



Ontario Respiratory Virus Bulletin | 2012-2013

SURVEILLANCE WEEK 50 (December 9, 2012 – December 15, 2012)

This issue of the Ontario Respiratory Virus Bulletin provides information on the surveillance period from December 9, 2012 to December 15, 2012 (Week 50). Unless otherwise specified, **the data presented are for week 50** and data extraction and analysis for this issue of the Bulletin occurred on Wednesday, December 19, 2012. 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	Four hundred and sixty-eight influenza cases were reported* in week 50 (Table 1), which is higher than the number (294) reported in week 49. The percent positivity** of laboratory tests for influenza A in Ontario was 23.5% for week 50 (Table 3), which is higher than for week 49 at 18.2%.
Other respiratory virus activity	Enterovirus/rhinovirus activity is lower	Among circulating respiratory viruses, enterovirus/rhinovirus had the second highest percent positivity** at 7.84% in week 50 (Table 3), which is lower compared to week 49 at 8.21%.
Institutional respiratory infection outbreaks	Higher	17 new institutional influenza A outbreaks were reported† in week 50, along with one influenza B outbreak, one influenza A & B outbreak, and 13 institutional respiratory infection outbreaks for which no aetiological agent was reported (Table 4, Figure 5).
Influenza activity levels reported by health units	Higher	Four health units in South West health region (Grey Bruce, Middlesex-London, Oxford and Perth) reported 'widespread' levels of influenza activity, while 14 health units across six health regions reported 'localized' levels of influenza activity (Figure 6).
ILI consultation rate reported by sentinel physicians	Slightly lower	The provincial influenza-like-illness (ILI) consultation rate decreased slightly from 50.10/1,000 patient visits in week 49 to 44.34/1,000 patient visits in week 50. This rate is higher than the average rate for the same week from previous years (Figure 7).
Hospitalizations among lab confirmed cases of influenza	Higher	There were 84 hospitalized cases reported* in week 50, which is higher than the number (60) reported in week 49 (Table 2).
Deaths among lab confirmed cases of influenza	Similar	Two deaths were reported* in week 50, which is similar to the number (3) reported in week 49 (Table 2).
OVERALL ASSESSMENT	<i>Influenza activity: Higher</i> <i>Other respiratory virus activity: Lower</i>	From week 49 to 50, overall the indicators show that influenza activity increased and was driven by influenza A; other respiratory virus activity was lower 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.

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

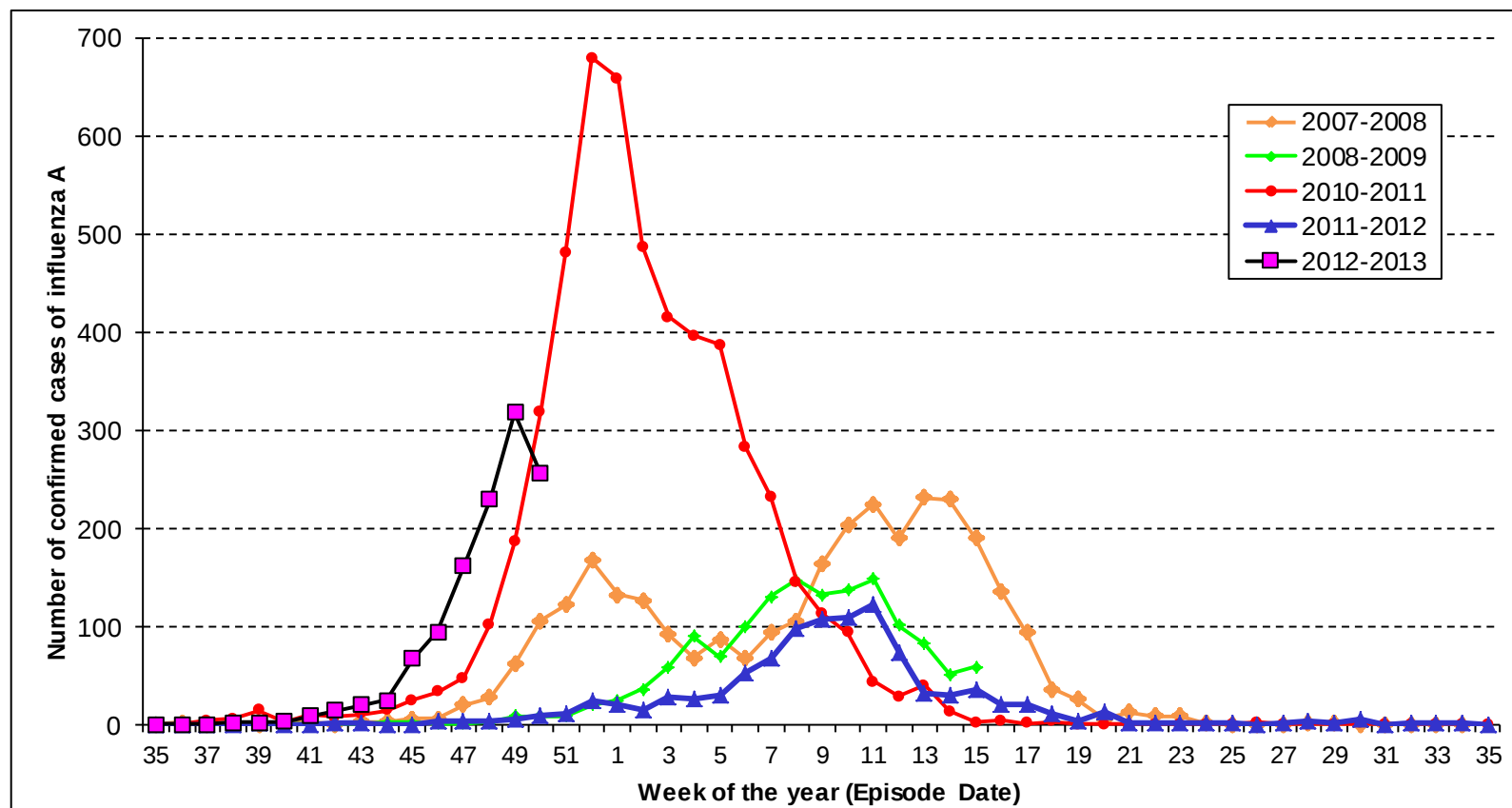
- Seasonal influenza activity, primarily influenza A/H3N2, continues to increase, with the proportion of respiratory samples testing positive for influenza now at 23.5%*.
 - Influenza activity varies by health region, but in week 50 it increased across all regions. It currently remains highest in the South West health region, followed by Central East health region (Figure 6).
 - A total of 1,224 influenza cases were reported this season up to December 15. The majority (98.1%; 1,201/1,224) are influenza A infections (Table 1). The dominant circulating subtype of influenza A is still H3N2, representing 95.7% of all subtyped influenza A positive specimens*.
 - For this season up to December 15, 292 institutional respiratory infection outbreaks have been reported, 74 (25.3%) of which were laboratory-confirmed influenza A (Table 4). The majority of the influenza A outbreaks in institutions have been reported by Waterloo Region (25.7%; 19/74), followed by Toronto (12.2%; 9/74).
 - A total of 238 hospitalizations and 15 deaths have been reported among lab confirmed influenza cases in the season up to December 15 (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 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 season up to December 15 are changing as the season progresses.
 - Less than half of institutional outbreaks reported in the season to date reported entero/rhinovirus as the causative organism (40.8%, 119/292); the number of entero/rhinovirus outbreaks reported in recent weeks has declined and the number of new influenza A outbreaks reported has increased (Table 4, Figure 5).
 - Currently, influenza A has the highest percent positivity and entero/rhinovirus has the second highest percent positivity of all respiratory viruses. For the season to date, entero/rhinovirus has had the highest percent positivity overall, followed by influenza A (Table 3)*.
 - The overall trend in provincial ILI rates continues to be higher than the average rate from previous years (Figure 7).

