 2012

Detected organism	Number and percent positive specimens		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
<i>Mycoplasma pneumoniae</i>	0 (0.0)	13 (2.4)	16	552
<i>Chlamydophila pneumoniae</i>	0 (0.0)	1 (0.2)	16	552

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/01/08].

Table V. Number and percent positivity (in brackets) of respiratory specimens tested by all methods at PHOL for any *Bordetella* species during week 1 and cumulative for the year since January 1, 2012

Detected organism	Number and percent positive specimens		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
<i>Bordetella pertussis</i>	2 (2.8)	645 (9.2)	72	7,010
<i>Bordetella parapertussis</i>	0 (0.0)	40 (0.6)	72	7,010
<i>Bordetella holmesii</i>	0 (0.0)	3 (0.0)	72	7,010

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/01/08].