



Ontario Respiratory Virus Bulletin | 2012-2013

SURVEILLANCE WEEK 16 (April 14, 2013 – April 20, 2013)

This issue of the Ontario Respiratory Virus Bulletin provides information on the surveillance period from April 14, 2013 to April 20, 2013 (Week 16). Unless otherwise specified, **data presented are for week 16** and data extraction and analysis for this issue of the Bulletin occurred on Wednesday, April 24, 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 Activity in Ontario

Measure of activity	Assessment of measure compared to previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory confirmed influenza cases	Similar	There were 86 influenza cases reported ¹ in week 16 (Table 1), which was slightly lower than the number (93) reported in week 15. In week 16, 15% of the cases reported were influenza A and 85% were influenza B. Percent positivity ² of laboratory tests for all influenza types in Ontario was 7.5% for week 16 (Table 3), which was similar to the percent positivity in week 15 (7.6%).
Institutional respiratory infection outbreaks	Lower	Nine new institutional respiratory infection outbreaks were reported ³ in week 16, including three influenza B outbreaks and six outbreaks for which no aetiological agent was reported (Table 4, Figure 5).
Influenza activity levels reported by health units	Similar	Eight health units reported 'localized' levels of influenza activity and 14 health units reported 'sporadic' levels of influenza activity (Figure 6). No health units reported 'widespread' activity.
ILI consultation rate reported by sentinel physicians	Lower	The provincial influenza-like-illness (ILI) consultation rate ⁴ in week 16 (15.03/1,000 patient visits) was lower than the rate in week 15 (22.33/1,000 patient visits) (Figure 7).
OVERALL ASSESSMENT	<i>Slightly lower</i>	From week 15 to 16, overall the indicators show that influenza activity was slightly lower with influenza B as the current predominant circulating influenza virus type.
Measures of severity for influenza		
Hospitalizations among lab confirmed cases of influenza	Higher	There were 105 hospitalized cases reported ¹ in week 16, which was higher than the number (67) reported in week 15 (Table 2).
Deaths among lab confirmed cases of influenza	Higher	There were 5 deaths reported ¹ in week 16, which was higher than the number (0) reported in week 15 (Table 2).

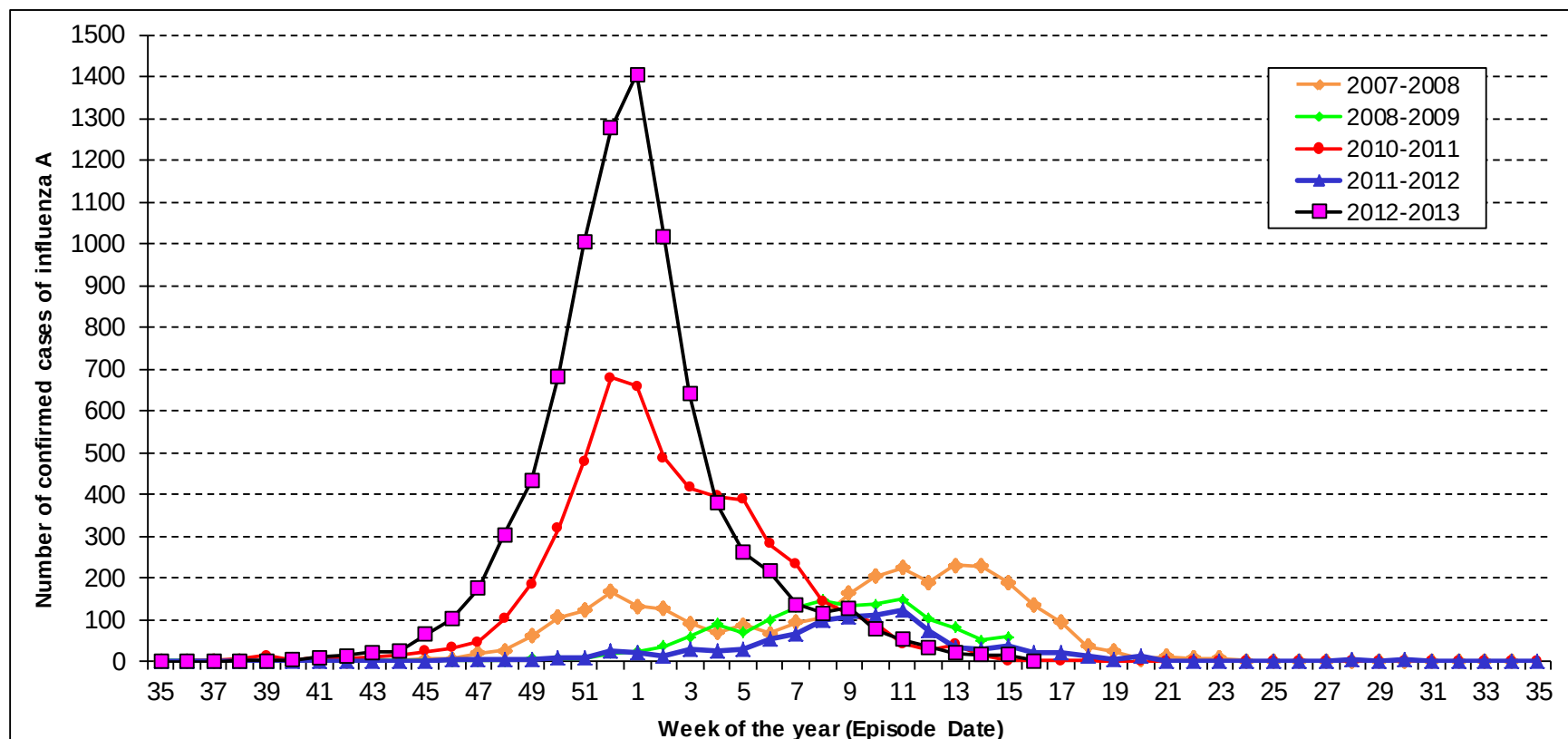
1. The number of **reported** cases needs to be interpreted with caution because there is a lag between the onset of illness, hospital admission or death and when this information is reported to public health. 2. Positivity reflects positive specimens reported to Public Health Ontario by the Centre for 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

- Influenza activity has been relatively stable in recent weeks and is no longer the dominant circulating respiratory virus in Ontario, with the proportion of respiratory samples testing positive for all influenza virus types now at 7.5% (with influenza A at 1.1% and influenza B at 6.4%).*
 - The majority of influenza cases this season (91.8%; 8,658/9,428) were influenza A (Table 1). The dominant circulating influenza A subtype is H3N2, representing 91.5% of all subtyped influenza A positive specimens.*
 - In the season to date, 1,183 confirmed institutional respiratory infection outbreaks have been reported, 575 (48.6%) of which were laboratory confirmed as influenza A and 32 (2.7%) of which were laboratory confirmed as influenza B (Table 4).
 - A total of 3,290 hospitalizations and 250 deaths have been reported among lab confirmed influenza cases in the current surveillance season to April 20 (Table 2). The majority of hospitalizations and deaths occurred in influenza A cases (93.1% and 96.4%, respectively).
- The **cause of influenza-like-illness (ILI) activity** in the 2012-2013 surveillance season is changing as the season progresses.
 - At the beginning of the season, entero/rhinovirus was the causative organism identified in most institutional respiratory infection outbreaks. Subsequently, influenza A became the most common causative organism identified. The number of influenza A outbreaks has since declined and currently, a variety of causative organisms are being identified in institutional respiratory infection outbreaks, including influenza B (Table 4, Figure 5).
 - For the season to date, influenza A has had the highest percent positivity overall, followed by respiratory syncytial virus (Table 3).*
- Among all **circulating respiratory viruses in week 16** (Table 3):
 - Human metapneumovirus had the highest percent positivity (6.5%), which was lower compared to the previous week (7.4%).*
 - Influenza B had the second highest percent positivity (6.4%), which was higher compared to the previous week (5.7%).*

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

Figure 1. Number of reported confirmed cases of influenza A by episode date: Ontario, September 1, 2007 to April 20, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/04/24].

