



Ontario Respiratory Virus Bulletin | 2012-2013

SURVEILLANCE WEEKS 51 & 52 (December 16, 2012 – December 29, 2012)

This issue of the Ontario Respiratory Virus Bulletin provides information on the surveillance period from December 16, 2012 to December 29, 2012 (weeks 51 & 52). Unless otherwise specified, **the data presented are for weeks 51 & 52** and data extraction and analysis for this issue of the Bulletin occurred on Wednesday, January 2, 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	Seven hundred and ninety-one influenza cases were reported* in week 52 (Table 1), which is higher than the number (657) reported in week 51. The percent positivity** of laboratory tests for influenza A in Ontario was 33.4% for week 52 (Table 3), which is higher than for week 51 which was 15.4%.
Other respiratory virus activity	Respiratory syncytial virus activity was similar	Among circulating respiratory viruses, respiratory syncytial virus had the second highest percent positivity** at 9.4% in week 52 (Table 3), which is similar to week 51 at 9.2%.
Institutional respiratory infection outbreaks	Higher	Fourty-five new institutional respiratory infection outbreaks were reported† in week 52, including 22 influenza A outbreaks and 23 outbreaks for which no aetiological agent was reported (Table 4, Figure 5). In week 51, 41 new outbreaks were reported.
Influenza activity levels reported by health units	Similar	Nine health units across six health regions reported 'widespread' levels of influenza activity, while 14 health units reported 'localized' levels of influenza activity in week 52 (Figure 6). In week 51, eight health units reported 'widespread' and 16 health units reported 'sporadic' activity.
ILI consultation rate reported by sentinel physicians	Not comparable	The provincial influenza-like-illness (ILI) consultation rate in week 52 was 104.5/1,000 patient visits and in week 51 was 55.8/1,000 patient visits. The week 52 rate was much higher than expected, likely due to decreased sentinel reporting over the holidays, and is therefore not comparable to previous weeks (Figure 7).
Hospitalizations among lab confirmed cases of influenza	Lower	There were 48 hospitalized cases reported* in week 52, which is lower than the number (106) reported in week 51 (Table 2).
Deaths among lab confirmed cases of influenza	Similar	Eight deaths were reported* in week 52, which is the same as the number (8) reported in week 51 (Table 2).
OVERALL ASSESSMENT	<i>Influenza activity: Higher</i> <i>Other respiratory virus activity: Similar</i>	From week 51 to 52, overall the indicators show that influenza activity increased and was driven by influenza A; other respiratory virus activity was similar overall.

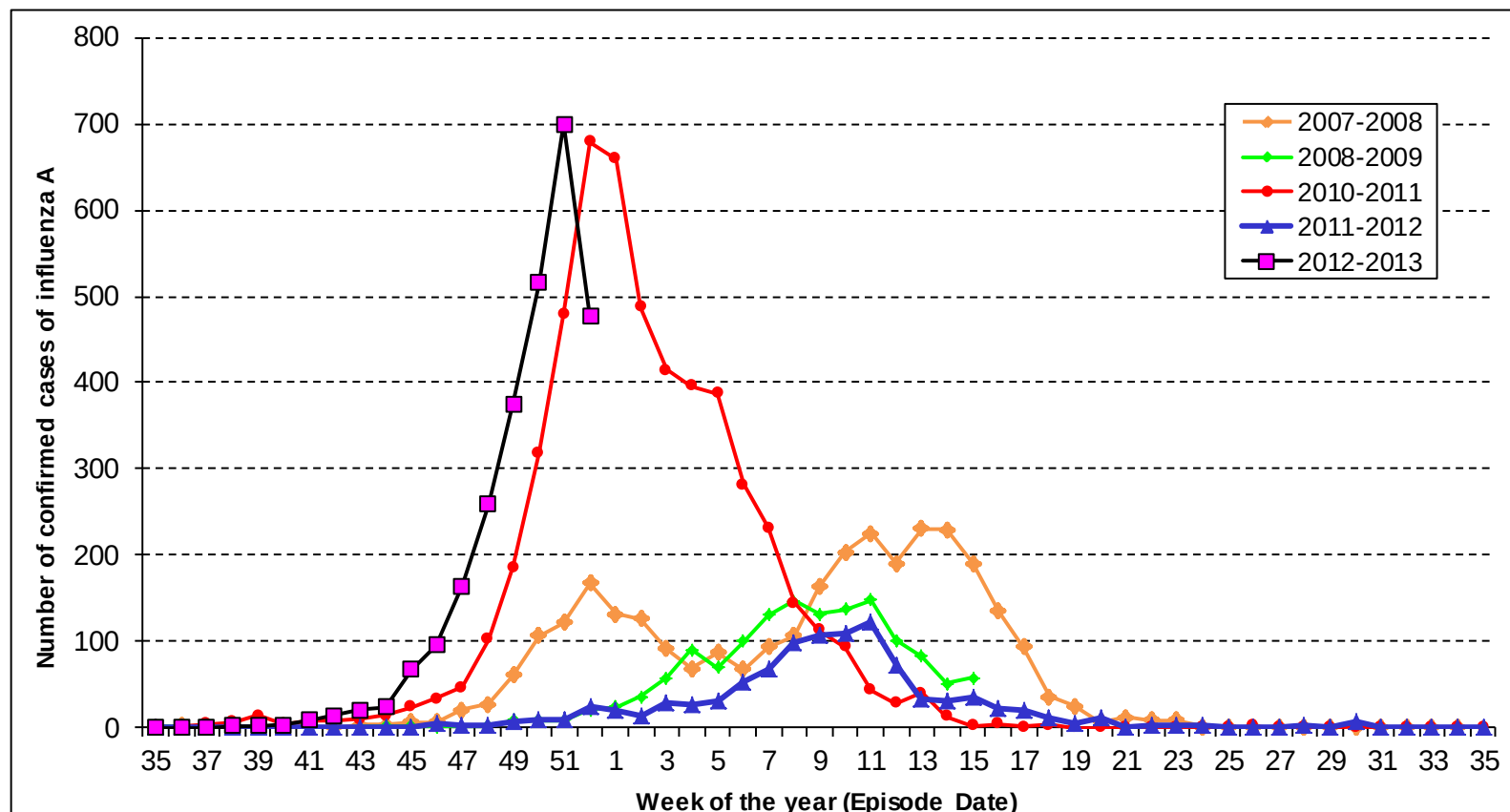
* The number of **reported** cases needs to be interpreted with caution because there is a lag between the onset of illness, hospital admission or death and when this information is reported to public health. ** Positivity reflects positive specimens reported to Public Health Ontario by the Centre for 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, continues to increase, with the proportion of respiratory samples testing positive for influenza now at 33.4%.*
 - Influenza activity varies across the province. Activity levels are currently highest in Toronto health region, followed by Central West health region (Figure 6).
 - A total of 2,712 influenza cases have been reported this season to December 29, 2012, 53.4% (1,448 cases) of which were reported in weeks 51 and 52 combined. The majority of influenza cases this season (98.1%; 2,661/2,712) were influenza A infections (Table 1). The dominant circulating subtype of influenza A is still H3N2, representing 96.6% of all subtyped influenza A positive specimens.*
 - In the season to date, 407 institutional respiratory infection outbreaks have been reported, 155 (38.1%) of which were laboratory-confirmed influenza A (Table 4). The majority of the influenza A outbreaks in institutions have been reported by Toronto (18.1%; 28/155), followed by Waterloo Region (14.2%; 22/155).
 - A total of 392 hospitalizations and 31 deaths have been reported among lab confirmed influenza cases in the current surveillance season to December 29 (Table 2). The majority of hospitalizations and all deaths occurred in influenza A cases.
 - Data from Public Health Ontario Laboratories indicate that a higher percentage of influenza is currently being detected among specimens submitted from institutions and ambulatory care settings compared to emergency departments, intensive care and other hospital 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).*
 - The provincial ILI consultation rates in recent weeks up to week 51 continues to be higher than the average rate from previous years (Figure 7).