Holiday schedule

The last Ontario Respiratory Virus Bulletin for 2012 will be published on December 21, covering surveillance week 50 (December 9 to 15, 2012). The Bulletin will not be published on December 28. A Bulletin covering weeks 51 and 52 (December 16 to 29, 2012) will be published on January 4, 2013. **Health units are requested to submit data for both weeks 51 and 52 by noon on January 2, 2013.**

* 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 15, 2012



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/12/19].

Notes:

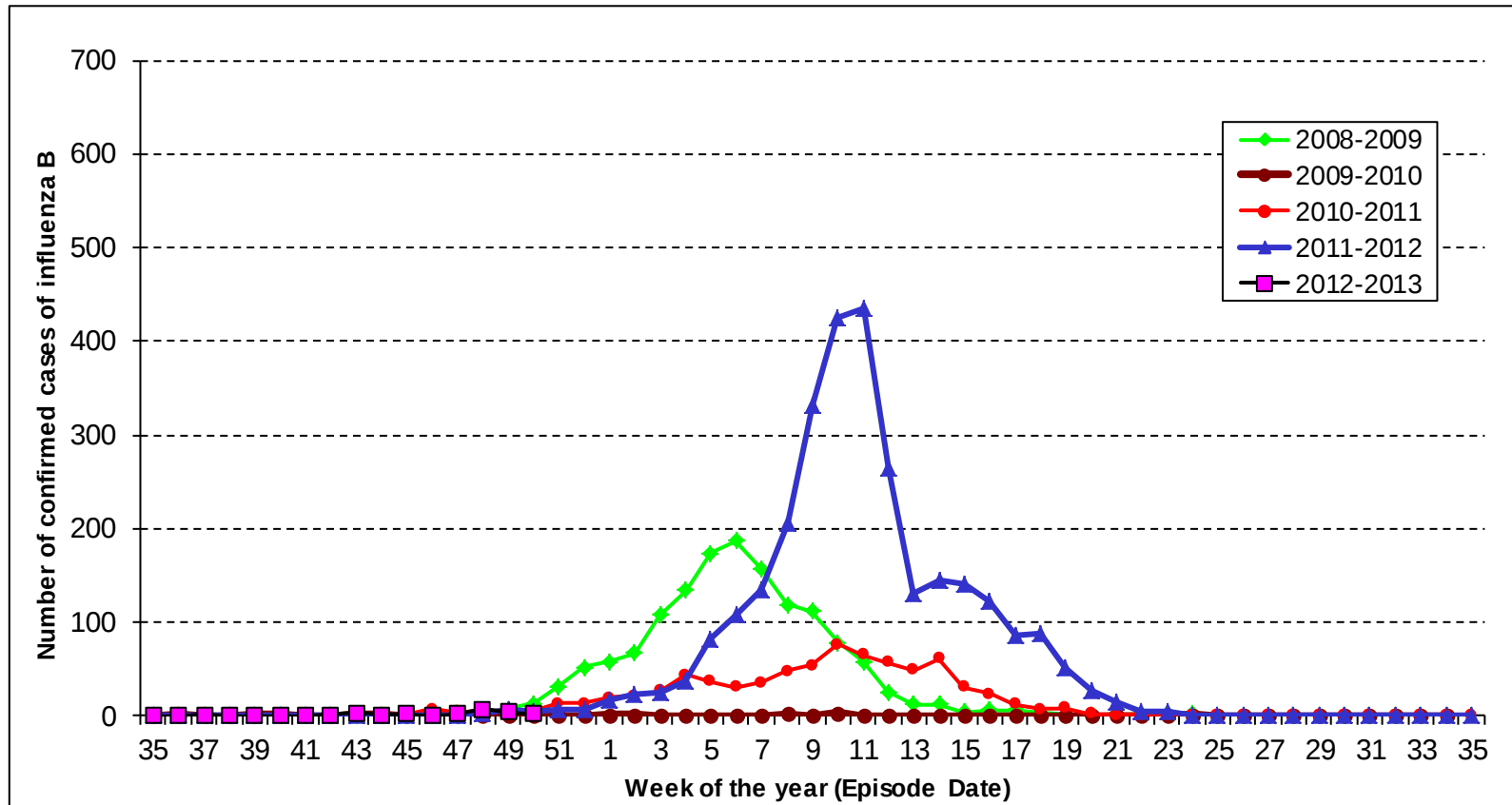
Interpret tail of 2012-2013 line with caution due to reporting lags.

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 15, 2012



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/12/19].