Notes:

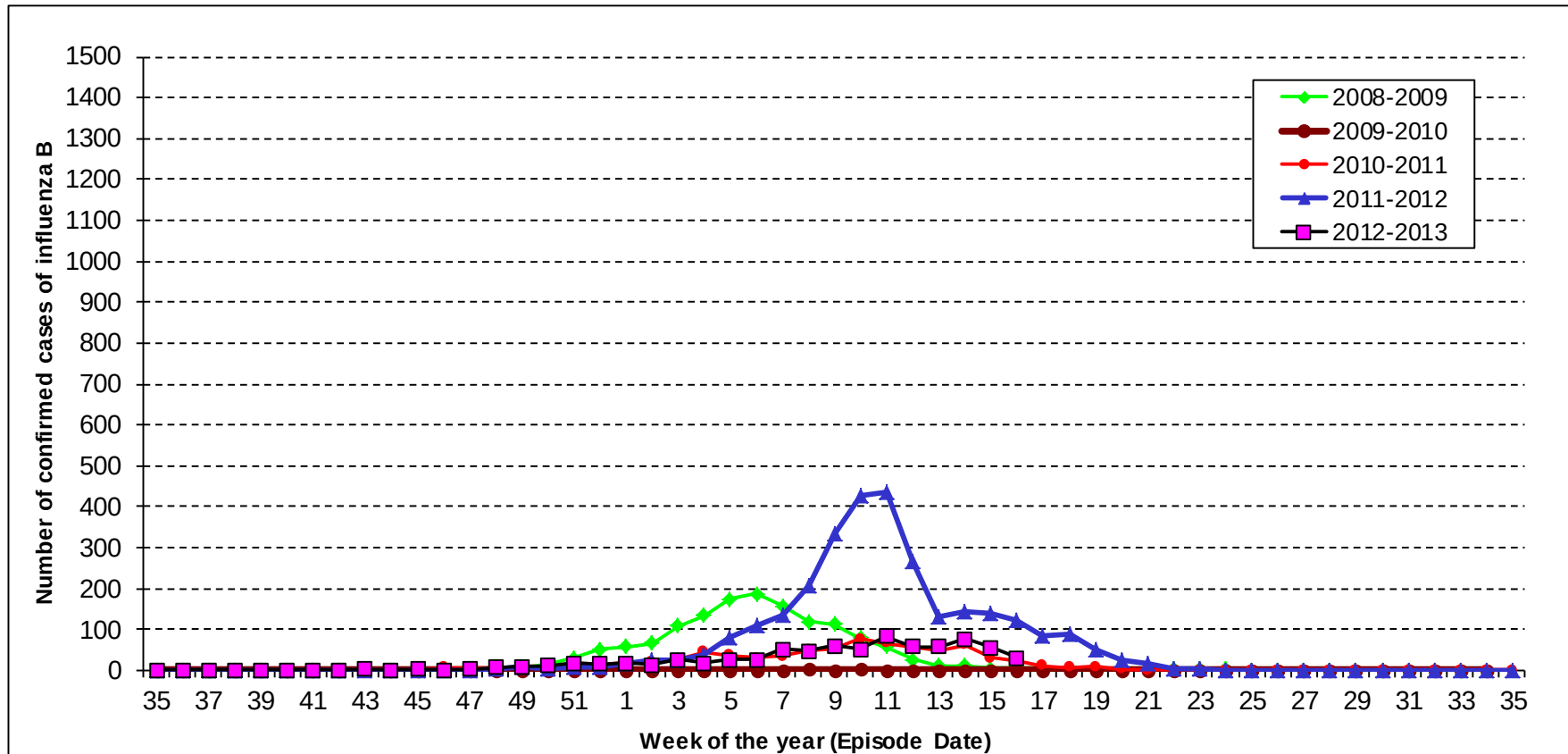
Interpret tail of 2012-2013 line with caution due to reporting lags.

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. Number of reported confirmed cases of influenza B by episode date: Ontario, September 1, 2008 to April 20, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/04/24].

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 16: April 14, 2013 – April 20, 2013)

Table 1. Number of reported confirmed influenza cases by health unit and health region: Ontario, week 16 and cumulative (in brackets) for the 2012-2013 season