* 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 December 29, 2012



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/01/02].

Notes:

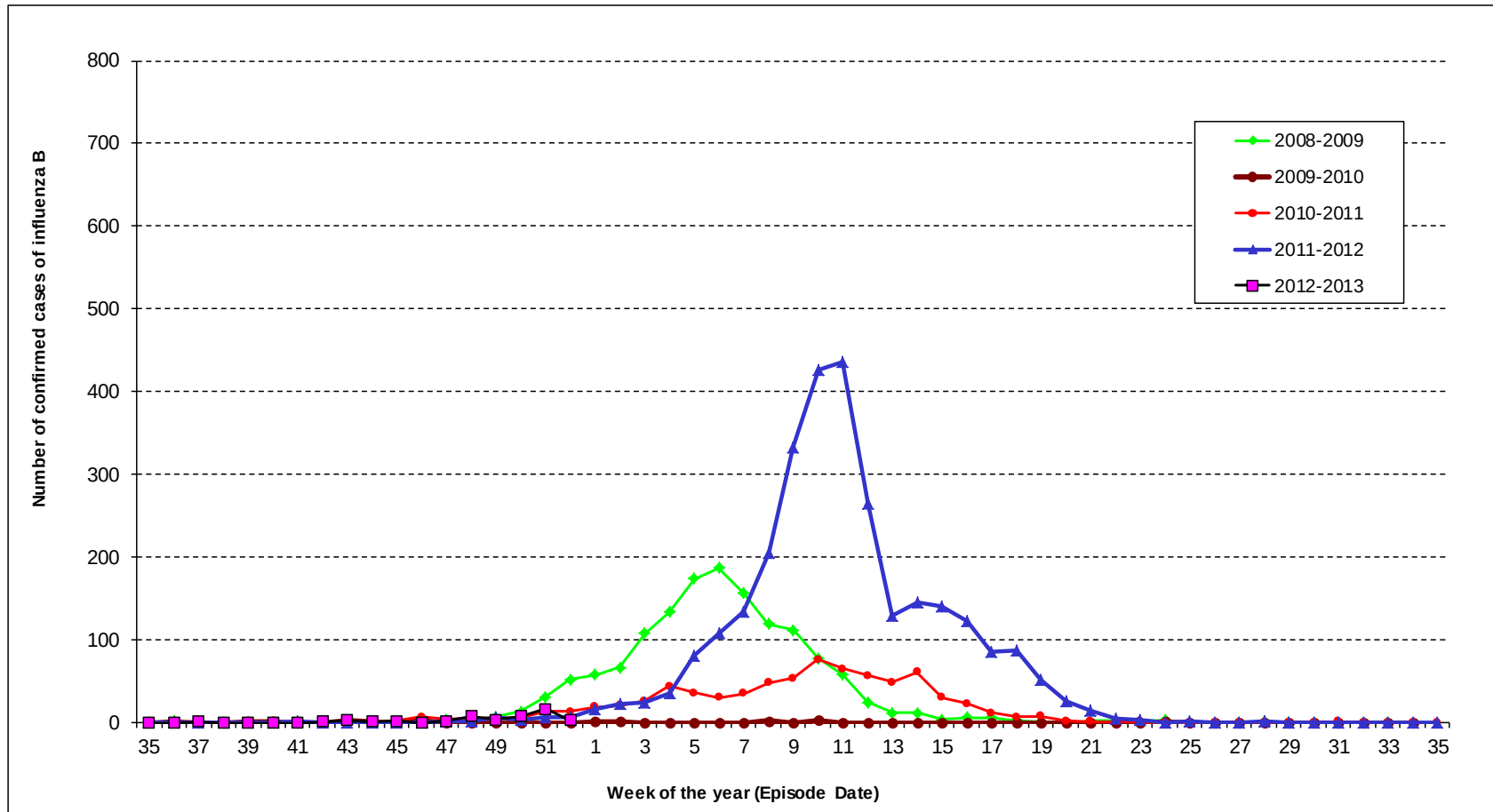
Interpret tail of 2012-2013 line with caution due to reporting lags.

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 December 29, 2012



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/01/02].

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 (Weeks 51 & 52: December 16, 2012 – December 29, 2012)