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 (December 9, 2012 – December 15, 2012)

Table 1. Confirmed cases with a reported date during week 50 and cumulative cases (in brackets) of influenza by health unit and health region since September 1, 2012

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 (3)	0 (0)	1 (4)	0 (0)	0 (1)	1 (8)
	Thunder Bay District	0 (0)	3 (4)	0 (0)	0 (8)	0 (0)	0 (0)	3 (12)
	TOTAL NORTH WEST	0 (0)	3 (7)	0 (0)	1 (12)	0 (0)	0 (1)	4 (20)
North East	Algoma	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)	0 (0)	1 (2)
	North Bay Parry Sound District	1 (1)	8 (34)	0 (0)	1 (8)	0 (0)	0 (0)	10 (43)
	Porcupine	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)	0 (0)	1 (1)
	Sudbury & District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Timiskaming	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	TOTAL NORTH EAST	1 (1)	9 (36)	0 (0)	2 (9)	0 (0)	0 (0)	12 (46)
Eastern	City of Ottawa	0 (0)	8 (25)	0 (0)	2 (3)	0 (0)	0 (0)	10 (28)
	Eastern Ontario	0 (0)	1 (3)	0 (0)	1 (6)	0 (0)	0 (0)	2 (9)
	Hastings & Prince Edward Counties	0 (0)	15 (17)	0 (0)	12 (37)	0 (0)	0 (0)	27 (54)
	Kingston, Frontenac, Lennox & Addington	0 (0)	12 (24)	0 (0)	2 (6)	0 (0)	0 (0)	14 (30)
	Leeds, Grenville And Lanark District	0 (0)	4 (5)	0 (0)	3 (4)	0 (0)	0 (0)	7 (9)
	Renfrew County And District	1 (1)	0 (0)	0 (0)	1 (1)	0 (0)	0 (2)	2 (4)
	TOTAL EASTERN	1 (1)	40 (74)	0 (0)	21 (57)	0 (0)	0 (2)	62 (134)
Central East	Durham Region	1 (1)	2 (5)	0 (0)	4 (8)	0 (0)	1 (1)	8 (15)
	Haliburton, Kawartha, Pine Ridge	0 (0)	6 (7)	0 (0)	2 (9)	0 (0)	0 (0)	8 (16)
	Peel Region	1 (4)	29 (48)	0 (0)	3 (16)	0 (0)	4 (5)	37 (73)
	Peterborough County-City	0 (0)	3 (8)	0 (0)	2 (40)	0 (0)	0 (0)	5 (48)
	Simcoe Muskoka District	0 (0)	26 (30)	0 (0)	15 (32)	0 (0)	0 (0)	41 (62)
	York Region	0 (0)	3 (9)	0 (0)	2 (3)	0 (0)	0 (0)	5 (12)
	TOTAL CENTRAL EAST	2 (5)	69 (107)	0 (0)	28 (108)	0 (0)	5 (6)	104 (226)
Toronto	Toronto	4 (7)	47 (71)	0 (0)	17 (53)	0 (0)	0 (5)	68 (136)
	TOTAL TORONTO	4 (7)	47 (71)	0 (0)	17 (53)	0 (0)	0 (5)	68 (136)
South West	Chatham-Kent	0 (0)	0 (0)	0 (0)	0 (3)	0 (0)	0 (0)	0 (3)
	Elgin-St. Thomas	0 (0)	2 (3)	0 (1)	0 (0)	0 (0)	0 (0)	2 (4)
	Grey Bruce	0 (0)	14 (39)	0 (0)	4 (16)	0 (0)	0 (0)	18 (55)
	Huron County	0 (1)	8 (17)	0 (0)	4 (15)	0 (0)	0 (0)	12 (33)
	Lambton County	0 (0)	1 (2)	0 (0)	1 (4)	0 (0)	0 (1)	2 (7)
	Middlesex-London	0 (1)	19 (49)	0 (0)	5 (28)	0 (0)	0 (1)	24 (79)
	Oxford County	0 (1)	6 (10)	0 (0)	0 (13)	0 (0)	0 (0)	6 (24)
	Perth District	1 (2)	2 (5)	0 (0)	6 (23)	0 (0)	0 (0)	9 (30)
	Windsor-Essex County	1 (1)	5 (11)	0 (0)	5 (7)	0 (0)	0 (0)	11 (19)
	TOTAL SOUTHWEST	2 (6)	57 (136)	0 (1)	25 (109)	0 (0)	0 (2)	84 (254)
Central West	Brant County	0 (0)	5 (30)	0 (0)	13 (41)	0 (0)	0 (1)	18 (72)
	City Of Hamilton	0 (0)	27 (45)	0 (0)	1 (4)	0 (0)	1 (1)	29 (50)
	Haldimand-Norfolk	0 (0)	0 (2)	0 (0)	0 (5)	0 (0)	0 (1)	0 (8)
	Halton Region	0 (0)	10 (16)	0 (0)	2 (10)	0 (0)	1 (1)	13 (27)
	Niagara Region	0 (0)	2 (6)	0 (0)	1 (5)	0 (0)	0 (0)	3 (11)
	Waterloo Region	0 (3)	32 (97)	0 (0)	9 (75)	0 (0)	1 (1)	42 (176)
	Wellington-Dufferin-Guelph	2 (3)	11 (14)	0 (0)	16 (45)	0 (0)	0 (2)	29 (64)
	TOTAL CENTRAL WEST	2 (6)	87 (210)	0 (0)	42 (185)	0 (0)	3 (7)	134 (408)
	TOTAL ONTARIO	12 (26)	312 (641)	0 (1)	136 (533)	0 (0)	8 (23)	468 (1224)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/12/19].