Region	Health Unit	Influenza A				Influenza A & B	Influenza B	TOTAL
		(H1N1) pdm09	No Subtype/ Not Subtyped	Other*	H3			
North West	Northwestern	0 (2)	0 (34)	0 (0)	0 (29)	0 (0)	2 (14)	2 (79)
	Thunder Bay District	0 (3)	0 (26)	0 (0)	0 (55)	0 (0)	0 (17)	0 (101)
	TOTAL NORTH WEST	0 (5)	0 (60)	0 (0)	0 (84)	0 (0)	2 (31)	2 (180)
North East	Algoma	0 (1)	0 (63)	0 (0)	0 (45)	0 (0)	2 (16)	2 (125)
	North Bay Parry Sound District	0 (1)	0 (179)	0 (0)	0 (93)	0 (0)	1 (12)	1 (285)
	Porcupine	0 (1)	0 (31)	0 (1)	0 (30)	0 (0)	1 (2)	1 (65)
	Sudbury & District	0 (2)	0 (39)	0 (2)	0 (59)	0 (0)	0 (3)	0 (105)
	Timiskaming	0 (1)	0 (16)	0 (0)	0 (10)	0 (0)	0 (0)	0 (27)
	TOTAL NORTH EAST	0 (6)	0 (328)	0 (3)	0 (237)	0 (0)	4 (33)	4 (607)
Eastern	City of Ottawa	0 (4)	0 (470)	0 (0)	0 (22)	0 (0)	3 (35)	3 (531)
	Eastern Ontario	0 (1)	0 (55)	0 (0)	0 (55)	0 (0)	1 (5)	1 (116)
	Hastings & Prince Edward Counties	0 (3)	0 (49)	0 (0)	0 (87)	0 (0)	0 (4)	0 (143)
	Kingston, Frontenac, Lennox & Addington	0 (3)	0 (120)	0 (0)	0 (112)	0 (0)	3 (23)	3 (258)
	Leeds, Grenville And Lanark District	0 (1)	0 (57)	0 (0)	0 (54)	0 (0)	0 (18)	0 (130)
	Renfrew County And District	0 (1)	0 (35)	0 (0)	0 (14)	0 (0)	1 (11)	1 (61)
	TOTAL EASTERN	0 (13)	0 (786)	0 (0)	0 (344)	0 (0)	8 (96)	8 (1239)
Central East	Durham Region	1 (9)	2 (109)	0 (1)	0 (68)	0 (0)	3 (32)	6 (219)
	Haliburton, Kawartha, Pine Ridge	0 (3)	0 (89)	0 (0)	0 (40)	0 (0)	2 (14)	2 (146)
	Peel Region	0 (38)	1 (449)	0 (1)	0 (281)	0 (0)	8 (92)	9 (861)
	Peterborough County-City	0 (3)	0 (99)	0 (0)	0 (76)	0 (1)	0 (8)	0 (187)
	Simcoe Muskoka District	0 (7)	1 (271)	0 (0)	1 (123)	0 (0)	1 (16)	3 (417)
	York Region	0 (13)	1 (161)	0 (0)	0 (119)	0 (0)	2 (29)	3 (322)
	TOTAL CENTRAL EAST	1 (73)	5 (1178)	0 (2)	1 (707)	0 (1)	16 (191)	23 (2152)
Toronto	Toronto	0 (134)	1 (646)	0 (1)	2 (1068)	0 (1)	19 (181)	22 (2031)
	TOTAL TORONTO	0 (134)	1 (646)	0 (1)	2 (1068)	0 (1)	19 (181)	22 (2031)
South West	Chatham-Kent	0 (2)	0 (31)	0 (0)	0 (27)	0 (0)	3 (11)	3 (71)
	Elgin-St. Thomas	0 (1)	0 (41)	0 (1)	0 (22)	0 (0)	0 (5)	0 (70)
	Grey Bruce	0 (0)	0 (79)	0 (0)	0 (40)	0 (0)	2 (7)	2 (126)
	Huron County	0 (1)	0 (45)	0 (1)	0 (20)	0 (0)	2 (4)	2 (71)
	Lambton County	0 (1)	0 (39)	0 (0)	0 (24)	0 (0)	1 (5)	1 (69)
	Middlesex-London	0 (4)	0 (374)	0 (0)	0 (71)	0 (0)	3 (20)	3 (469)
	Oxford County	0 (1)	0 (33)	0 (2)	0 (30)	0 (0)	0 (1)	0 (67)
	Perth District	0 (2)	0 (22)	0 (0)	0 (35)	0 (0)	0 (3)	0 (62)
	Windsor-Essex County	0 (5)	0 (68)	0 (0)	0 (46)	0 (0)	2 (64)	2 (183)
	TOTAL SOUTHWEST	0 (17)	0 (732)	0 (4)	0 (315)	0 (0)	13 (120)	13 (1188)
Central West	Brant County	0 (5)	0 (69)	0 (0)	0 (94)	0 (0)	0 (3)	0 (171)
	City Of Hamilton	0 (3)	1 (543)	0 (1)	1 (40)	0 (0)	4 (32)	6 (619)
	Haldimand-Norfolk	0 (1)	0 (40)	0 (0)	0 (14)	0 (0)	1 (13)	1 (68)
	Halton Region	0 (3)	1 (210)	0 (0)	0 (52)	0 (0)	1 (20)	2 (285)
	Niagara Region	0 (4)	0 (169)	0 (0)	0 (70)	0 (0)	0 (10)	0 (253)
	Waterloo Region	0 (8)	0 (223)	0 (0)	0 (135)	0 (0)	3 (17)	3 (383)
	Wellington-Dufferin-Guelph	0 (8)	0 (117)	0 (1)	0 (105)	0 (0)	2 (21)	2 (252)
	TOTAL CENTRAL WEST	0 (32)	2 (1371)	0 (2)	1 (510)	0 (0)	11 (116)	14 (2031)
	TOTAL ONTARIO	1 (280)	8 (5101)	0 (12)	4 (3265)	0 (2)	73 (768)	86 (9428)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/04/24].

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

Table 2. Hospitalizations and deaths among confirmed influenza cases by age group: Ontario, week 16 and cumulative (rates, and numbers in brackets) for the 2012-2013 season

Age Group	Number of Hospitalizations	Cumulative Rate per 100,000	Number of Deaths	Cumulative Rate per 100,000
<1	4 (186)	127.28	0 (2)	1.37
1-4	13 (277)	47.34	0 (3)	0.51
5-14	11 (123)	8.28	0 (1)	0.07
15-24	1 (64)	3.51	0 (0)	0.00
25-44	9 (228)	6.13	0 (9)	0.24
45-64	20 (525)	13.82	1 (28)	0.74
65+	47 (1,884)	95.40	4 (207)	10.48
Unknown	0 (3)	-	0 (0)	-
Total	105 (3,290)	24.31	5 (250)	1.85

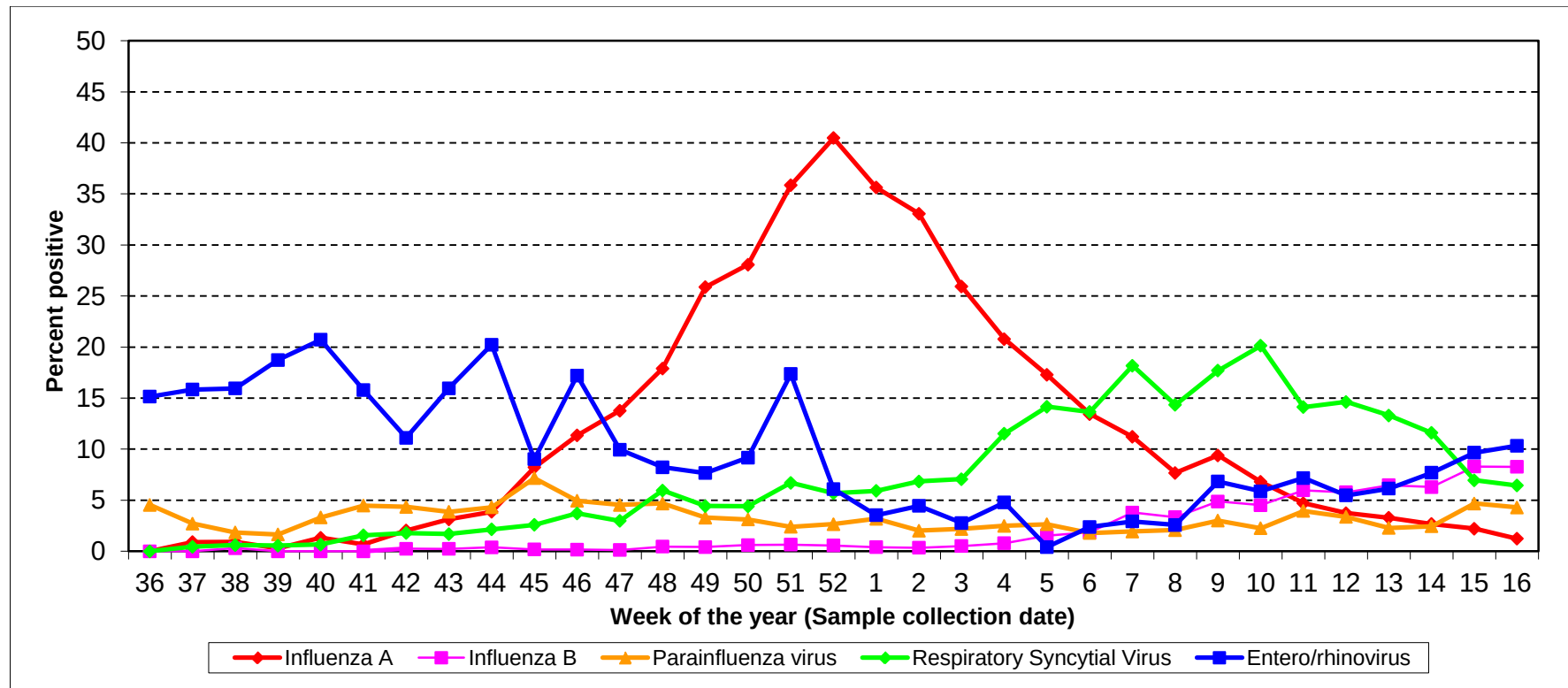
Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/04/24]. Population data obtained from IntelliHEALTH Ontario, retrieved by Public Health Ontario [2013/03/12].