Table 1. Confirmed influenza cases with a reported date during week 52 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)	0 (1)	0 (0)	0 (6)	0 (0)	0 (1)	0 (8)
	Thunder Bay District	0 (0)	0 (4)	0 (0)	0 (11)	0 (0)	0 (0)	0 (15)
	TOTAL NORTH WEST	0 (0)	0 (5)	0 (0)	0 (17)	0 (0)	0 (1)	0 (23)
North East	Algoma	0 (0)	0 (1)	0 (0)	0 (1)	0 (0)	0 (0)	0 (2)
	North Bay Parry Sound District	0 (1)	31 (109)	0 (0)	2 (14)	0 (0)	0 (0)	33 (124)
	Porcupine	0 (0)	2 (2)	0 (0)	2 (4)	0 (0)	0 (0)	4 (6)
	Sudbury & District	0 (0)	4 (5)	0 (0)	1 (1)	0 (0)	0 (0)	5 (6)
	Timiskaming	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	TOTAL NORTH EAST	0 (1)	37 (117)	0 (0)	5 (20)	0 (0)	0 (0)	42 (138)
Eastern	City of Ottawa	0 (0)	17 (62)	0 (0)	0 (3)	0 (0)	0 (0)	17 (65)
	Eastern Ontario	0 (0)	1 (10)	0 (0)	2 (12)	0 (0)	0 (0)	3 (22)
	Hastings & Prince Edward Counties	0 (0)	15 (26)	0 (0)	0 (61)	1 (1)	0 (0)	16 (88)
	Kingston, Frontenac, Lennox & Addington	0 (0)	28 (67)	0 (0)	0 (22)	0 (0)	1 (3)	29 (92)
	Leeds, Grenville And Lanark District	0 (0)	10 (19)	0 (0)	0 (9)	0 (0)	0 (0)	10 (28)
	Renfrew County And District	0 (1)	3 (5)	0 (0)	0 (1)	0 (0)	0 (3)	3 (10)
	TOTAL EASTERN	0 (1)	74 (189)	0 (0)	2 (108)	1 (1)	1 (6)	78 (305)
Central East	Durham Region	0 (1)	22 (31)	0 (0)	2 (19)	0 (0)	0 (2)	24 (53)
	Haliburton, Kawartha, Pine Ridge	0 (0)	15 (27)	0 (0)	5 (19)	0 (0)	0 (0)	20 (46)
	Peel Region	0 (4)	51 (111)	0 (1)	14 (47)	0 (0)	1 (7)	66 (170)
	Peterborough County-City	0 (0)	1 (21)	0 (0)	1 (55)	0 (0)	0 (0)	2 (76)
	Simcoe Muskoka District	0 (0)	45 (110)	0 (0)	4 (42)	0 (0)	0 (1)	49 (153)
	York Region	0 (1)	3 (10)	0 (0)	0 (12)	0 (0)	0 (0)	3 (23)
	TOTAL CENTRAL EAST	0 (6)	137 (310)	0 (1)	26 (194)	0 (0)	1 (10)	164 (521)
Toronto	Toronto	1 (13)	150 (248)	0 (0)	41 (175)	0 (0)	9 (19)	201 (455)
	TOTAL TORONTO	1 (13)	150 (248)	0 (0)	41 (175)	0 (0)	9 (19)	201 (455)
South West	Chatham-Kent	0 (0)	6 (8)	0 (0)	1 (8)	0 (0)	0 (0)	7 (16)
	Elgin-St. Thomas	0 (0)	4 (11)	0 (0)	1 (3)	0 (0)	0 (0)	5 (14)
	Grey Bruce	0 (0)	12 (59)	0 (0)	3 (29)	0 (0)	0 (0)	15 (88)
	Huron County	0 (1)	8 (27)	0 (1)	1 (18)	0 (0)	0 (0)	9 (47)
	Lambton County	0 (0)	1 (8)	0 (0)	0 (6)	0 (0)	0 (1)	1 (15)
	Middlesex-London	0 (1)	54 (153)	0 (0)	3 (38)	0 (0)	0 (1)	57 (193)
	Oxford County	0 (1)	2 (18)	1 (2)	1 (16)	0 (0)	0 (0)	4 (37)
	Perth District	0 (2)	0 (6)	0 (0)	5 (30)	0 (0)	0 (0)	5 (38)
	Windsor-Essex County	0 (1)	3 (16)	0 (0)	2 (11)	0 (0)	0 (0)	5 (28)
	TOTAL SOUTHWEST	0 (6)	90 (306)	1 (3)	17 (159)	0 (0)	0 (2)	108 (476)
Central West	Brant County	1 (2)	5 (40)	0 (0)	4 (57)	0 (0)	0 (1)	10 (100)
	City Of Hamilton	0 (0)	83 (203)	0 (0)	1 (9)	0 (0)	0 (3)	84 (215)
	Haldimand-Norfolk	0 (0)	3 (8)	0 (0)	1 (9)	0 (0)	0 (1)	4 (18)
	Halton Region	0 (1)	27 (54)	0 (0)	1 (18)	0 (0)	0 (1)	28 (74)
	Niagara Region	0 (0)	6 (13)	0 (0)	1 (15)	0 (0)	0 (0)	7 (28)
	Waterloo Region	0 (4)	44 (162)	0 (0)	3 (86)	0 (0)	0 (1)	47 (253)
	Wellington-Dufferin-Guelph	0 (3)	14 (38)	0 (0)	3 (60)	0 (0)	1 (5)	18 (106)
	TOTAL CENTRAL WEST	1 (10)	182 (518)	0 (0)	14 (254)	0 (0)	1 (12)	198 (794)
	TOTAL ONTARIO	2 (37)	670 (1,693)	1 (4)	105 (927)	1 (1)	12 (50)	791 (2,712)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/01/02].

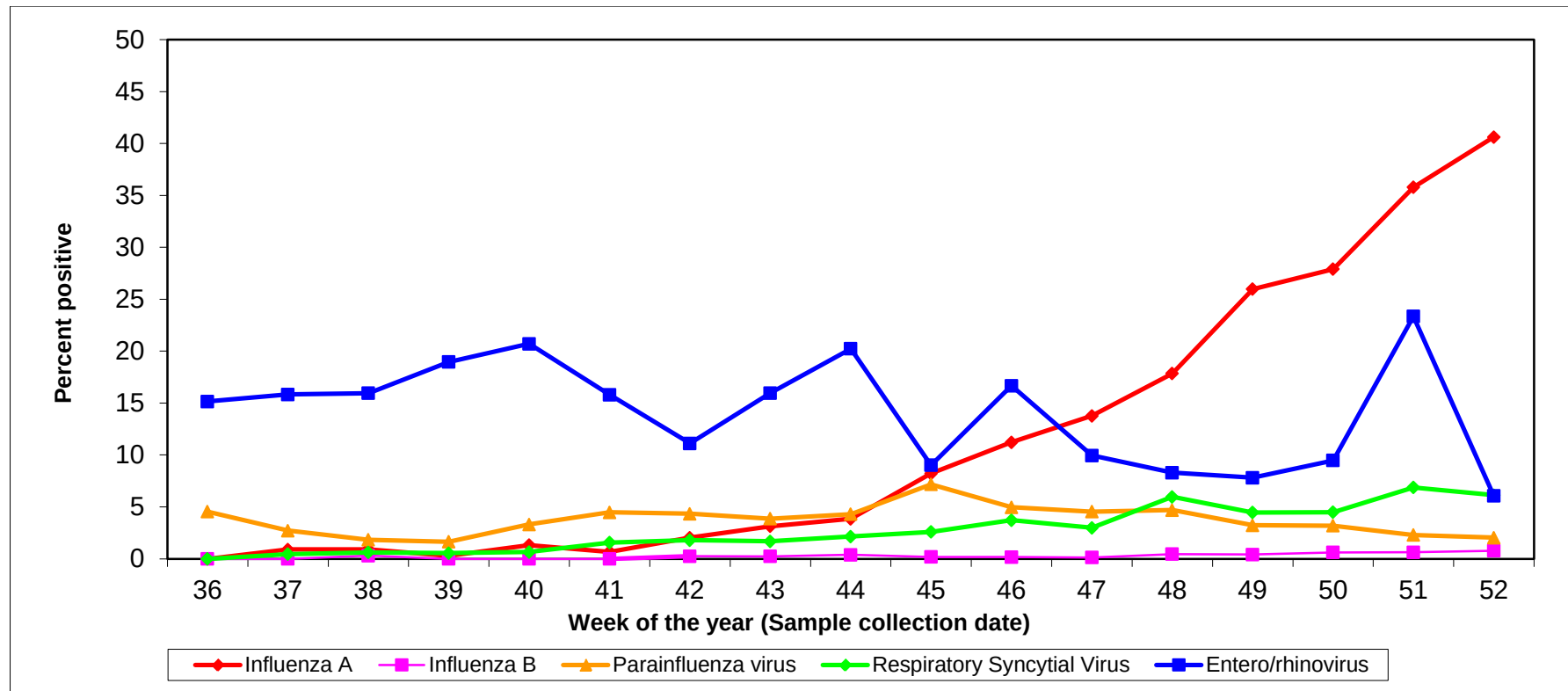
* The 'Other' influenza A category includes indeterminate, untypeable and other subtypes.