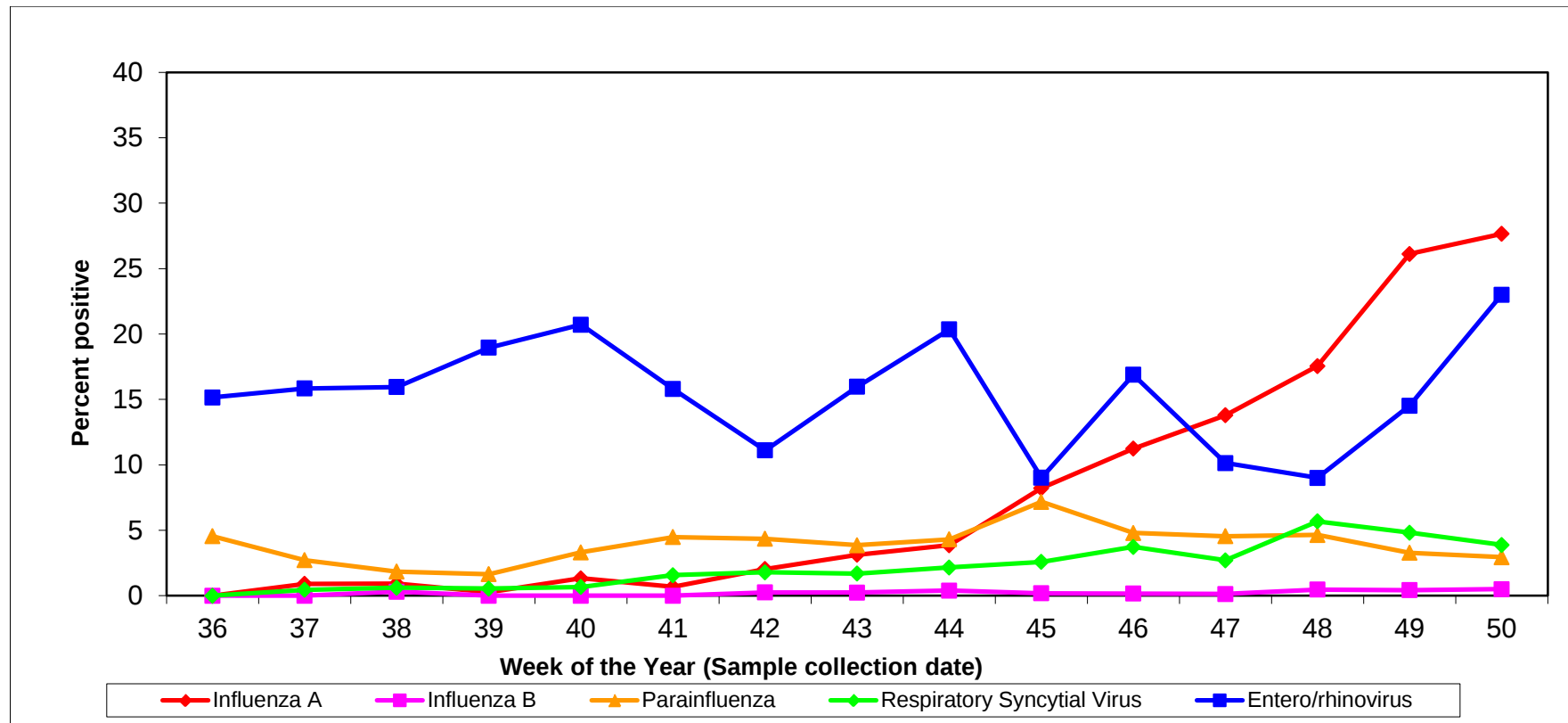
* The 'Other' influenza A category includes indeterminate, untypeable and other subtypes.

Table 2. Number of hospitalizations and deaths among influenza cases during week 50 and cumulative (in brackets) for the season by age group since September 1, 2012

Age Group	Number of Hospitalizations	Cumulative Rate per 100,000	Number of Deaths	Cumulative Rate per 100,000
<1	6 (16)	11.30	0 (0)	0.00
1-4	10 (21)	3.68	0 (1)	0.18
5-14	6 (13)	0.87	0 (0)	0.00
15-24	3 (9)	0.50	0 (0)	0.00
25-44	5 (13)	0.35	0 (1)	0.03
45-64	12 (43)	1.17	0 (0)	0.00
65+	41 (121)	6.60	2 (13)	0.71
Unknown	1 (2)	-	0 (0)	-
Total	84 (238)	1.80	2 (15)	0.11

Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/12/20]. 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, PHOL, September 2, 2012 to December 15, 2012



Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2012/12/18].

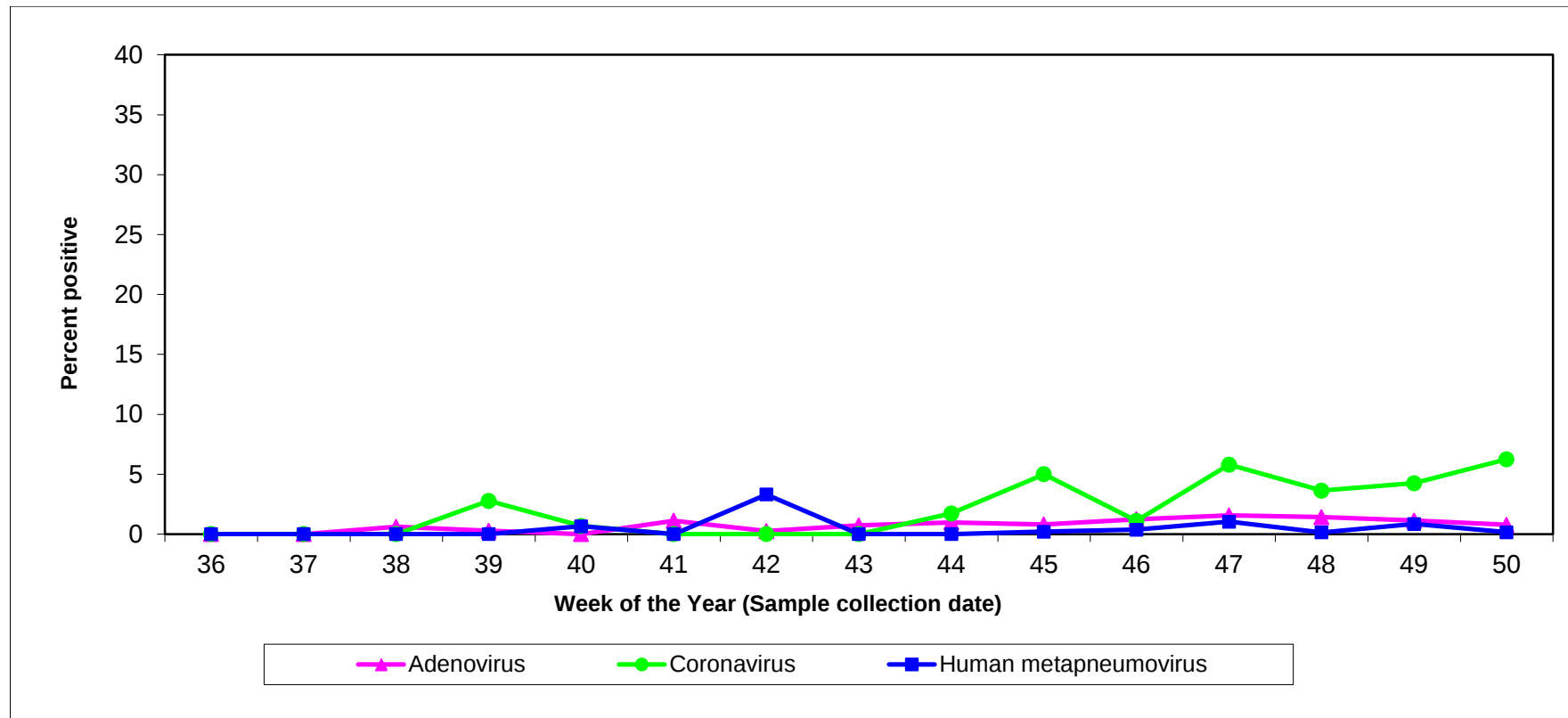
Notes:

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 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, PHOL, September 2, 2012 to December 15, 2012



Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2012/12/18].