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 increased influenza activity over the prior few weeks, there may be additional delays in the reporting of hospitalizations and deaths beyond the usually expected reporting time lag.

Deaths in any influenza case are included; death attribution is not considered. 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: Ontario, September 2, 2012 to April 20, 2013



Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/04/23].

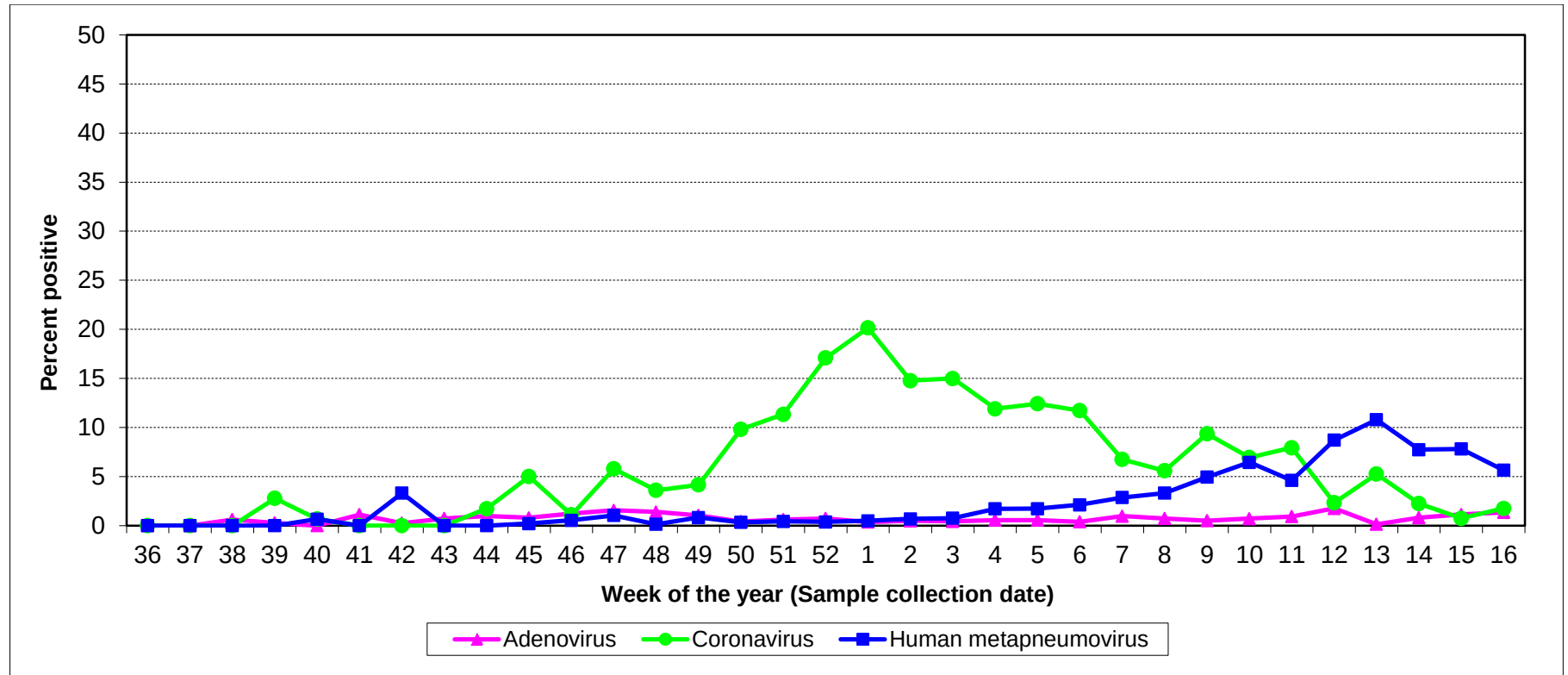
Notes:

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: Ontario, September 2, 2012 to April 20, 2013



Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/04/23].

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.

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: Ontario, week 16 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 (All)	86 (7.53)	8,944 (17.41)	1,143	51,387
Influenza A	13 (1.14)	8,220 (16.00)	1,143	51,387
Influenza B	73 (6.39)	724 (1.41)	1,143	51,387
Parainfluenza virus	43 (4.32)	1,113 (2.73)	996	40,721
Adenovirus	8 (0.80)	252 (0.62)	996	40,619
Respiratory Syncytial Virus	66 (6.16)	3,918 (8.70)	1,071	45,023
Enterovirus/rhinovirus	23 (5.39)	1,324 (7.10)	427	18,645
Human metapneumovirus	64 (6.54)	945 (2.53)	978	37,287
Coronavirus	5 (1.28)	589 (4.14)	391	14,235

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 16, 2013. Please note that the last version received from PHAC as of 1:00 p.m. on April 24, 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: Ontario, week 16 and total for the 2012-2013 season

Institutional Respiratory Infection Outbreaks		
New outbreaks	N	% (of outbreaks)
Influenza A (All subtypes)	0	0.0
Influenza B	3	33.3
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	6	66.7
TOTAL	9	100.0
Total respiratory infection outbreaks in the season to date		
Influenza A (All subtypes)	575	48.6
Influenza B	32	2.7
Influenza A and B	4	0.3
Parainfluenza (All types)	29	2.5
RSV	58	4.9
Combined outbreaks	80	6.8
Other organisms	108	9.1
Entero/rhinovirus	167	14.1
No organism identified	130	11.0
TOTAL	1,183	100.0
Types of institutions –All outbreaks in the season to date		
Long-term care homes	732	61.9
Hospitals	84	7.1
Retirement homes	207	17.5
Other	8	0.7
Unknown	152	12.8
TOTAL	1,183	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/04/24].