Table 2. Hospitalizations and deaths among confirmed influenza cases during week 52 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	3 (24)	16.95	0 (0)	0.00
1-4	7 (39)	6.84	0 (2)	0.35
5-14	6 (24)	1.61	0 (0)	0.00
15-24	0 (11)	0.61	0 (0)	0.00
25-44	2 (22)	0.60	0 (1)	0.03
45-64	6 (60)	1.63	0 (0)	0.00
65+	24 (210)	11.45	8 (28)	1.53
Unknown	0 (2)	-	0 (0)	-
Total	48 (392)	2.97	8 (31)	0.23

Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/01/02]. Population data obtained from IntelliHEALTH Ontario, retrieved by Public Health Ontario [2012/01/13].

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 December 29, 2012



Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/01/02].

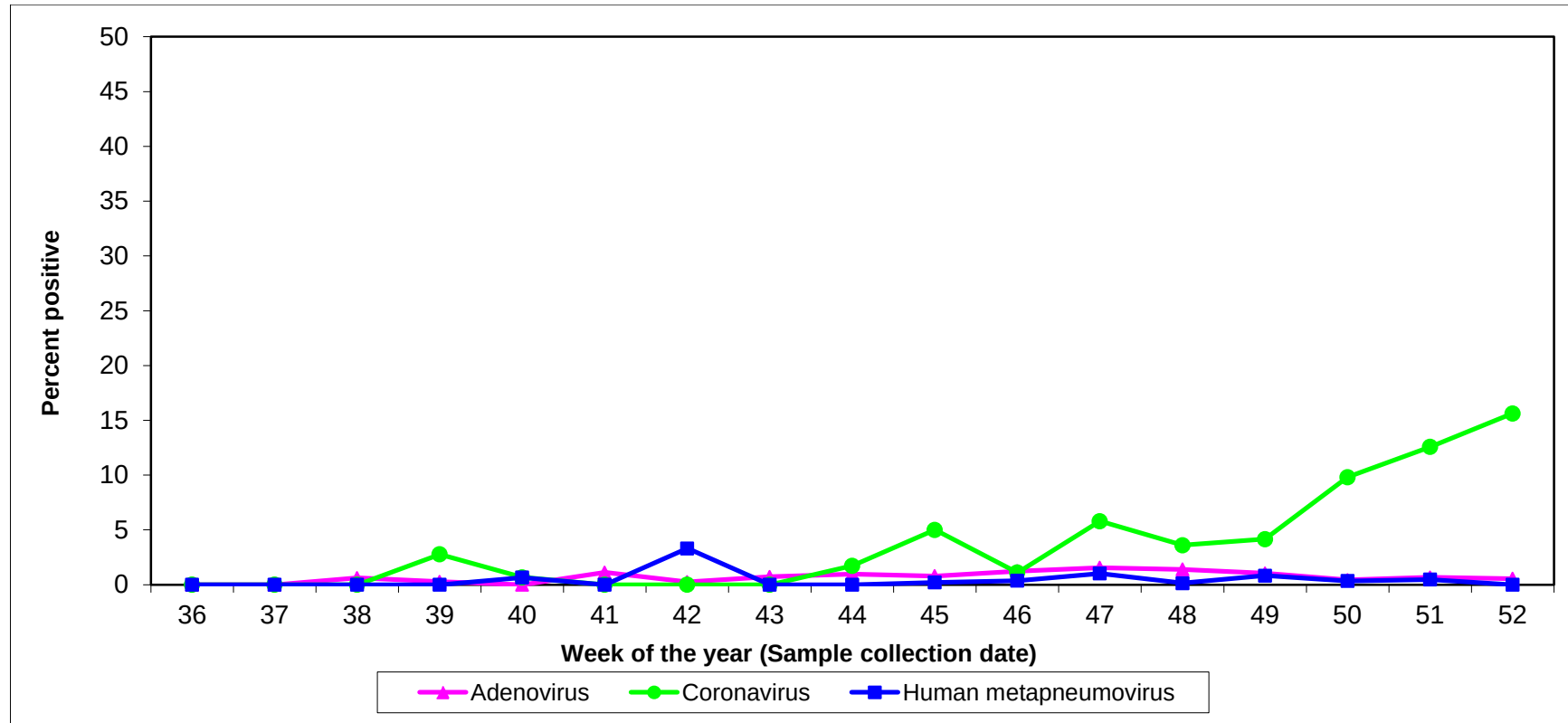
Notes:

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 December 29, 2012



Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/01/02].

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 52 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	801 (33.36)	2,548 (14.39)	2,401	17,710
Influenza B	20 (0.83)	56 (0.32)	2,401	17,710
Parainfluenza virus	42 (2.4)	512 (3.62)	1,747	14,142
Adenovirus	6 (0.34)	101 (0.72)	1,747	14,100
Respiratory Syncytial Virus	195 (9.39)	643 (4.25)	2,077	15,113
Enterovirus/rhinovirus	34 (5.93)	930 (12.9)	573	7,208
Human metapneumovirus	13 (0.84)	77 (0.67)	1,546	11,525
Coronavirus	12 (4.33)	107 (2.51)	277	4,267

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 52, 2012. Please note that the last version received from PHAC as of 9:00 AM on January 3, 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 52 and total for the season since September 1, 2012

Institutional Respiratory Infection Outbreaks		
New outbreaks	N	% (of outbreaks)
Influenza A (All subtypes)	22	48.9
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Combined outbreaks	0	0.0
Other organisms	0	0.0
Entero/rhinovirus	0	0.0
No organism identified	23	51.1
TOTAL	45	100.0
Total respiratory infection outbreaks in the season to date		
Influenza A (All subtypes)	155	38.1
Influenza B	1	0.2
Influenza A and B	1	0.2
Parainfluenza (All types)	9	2.2
RSV	3	0.7
Combined outbreaks	18	4.4
Other organisms	8	2.0
Entero/rhinovirus	120	29.5
No organism identified	92	22.6
TOTAL	407	100.0
Types of institutions –All outbreaks in the season to date		
Long-term care homes	244	60.0
Hospitals	27	6.6
Retirement homes	60	14.7
Other	0	0.0
Unknown	76	18.7
TOTAL	407	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/01/02].