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 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 of respiratory specimens tested by all methods for influenza and other respiratory viruses and percent positivity, week 50

Detected viruses	Number and specimen percent positivity		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza A	465 (23.5)	1166 (8.81)	1979	13242
Influenza B	8 (0.4)	27 (0.2)	1979	13242
Parainfluenza virus	50 (3.45)	427 (3.88)	1450	11009
Adenovirus	15 (1.03)	84 (0.77)	1450	10967
Respiratory Syncytial Virus	88 (5.33)	336 (2.97)	1651	11325
Enterovirus/rhinovirus	36 (7.84)	851 (13.8)	459	6166
Human metapneumovirus	14 (1.02)	54 (0.62)	1366	8676
Coronavirus	10 (3.25)	68 (1.85)	308	3670

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 50, 2012. Please note that the last version received from PHAC as of 9:00 AM on December 20, 2012 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: new outbreaks in week 50 and total for the season

Institutional Respiratory Infection Outbreaks		
New outbreaks	N	% (of outbreaks)
Influenza A (All subtypes)	17	53.1
Influenza B	1	3.1
Influenza A and B	1	3.1
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	13	40.6
TOTAL	32	100.0
Total respiratory infection outbreaks in the season to date		
Influenza A (All subtypes)	74	25.3
Influenza B	1	0.3
Influenza A and B	1	0.3
Parainfluenza (All types)	10	3.4
RSV	2	0.7
Combined outbreaks	11	3.8
Other organisms	3	1.0
Entero/rhinovirus	119	40.8
No organism identified	71	24.3
TOTAL	292	100.0
Types of institutions –All outbreaks in the season to date		
Long-term care homes	185	63.4
Hospitals	17	5.8
Retirement homes	34	11.6
Other	0	0.0
Unknown	56	19.2
TOTAL	292	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/12/19].

Notes:

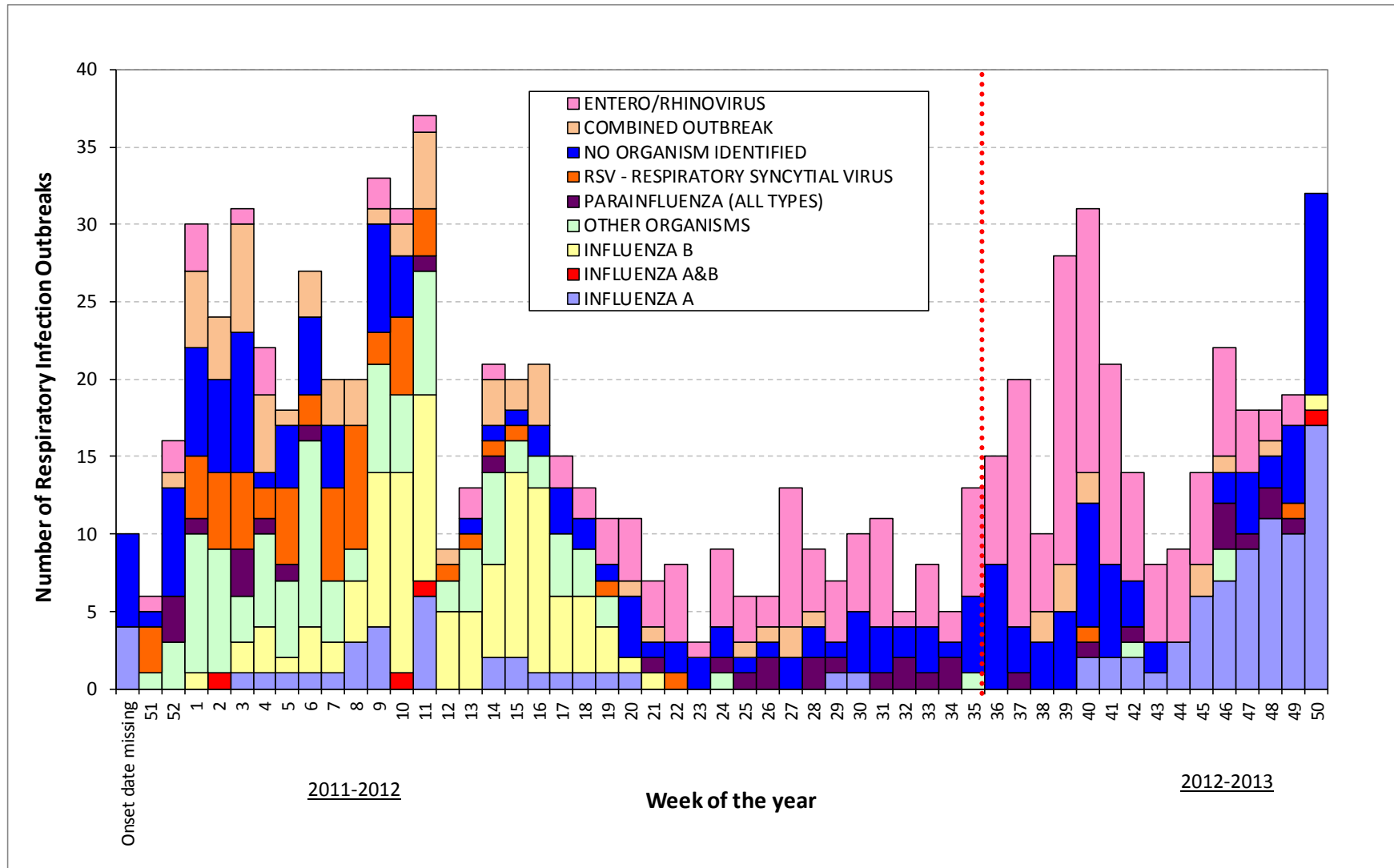
New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded through iPHIS in the current surveillance period; i.e. December 9, 2012 – December 15, 2012.

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.).