Notes:

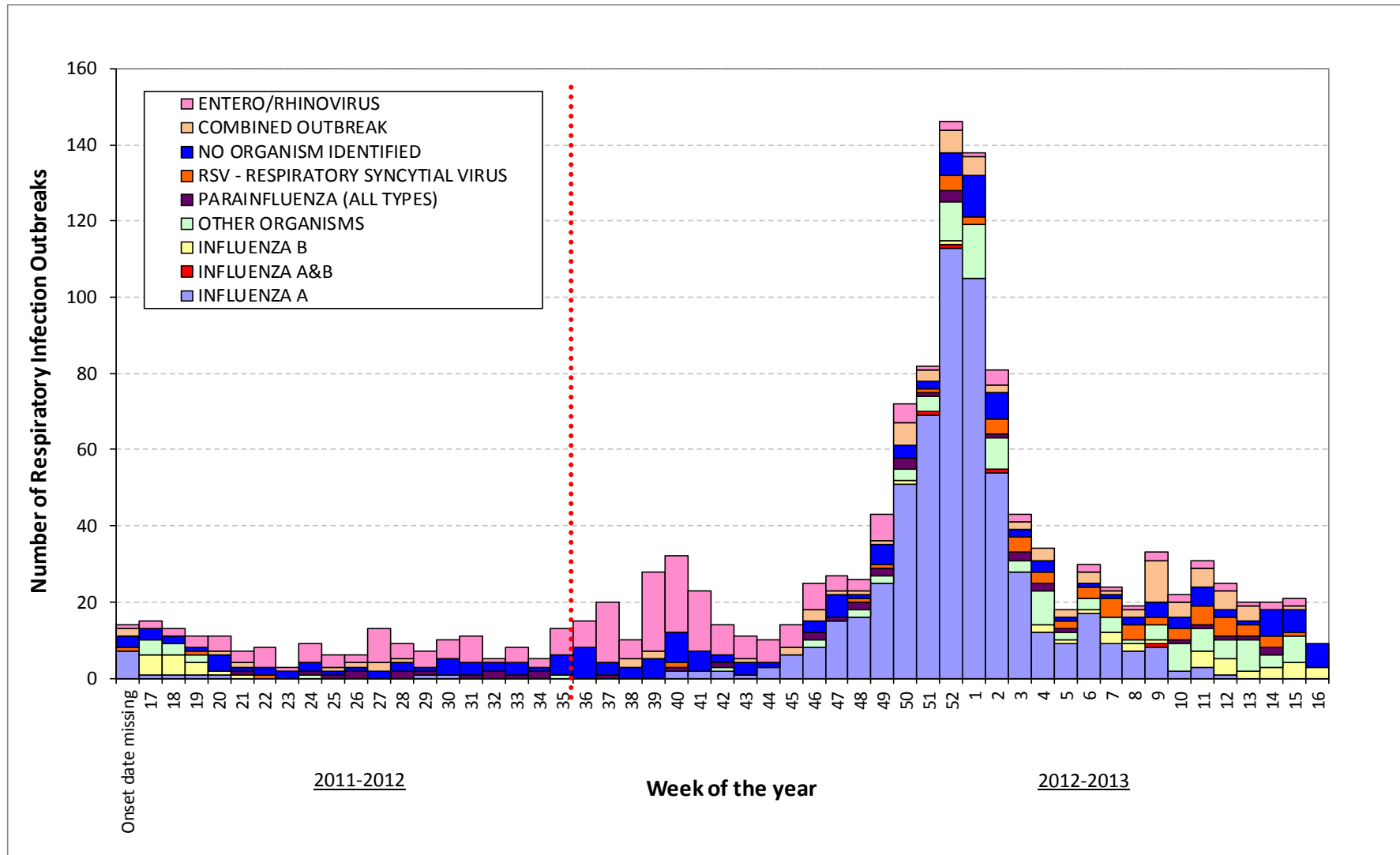
New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded through iPHIS in the current surveillance period; i.e. April 14, 2013 – April 20, 2013.

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.).

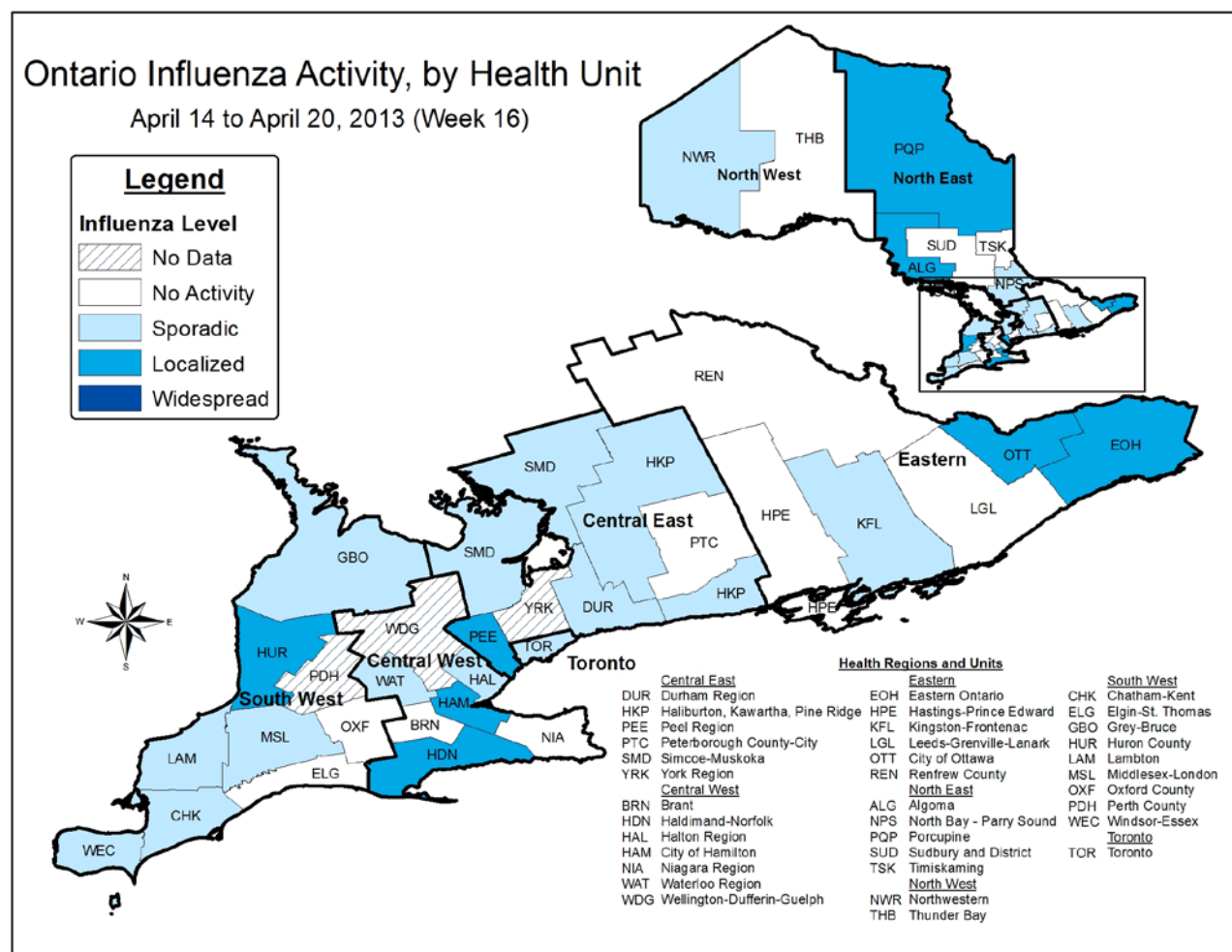
Other organisms include outbreaks involving other aetiological agents, such as human metapneumovirus, adenovirus, and coronavirus.