Notes:

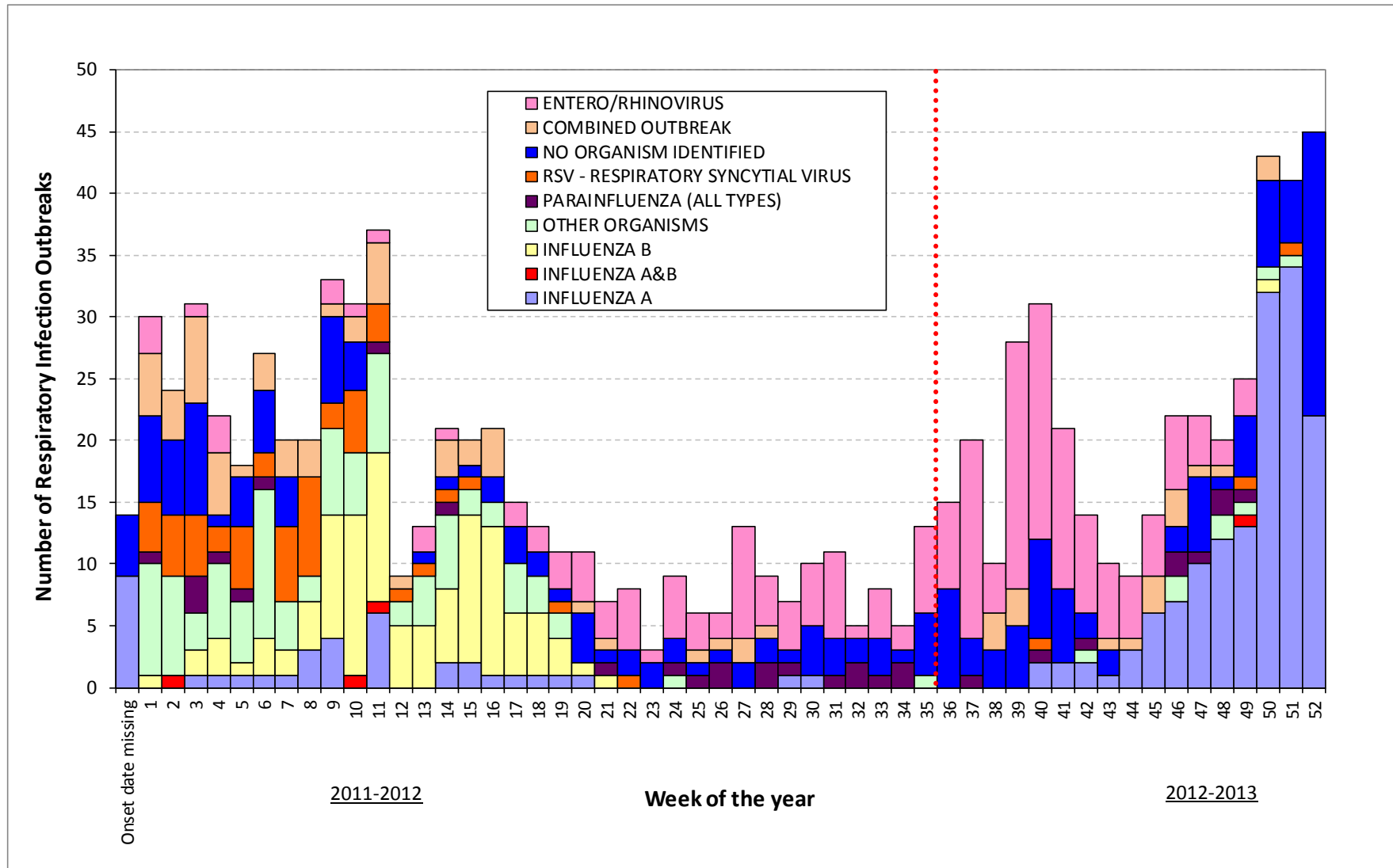
New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded through iPHIS in the current surveillance period; i.e. December 16, 2012 – December 29, 2012.

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.).

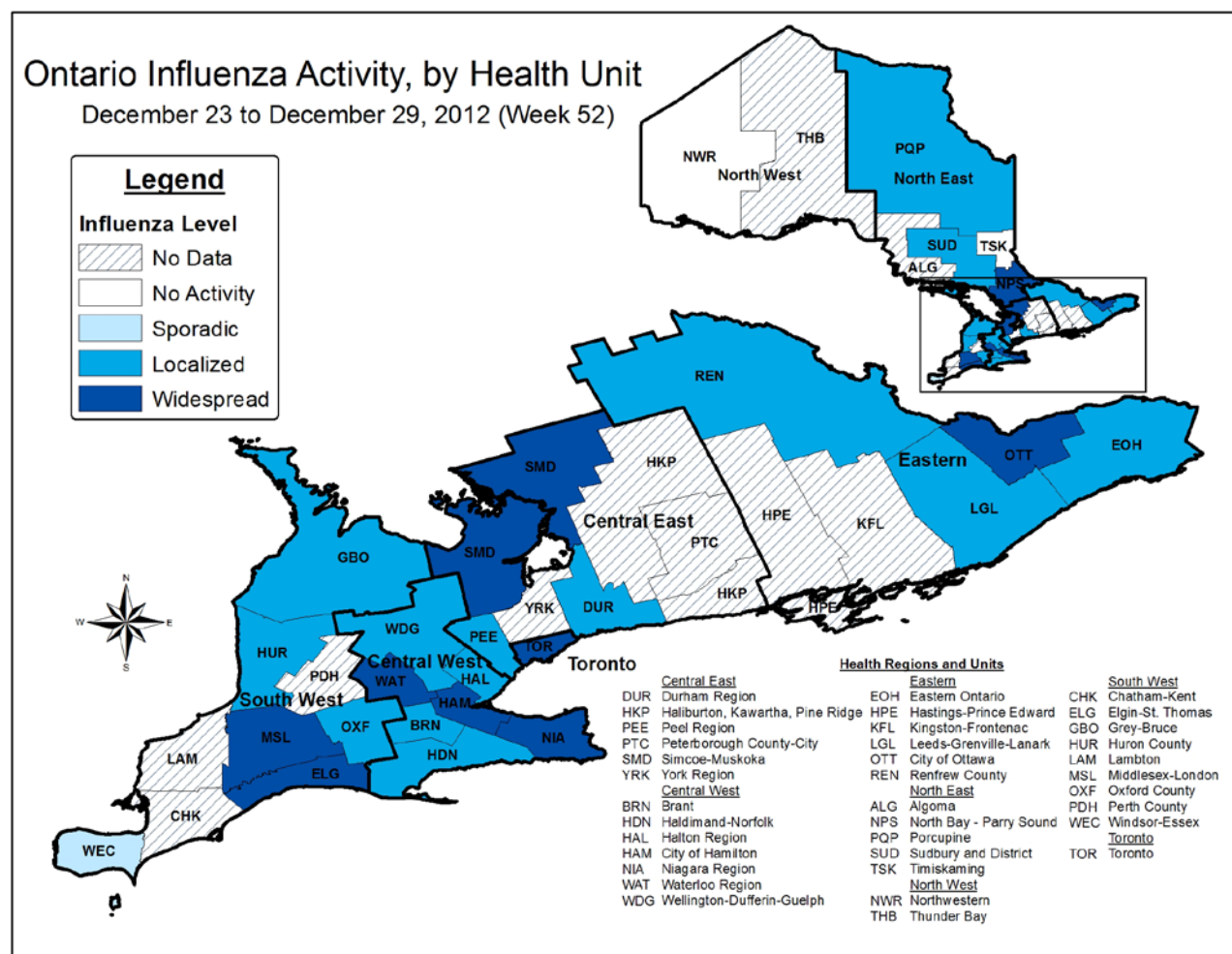
Other organisms include outbreaks involving other aetiological agents, such as human metapneumovirus, adenovirus, and coronavirus.