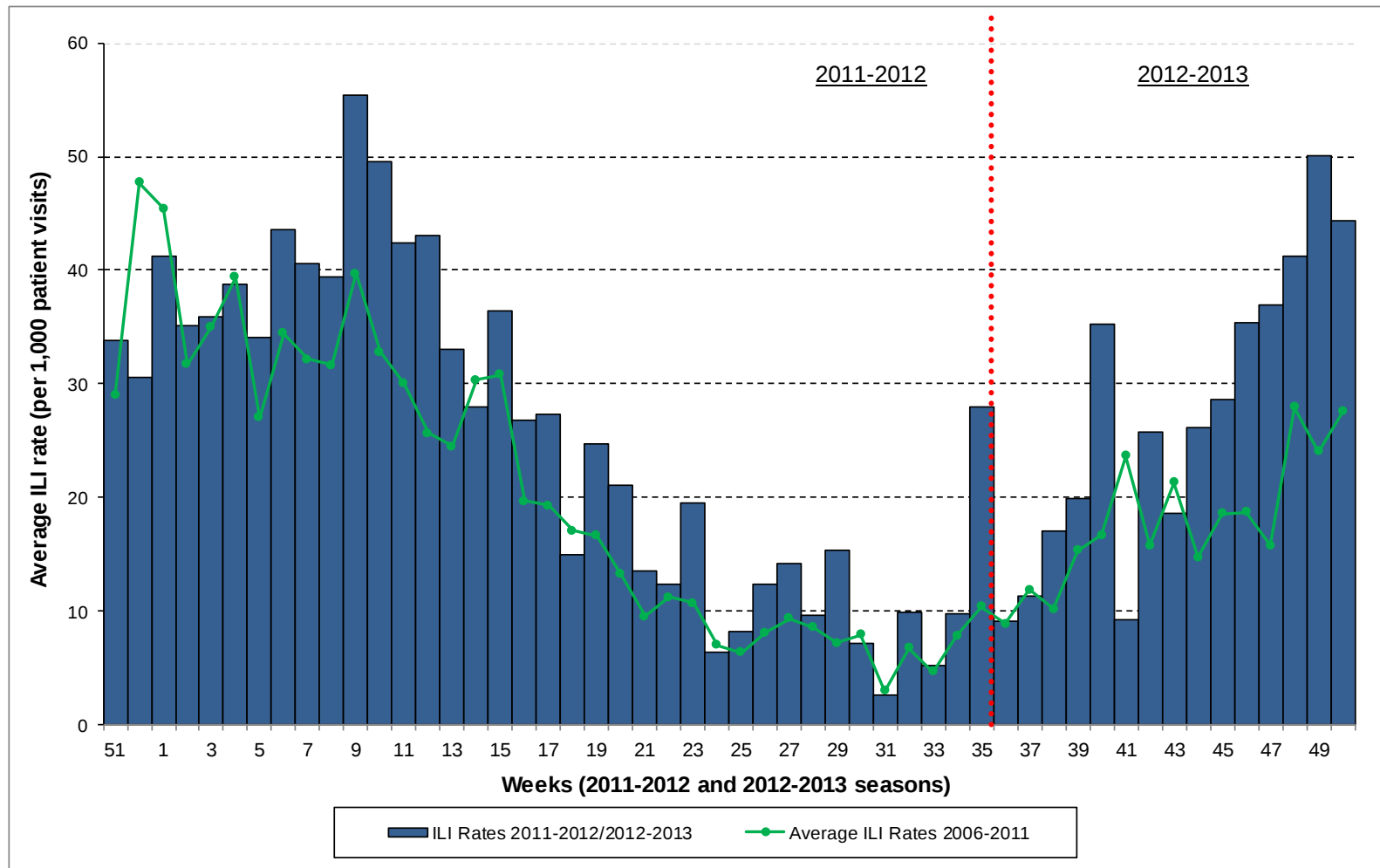
Other organisms include outbreaks involving other aetiological agents, such as human metapneumovirus, adenovirus, and coronavirus.

Figure 5. Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including week 50 by causative organism



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/12/19].

Figure 7. Average influenza-like-illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinels in Ontario up to week 50 of the 2012-2013 surveillance season, by report week, compared to Ontario average (2006-2007 to 2011-2012 seasons)



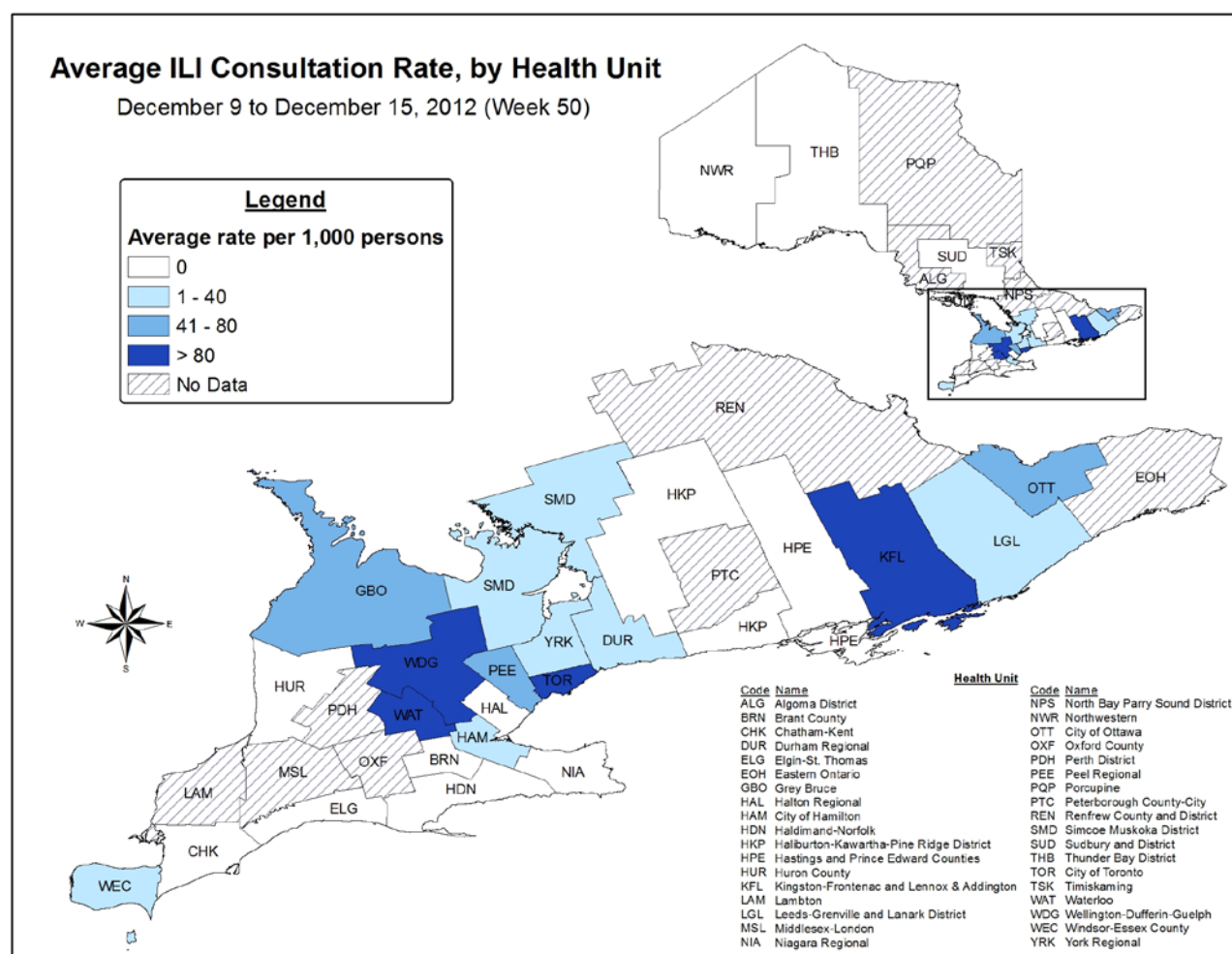
Source: Public Health Agency of Canada

Notes:

Sentinel information is reported to Public Health Agency of Canada. Due to small numbers of sentinels currently reporting, 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 in Ontario, week 50



Source: Public Health Agency of Canada

Note: Sentinels report ILI and patient data to the Public Health Agency of Canada; 62 sentinels reported in week 50, of which 60 were matched to a health unit and represented in the above map. The small numbers of sentinels reporting by health unit can make the ILI rates unstable. Please interpret these data correspondingly.

Table 5. Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) by age group as reported by sentinels in Ontario, for week 50

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	7	17	37	8	0	69
ILI Consultation Rate (per 1,000 patient visits)	66.67	118.88	40.84	19.90	0.00	44.34

Source: Public Health Agency of Canada

Note: Sentinel information is reported to the Public Health Agency of Canada; 62 sentinels reported in week 50.

APPENDIX**Table I.** Current (cumulative) number of specimens submitted and results for influenza by PHU, data from PHOL, week 50

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	7 (101)	0 (0)	0 (0)	0 (0)	1 (2)	6 (99)	16.7 (2.0)
BRANT COUNTY	56 (233)	0 (1)	6 (56)	0 (0)	13 (69)	40 (208)	32.5 (33.2)
CHATHAM-KENT	9 (50)	0 (0)	0 (3)	0 (0)	0 (3)	8 (48)	0.0 (6.3)
CITY OF HAMILTON	16 (100)	0 (1)	1 (8)	0 (0)	1 (6)	10 (89)	10.0 (6.7)
CITY OF OTTAWA	2 (39)	0 (0)	2 (6)	0 (0)	2 (8)	2 (38)	100.0 (21.1)
CITY OF TORONTO	269 (1,910)	0 (3)	30 (80)	1 (8)	41 (108)	152 (1,685)	27.0 (6.4)
DURHAM REGIONAL	54 (323)	0 (2)	2 (10)	0 (1)	3 (16)	45 (302)	6.7 (5.3)
ELGIN-ST. THOMAS	9 (58)	0 (0)	2 (2)	0 (0)	3 (8)	7 (55)	42.9 (14.5)
EASTERN ONTARIO	16 (74)	0 (0)	3 (9)	0 (0)	3 (9)	11 (69)	27.3 (13.0)
GREY BRUCE	37 (269)	0 (0)	8 (61)	0 (0)	18 (73)	34 (258)	52.9 (28.3)
HALTON REGIONAL	30 (256)	0 (0)	2 (19)	1 (1)	6 (23)	21 (236)	28.6 (9.7)
HALDIMAND-NORFOLK	15 (66)	0 (1)	0 (8)	0 (0)	2 (11)	8 (55)	25.0 (20.0)
HALIBURTON-KAWARTHA-PINE RIDGE DISTRICT	33 (164)	0 (0)	6 (15)	0 (0)	10 (23)	32 (161)	31.3 (14.3)
HASTINGS AND PRINCE EDWARD COUNTIES	44 (213)	0 (0)	14 (46)	0 (0)	13 (44)	37 (200)	35.1 (22.0)
HURON COUNTY	12 (106)	0 (0)	1 (22)	0 (1)	4 (29)	12 (106)	33.3 (27.4)
KINGSTON-FRONTENAC AND LENNOX AND ADDINGTON	61 (214)	1 (1)	13 (33)	0 (0)	22 (42)	43 (190)	51.2 (22.1)
LAMBTON	28 (146)	0 (1)	1 (8)	0 (0)	6 (13)	22 (140)	27.3 (9.3)
LEEDS-GRENVILLE AND LANARK DISTRICT	16 (62)	0 (0)	4 (6)	0 (0)	4 (7)	10 (55)	40.0 (12.7)
MIDDLESEX-LONDON	34 (250)	0 (1)	9 (41)	0 (1)	17 (50)	32 (240)	53.1 (20.8)

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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	31 (223)	0 (0)	1 (8)	0 (0)	6 (17)	16 (186)	37.5 (9.1)
NORTH BAY PARRY SOUND DISTRICT	16 (194)	0 (0)	0 (8)	0 (0)	0 (9)	12 (190)	0.0 (4.7)
NORTHWESTERN	2 (85)	0 (1)	0 (3)	0 (0)	0 (6)	1 (83)	0.0 (7.2)
OXFORD COUNTY	7 (82)	0 (0)	1 (17)	0 (1)	3 (23)	6 (77)	50.0 (29.9)
PERTH DISTRICT	15 (159)	0 (0)	2 (25)	0 (2)	4 (31)	15 (157)	26.7 (19.7)
PEEL REGIONAL	144 (1,119)	4 (6)	8 (35)	0 (9)	14 (54)	100 (1,045)	14.0 (5.2)
PORCUPINE	12 (129)	0 (0)	1 (1)	0 (0)	1 (1)	10 (127)	10.0 (0.8)
PETERBOROUGH COUNTY-CITY	21 (134)	0 (0)	2 (18)	0 (0)	7 (25)	20 (132)	35.0 (18.9)
RENFREW COUNTY AND DISTRICT	11 (46)	0 (2)	2 (2)	0 (1)	2 (3)	8 (43)	25.0 (7.0)
SIMCOE MUSKOKA DISTRICT	174 (677)	0 (0)	11 (33)	0 (1)	25 (56)	112 (594)	22.3 (9.4)
SUDBURY AND DISTRICT	20 (156)	0 (0)	0 (1)	0 (0)	0 (1)	13 (145)	0.0 (0.7)
THUNDER BAY DISTRICT	15 (88)	0 (0)	5 (13)	0 (0)	5 (15)	6 (75)	83.3 (20.0)
TIMISKAMING	0 (22)	0 (0)	0 (0)	0 (0)	0 (0)	0 (22)	0.0 (0.0)
WATERLOO	61 (430)	0 (1)	13 (116)	0 (5)	16 (131)	53 (417)	30.2 (31.4)
WELLINGTON-DUFFERIN-GUELPH	71 (284)	0 (1)	8 (45)	0 (3)	18 (70)	48 (245)	37.5 (28.6)
WINDSOR-ESSEX COUNTY	13 (89)	0 (0)	1 (14)	0 (1)	5 (19)	13 (86)	38.5 (22.1)
YORK REGIONAL	61 (482)	0 (0)	1 (9)	0 (1)	3 (12)	40 (433)	7.5 (2.8)
OUT OF PROVINCE	0 (27)	0 (0)	0 (1)	0 (0)	0 (1)	0 (26)	0.0 (3.8)
TOTAL ONTARIO	1,422 (9,060)	5 (22)	160 (782)	2 (36)	278	1,005	27.7 (12.2)