Figure 5. Institutional respiratory infection outbreaks by week of illness onset in the first case: Ontario, April 22, 2012 to April 20, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/04/24].

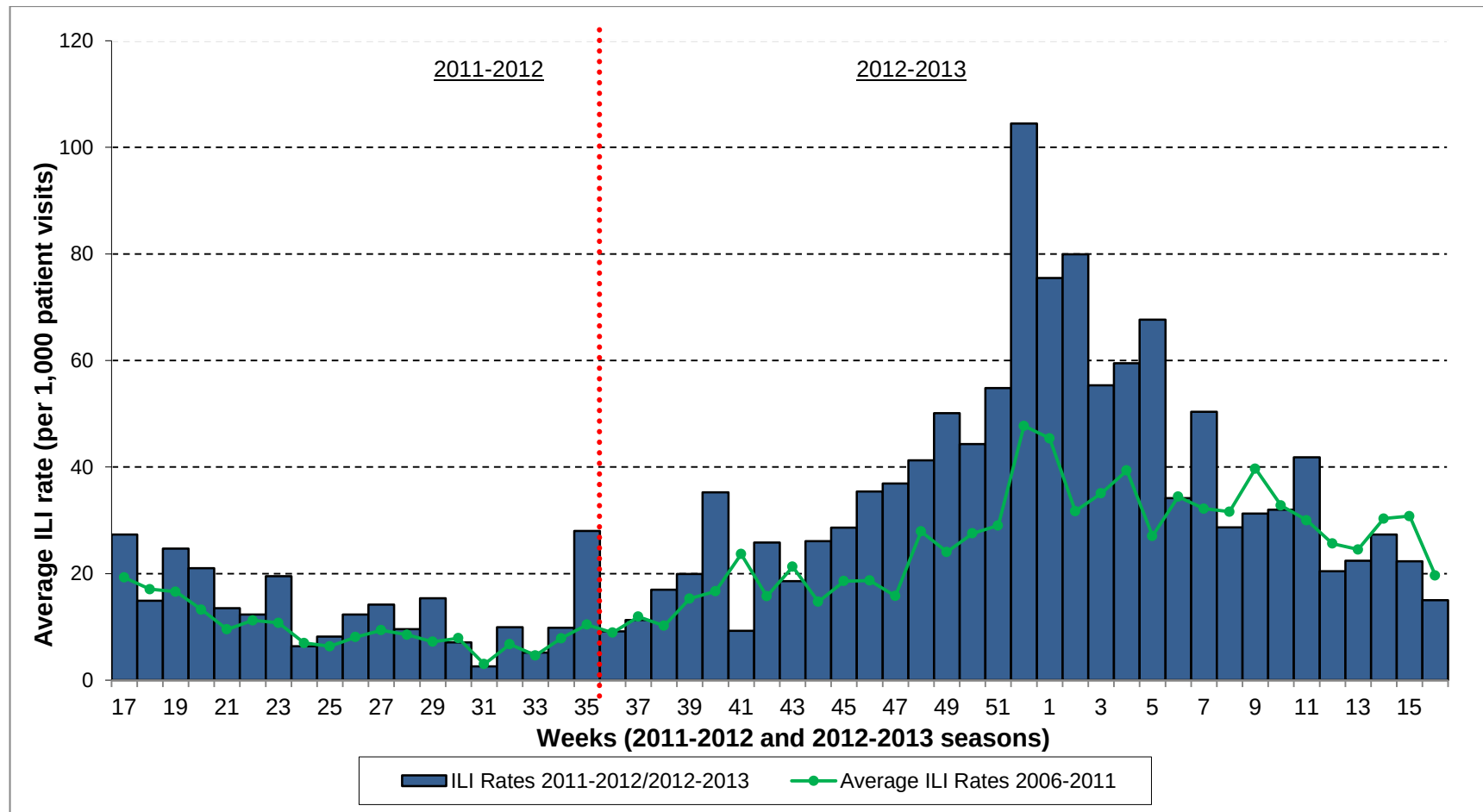
Figure 6. Influenza activity levels by health unit: Ontario, week 16



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 4:00 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 2012-2013 season](#).

Figure 7. Average influenza-like-illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinels by report week compared to historical average (2006-2007 to 2011-2012 seasons): Ontario, April 22, 2012 to April 20, 2013