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 [2013/01/02].

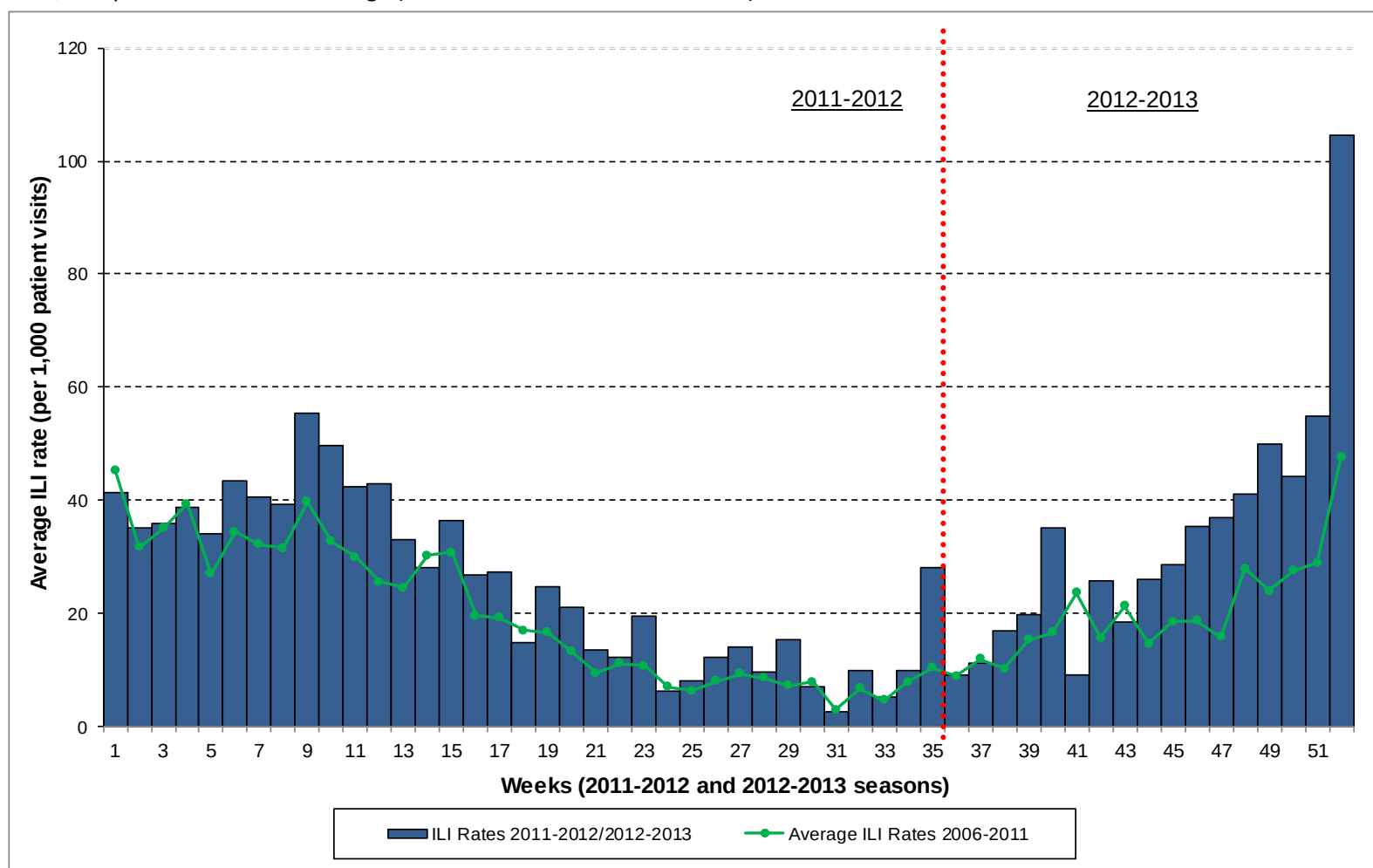
Figure 6. Influenza activity levels in Ontario during week 52 by health unit



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)