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2012/12/18].

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 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. National Microbiology Laboratory strain characterization, influenza isolates in Ontario and Canada, September 1, 2012 to December 20, 2012

Influenza strains	Ontario	Canada
Influenza A (H3N2) A/Victoria/361/2011-like	33	87
Influenza A (H1N1)pdm09 A/California/07/09-like	15	16
Influenza B B/Brisbane/60/2008-like*	3	4
Influenza B B/Wisconsin/01/2010-like	11	18

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.

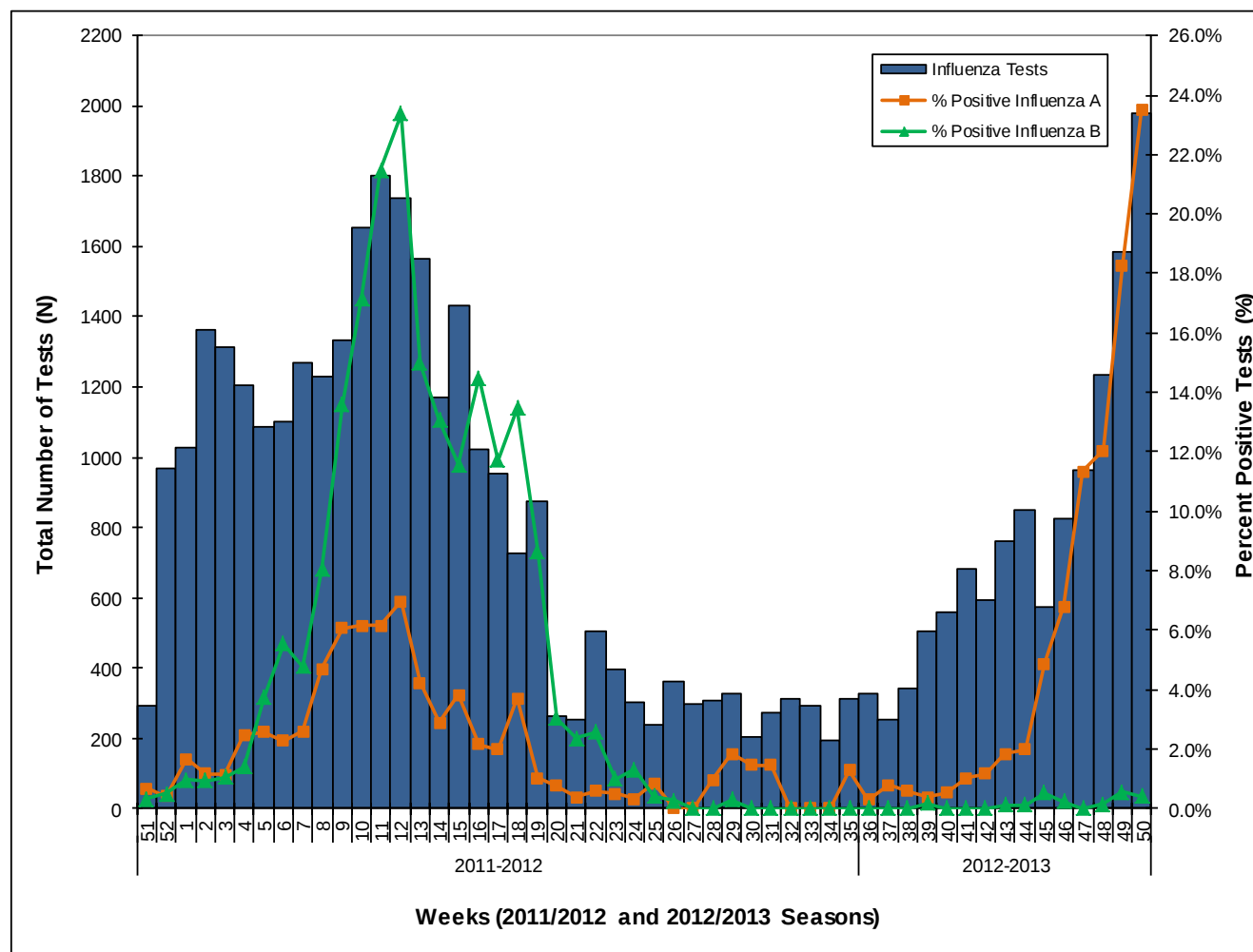
Table III. Amantadine, Oseltamivir and Zanamivir susceptibility assays completed on Ontario and Canadian influenza isolates by the National Microbiology Laboratory, September 1, 2012 to December 20, 2012

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)	59	0	122	0	0	25	0	73	0	22	0	70
Influenza A (H1N1)pdm09	8	0	10	0	0	10	0	18	0	10	0	18
Influenza B	NA	NA	NA	NA	0	11	0	13	0	11	0	13

(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, 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 December 20, 2012 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 50

Table IV. Number of respiratory specimens tested by all methods for any *Mycoplasma pneumoniae* and *Chlamydophila pneumoniae* species, and percent positive results, PHOL, week 50. Cumulative data are from 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)	9 (2.1)	0	429
<i>Chlamydophila pneumoniae</i>	0 (0.0)	0 (0.0)	0	429

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2012/12/18].

Table V. Number of respiratory specimens tested by all methods for any *Bordetella* species, and percent positive results, PHOL, week 50. Cumulative data are from 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 (1.4)	630 (9.6)	141	6,559
<i>Bordetella parapertussis</i>	0 (0.0)	39 (0.6)	141	6,559
<i>Bordetella holmesii</i>	0 (0.0)	3 (0.0)	141	6,559

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2012/12/18].