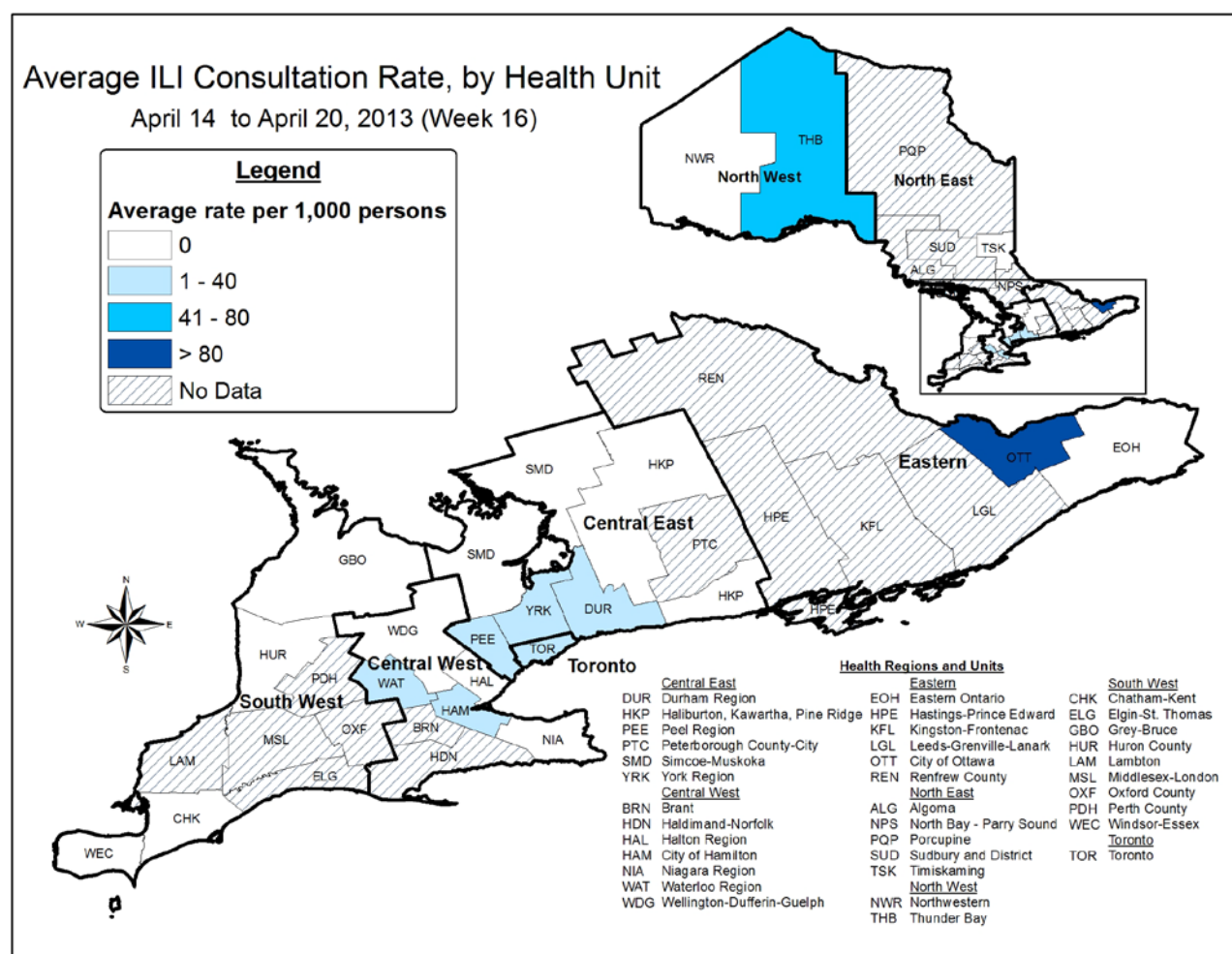
Source: Public Health Agency of Canada

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) by health unit as reported by sentinels: Ontario, week 16*



Source: Public Health Agency of Canada

Note: Sentinels report ILI and patient data to the Public Health Agency of Canada; 56 sentinels reported in week 16, 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) by age group as reported by sentinels: Ontario, week 16

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	5	4	11	2	0	22
ILI Consultation Rate (per 1,000 patient visits)	45.45	28.78	13.37	5.10	0.00	15.03

Source: Public Health Agency of Canada

Note: Sentinel information is reported to the Public Health Agency of Canada; 56 sentinels reported in week 16.

* Small numbers of sentinels reporting can make the ILI rates unstable. 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 by health unit: Ontario, week 16 and cumulative (in brackets) for the 2012-2013 season

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	10 (554)	0 (19)	0 (47)	0 (0)	0 (104)	5 (545)	0.0 (19.1)
BRANT COUNTY	4 (697)	0 (2)	0 (102)	0 (5)	0 (158)	3 (674)	0.0 (23.4)
CHATHAM-KENT	4 (252)	0 (8)	0 (27)	0 (2)	0 (53)	4 (247)	0.0 (21.5)
CITY OF HAMILTON	7 (401)	2 (4)	0 (46)	0 (3)	0 (93)	3 (379)	0.0 (24.5)
CITY OF OTTAWA	3 (164)	0 (5)	0 (23)	0 (4)	0 (43)	3 (157)	0.0 (27.4)
CITY OF TORONTO	175 (7,901)	13 (108)	0 (1,192)	0 (162)	0 (1,647)	151 (7,616)	0.0 (21.6)
DURHAM REGIONAL	21 (1,311)	0 (35)	0 (86)	0 (24)	0 (173)	15 (1,259)	0.0 (13.7)
ELGIN-ST. THOMAS	1 (226)	0 (3)	0 (32)	0 (1)	0 (57)	0 (223)	0.0 (25.6)
EASTERN ONTARIO	7 (315)	1 (4)	0 (52)	0 (1)	0 (86)	7 (310)	0.0 (27.7)
GREY BRUCE	3 (646)	0 (7)	0 (92)	0 (1)	0 (134)	3 (625)	0.0 (21.4)
HALTON REGIONAL	25 (964)	1 (13)	0 (72)	0 (4)	0 (154)	20 (924)	0.0 (16.7)
HALDIMAND-NORFOLK	7 (255)	0 (12)	0 (21)	0 (2)	0 (49)	7 (240)	0.0 (20.4)
HALIBURTON-KAWARTHA-PINE RIDGE DISTRICT	4 (678)	1 (13)	0 (49)	0 (3)	0 (131)	4 (665)	0.0 (19.7)
HASTINGS AND PRINCE EDWARD COUNTIES	4 (634)	0 (4)	0 (114)	0 (2)	0 (146)	4 (624)	0.0 (23.4)
HURON COUNTY	4 (266)	2 (3)	0 (30)	0 (1)	0 (60)	4 (264)	0.0 (22.7)
KINGSTON-FRONTENAC AND LENNOX AND ADDINGTON	20 (996)	1 (25)	0 (144)	0 (5)	0 (255)	17 (984)	0.0 (25.9)
LAMBTON	4 (395)	0 (5)	0 (31)	0 (1)	0 (64)	4 (394)	0.0 (16.2)
LEEDS-GRENVILLE AND LANARK DISTRICT	4 (373)	0 (14)	0 (55)	0 (1)	0 (86)	2 (367)	0.0 (23.4)
MIDDLESEX-LONDON	11 (573)	2 (7)	0 (80)	0 (4)	0 (122)	8 (549)	0.0 (22.2)

Ontario Respiratory Virus Bulletin, 2012-2013 (Week 16: April 14, 2013 – April 20, 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	8 (1,025)	0 (7)	0 (84)	0 (8)	0 (212)	7 (970)	0.0 (21.9)
NORTH BAY PARRY SOUND DISTRICT	15 (752)	1 (7)	0 (74)	0 (0)	0 (115)	10 (740)	0.0 (15.5)
NORTHWESTERN	7 (443)	0 (14)	0 (25)	0 (3)	0 (58)	4 (432)	0.0 (13.4)
OXFORD COUNTY	3 (251)	0 (0)	0 (34)	0 (1)	0 (55)	3 (244)	0.0 (22.5)
PERTH DISTRICT	5 (331)	0 (3)	0 (36)	0 (2)	1 (55)	5 (328)	20.0 (16.8)
PEEL REGIONAL	81 (3,935)	6 (70)	0 (314)	3 (45)	4 (602)	78 (3,835)	5.1 (15.7)
PORCUPINE	8 (433)	1 (2)	0 (32)	0 (3)	0 (63)	8 (428)	0.0 (14.7)
PETERBOROUGH COUNTY-CITY	7 (417)	2 (10)	0 (43)	0 (4)	0 (75)	7 (400)	0.0 (18.8)
RENFREW COUNTY AND DISTRICT	0 (188)	0 (9)	0 (18)	0 (1)	0 (38)	0 (187)	0.0 (20.3)
SIMCOE MUSKOKA DISTRICT	30 (2,549)	0 (18)	0 (130)	0 (5)	0 (415)	22 (2,495)	0.0 (16.6)
SUDBURY AND DISTRICT	6 (673)	0 (1)	0 (63)	0 (3)	0 (107)	4 (659)	0.0 (16.2)
THUNDER BAY DISTRICT	12 (405)	0 (17)	0 (54)	0 (2)	0 (79)	4 (377)	0.0 (21.0)
TIMISKAMING	3 (114)	1 (1)	0 (12)	0 (2)	0 (26)	2 (110)	0.0 (23.6)
WATERLOO	16 (1,072)	2 (14)	0 (174)	0 (12)	0 (257)	14 (1,057)	0.0 (24.3)
WELLINGTON-DUFFERIN-GUELPH	14 (1,046)	2 (18)	0 (106)	0 (8)	0 (223)	13 (1,005)	0.0 (22.2)
WINDSOR-ESSEX COUNTY	15 (592)	0 (65)	0 (49)	0 (5)	0 (110)	13 (572)	0.0 (19.2)
YORK REGIONAL	29 (1,784)	2 (18)	1 (166)	0 (19)	1 (267)	26 (1,709)	3.8 (15.6)
OUT OF PROVINCE	0 (101)	0 (2)	0 (5)	0 (3)	0 (20)	0 (98)	0.0 (20.4)
TOTAL ONTARIO	577 (33,712)	40 (567)	1 (3,714)	3 (352)	6 (6,392)	484 (32,692)	1.2 (19.6)