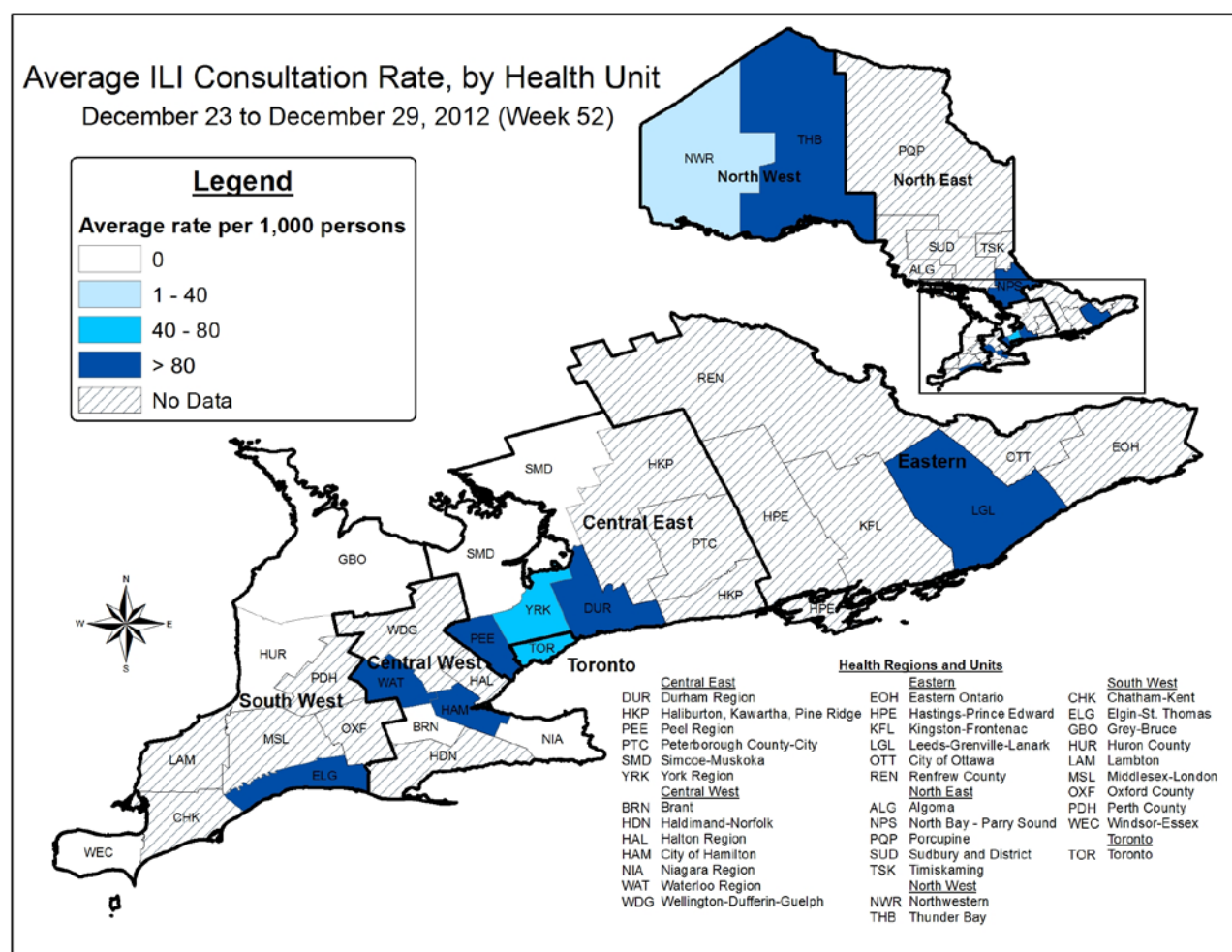


Source: Public Health Agency of Canada

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 52 by health unit*



Source: Public Health Agency of Canada

Note: Sentinels report ILI and patient data to the Public Health Agency of Canada; 32 sentinels reported in week 52, 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 52 by age group*

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	8	16	40	6	0	70
ILI Consultation Rate (per 1,000 patient visits)	140.35	219.18	104.44	38.22	0.00	104.48

Source: Public Health Agency of Canada

Note: Sentinel information is reported to the Public Health Agency of Canada; 32 sentinels reported in week 52.

* Week 52 ILI rates are not comparable to recent weeks 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 52 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	13 (124)	0 (0)	2 (4)	0 (0)	3 (6)	8 (118)	37.5 (5.1)
BRANT COUNTY	42 (332)	0 (1)	5 (89)	0 (2)	5 (103)	21 (296)	23.8 (34.8)
CHATHAM-KENT	22 (93)	0 (0)	7 (16)	0 (0)	11 (24)	18 (88)	61.1 (27.3)
CITY OF HAMILTON	18 (152)	0 (1)	1 (15)	0 (0)	3 (27)	8 (137)	37.5 (19.7)
CITY OF OTTAWA	9 (52)	0 (0)	0 (6)	0 (0)	1 (10)	3 (45)	33.3 (22.2)
CITY OF TORONTO	517 (2,879)	0 (13)	43 (241)	0 (17)	63 (331)	151 (2,372)	41.7 (14.0)
DURHAM REGIONAL	73 (518)	0 (2)	4 (36)	2 (3)	16 (66)	47 (472)	34.0 (14.0)
ELGIN-ST. THOMAS	16 (85)	0 (0)	6 (13)	0 (0)	9 (22)	15 (83)	60.0 (26.5)
EASTERN ONTARIO	11 (102)	0 (0)	7 (20)	0 (0)	7 (23)	9 (96)	77.8 (24.0)
GREY BRUCE	40 (372)	2 (2)	5 (82)	0 (0)	12 (115)	32 (348)	37.5 (33.0)
HALTON REGIONAL	55 (373)	1 (1)	9 (42)	0 (1)	15 (59)	40 (341)	37.5 (17.3)
HALDIMAND-NORFOLK	10 (95)	0 (1)	1 (17)	0 (0)	1 (25)	4 (83)	25.0 (30.1)
HALIBURTON-KAWARTHA-PINE RIDGE DISTRICT	51 (296)	0 (0)	1 (29)	0 (0)	17 (68)	36 (271)	47.2 (25.1)
HASTINGS AND PRINCE EDWARD COUNTIES	52 (347)	0 (0)	2 (76)	0 (0)	19 (107)	34 (316)	55.9 (33.9)
HURON COUNTY	15 (158)	0 (0)	1 (26)	0 (1)	2 (44)	9 (151)	22.2 (29.1)
KINGSTON-FRONTENAC AND LENNOX AND ADDINGTON	106 (407)	1 (4)	0 (58)	0 (0)	42 (138)	89 (384)	47.2 (35.9)
LAMBTON	14 (180)	0 (1)	1 (14)	0 (1)	5 (25)	10 (175)	50.0 (14.3)
LEEDS-GRENVILLE AND LANARK DISTRICT	26 (112)	0 (0)	2 (14)	0 (0)	11 (36)	18 (102)	61.1 (35.3)
MIDDLESEX-LONDON	28 (317)	0 (1)	9 (59)	0 (1)	11 (75)	22 (298)	50.0 (25.2)

Ontario Respiratory Virus Bulletin, 2012-2013 (Weeks 51 & 52: December 16, 2012 – December 29, 2012)