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/04/23].

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 influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2012 to April 25, 2013

Influenza strains	Ontario	Canada
Influenza A (H3N2) A/Victoria/361/2011-like	191	560
Influenza A (H1N1)pdm09 A/California/07/09-like	153	186
Influenza B B/Brisbane/60/2008-like*	25	68
Influenza B B/Wisconsin/01/2010-like	146	283

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

Note: The World Health Organization (WHO) 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.

On February 21, 2013, the WHO released the recommended influenza vaccine strains for the Northern Hemisphere for the [2013-2014 season](#): A/California/7/2009-like (A H1N1pdm09-like virus); A/Victoria/361/2011 (H3N2)-like virus; and B/Massachusetts/2/2012-like virus.

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

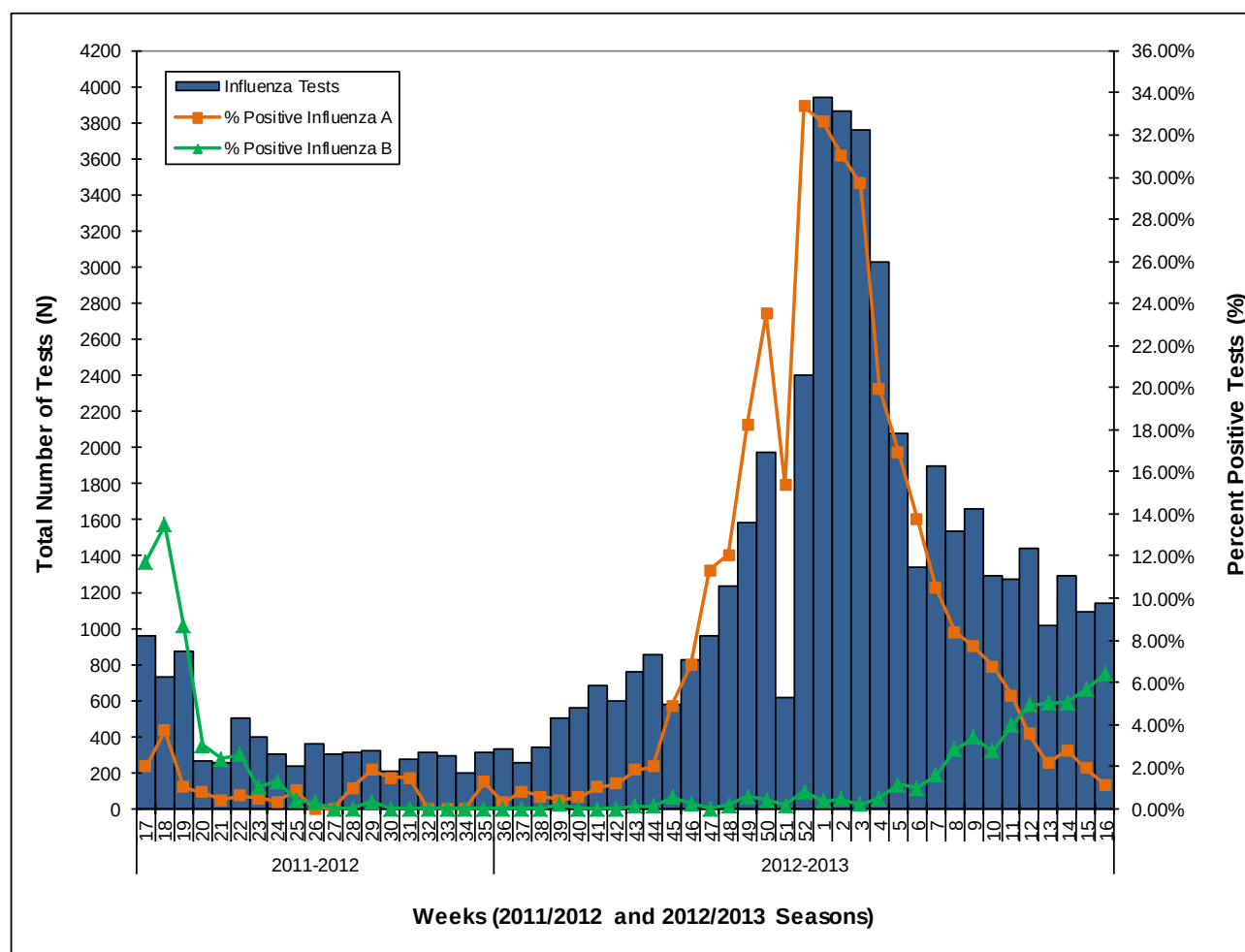
Table III. Amantadine, oseltamivir and zanamivir susceptibility assays completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2012 to April 25, 2013

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)	342	1	914	1	1	187	1	553	1	187	1	553
Influenza A (H1N1)pdm09	148	0	195	0	0	127	0	164	0	124	0	161
Influenza B	NA	NA	NA	NA	0	134	0	295	0	134	0	295

(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, April 22, 2012 to April 20, 2013



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 p.m. on April 24, 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 16

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: Ontario, week 16 and cumulative for the 2012-2013 season

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)	16 (1.5)	17	1,061
<i>Chlamydophila pneumoniae</i>	0 (0.0)	1 (0.1)	17	1,061

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/04/23].

Table V. Number and percent positivity (in brackets) of respiratory specimens tested by all methods at PHOL for any *Bordetella* species: Ontario, week 16 and cumulative for the year since January 1, 2013

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 (4.3)	52 (3.4)	70	1,523
<i>Bordetella parapertussis</i>	0 (0.0)	2 (0.1)	70	1,523
<i>Bordetella holmesii</i>	0 (0.0)	0 (0.0)	70	1,523

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/04/23].