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	78 (365)	0 (0)	12 (33)	0 (1)	19 (58)	49 (310)	38.8 (18.7)
NORTH BAY PARRY SOUND DISTRICT	35 (296)	0 (0)	6 (27)	0 (0)	9 (39)	24 (275)	37.5 (14.2)
NORTHWESTERN	12 (100)	0 (1)	0 (4)	0 (0)	1 (9)	6 (93)	16.7 (9.7)
OXFORD COUNTY	17 (121)	0 (0)	2 (24)	0 (1)	2 (36)	12 (111)	16.7 (32.4)
PERTH DISTRICT	23 (194)	0 (0)	6 (33)	0 (2)	9 (43)	21 (190)	42.9 (22.6)
PEEL REGIONAL	259 (1,640)	0 (7)	4 (68)	0 (9)	12 (139)	41 (1,356)	29.3 (10.3)
PORCUPINE	23 (163)	0 (0)	5 (8)	0 (0)	11 (14)	23 (161)	47.8 (8.7)
PETERBOROUGH COUNTY-CITY	11 (170)	0 (0)	1 (26)	0 (0)	3 (37)	7 (163)	42.9 (22.7)
RENFREW COUNTY AND DISTRICT	7 (63)	0 (3)	3 (8)	0 (1)	3 (12)	4 (60)	75.0 (20.0)
SIMCOE MUSKOKA DISTRICT	191 (1,135)	0 (0)	11 (55)	0 (1)	23 (164)	72 (977)	31.9 (16.8)
SUDBURY AND DISTRICT	25 (197)	0 (0)	1 (3)	0 (0)	9 (15)	22 (190)	40.9 (7.9)
THUNDER BAY DISTRICT	19 (127)	0 (0)	0 (21)	0 (0)	2 (26)	6 (107)	33.3 (24.3)
TIMISKAMING	2 (25)	0 (0)	0 (0)	0 (0)	0 (0)	1 (24)	0.0 (0.0)
WATERLOO	72 (591)	2 (3)	11 (146)	0 (6)	23 (194)	59 (570)	39.0 (34.0)
WELLINGTON-DUFFERIN-GUELPH	83 (437)	2 (4)	7 (71)	0 (3)	13 (116)	39 (372)	33.3 (31.2)
WINDSOR-ESSEX COUNTY	24 (133)	0 (0)	1 (18)	0 (1)	11 (37)	21 (126)	52.4 (29.4)
YORK REGIONAL	107 (691)	0 (2)	16 (39)	0 (1)	16 (53)	51 (602)	31.4 (8.8)
OUT OF PROVINCE	7 (37)	0 (0)	0 (1)	0 (0)	1 (2)	2 (31)	50.0 (6.5)
TOTAL ONTARIO	2,113 (13,479)	8 (47)	192 (1,442)	2 (52)	420 (2,298)	1034 (11,894)	40.6 (19.3)

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/01/02].

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 3, 2013

Influenza strains	Ontario	Canada
Influenza A (H3N2) A/Victoria/361/2011-like	62	136
Influenza A (H1N1)pdm09 A/California/07/09-like	16	17
Influenza B B/Brisbane/60/2008-like*	3	4
Influenza B B/Wisconsin/01/2010-like	12	20

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.

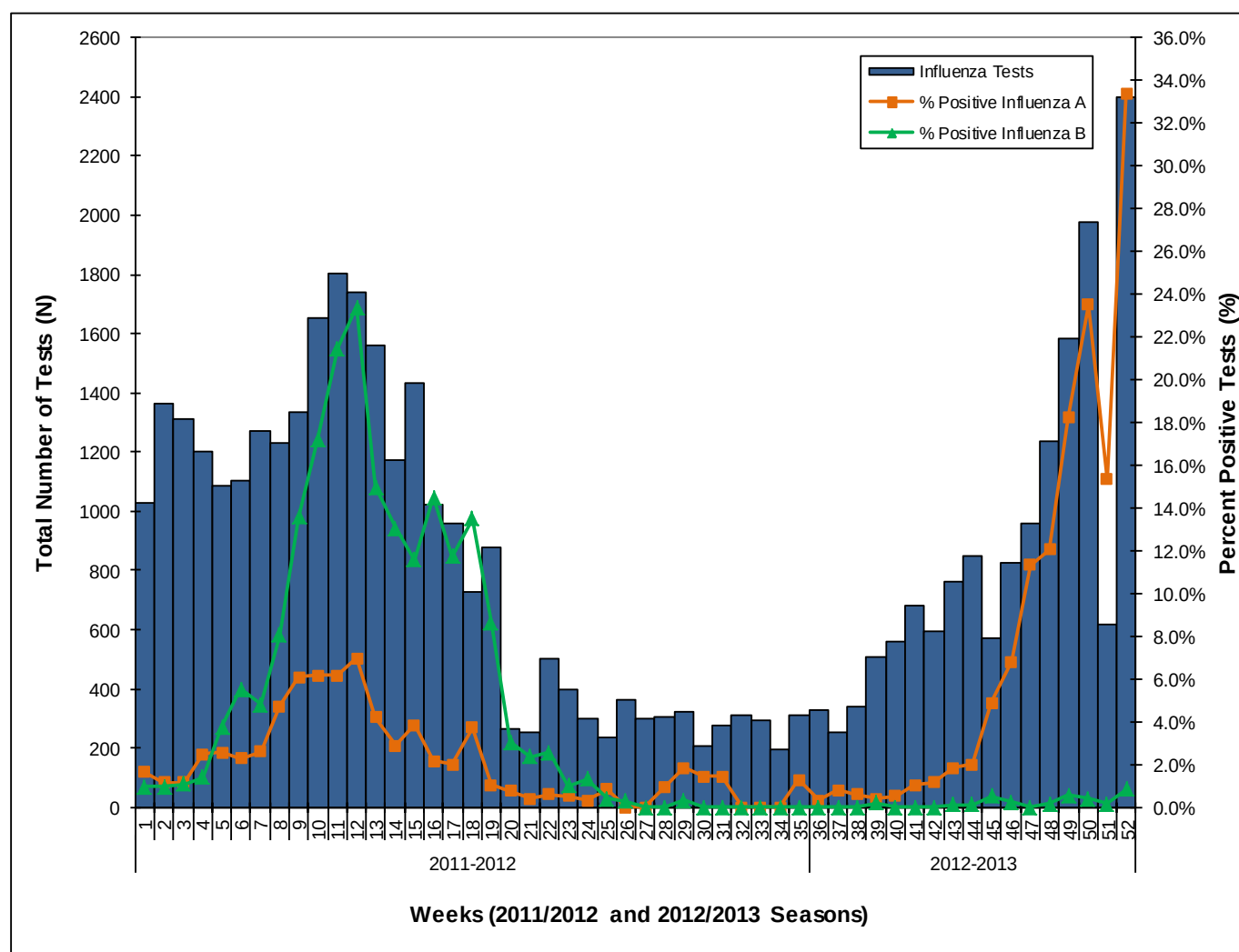
Table III. Amantadine, Oseltamivir and Zanamivir susceptibility assays completed on Ontario and Canadian influenza isolates at the National Microbiology Laboratory, September 1, 2012 to January 3, 2013

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)	71	0	138	0	0	38	0	97	0	37	0	96
Influenza A (H1N1)pdm09	9	0	11	0	0	11	0	13	0	11	0	13
Influenza B	NA	NA	NA	NA	0	10	0	18	0	10	0	18

(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 9:00 AM on January 3, 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 52

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 52 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>	1 (8.3)	13 (2.5)	12	517
<i>Chlamydophila pneumoniae</i>	0 (0.0)	1 (0.2)	12	517

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/01/02].

Table V. Number and percent positivity (in brackets) of respiratory specimens tested by all methods at PHOL for any *Bordetella* species during week 52 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>	3 (3.6)	643 (9.3)	84	6,892
<i>Bordetella parapertussis</i>	0 (0.0)	40 (0.6)	84	6,892
<i>Bordetella holmesii</i>	0 (0.0)	3 (0.0)	84	6,892

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/01/02].