

Ontario Respiratory Virus Bulletin | 2013-2014

SURVEILLANCE WEEK 16 (April 13, 2014 – April 19, 2014)

This issue of the Ontario Respiratory Virus Bulletin provides information on the surveillance period from April 13 to April 19, 2014 (Week 16). Unless otherwise specified, **data presented in this issue of the bulletin are for Week 16** and data extraction occurred on Wednesday, April 23, 2014. Weekly production of this expanded version of the bulletin will continue throughout the influenza season until May 2014, and then an abbreviated version will be published on alternate weeks.

Assessment of Influenza Activity in Ontario

Measure of activity	Assessment of measure compared to the previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory-confirmed influenza cases ^{1,2}	Slightly lower	There were 435 influenza cases (17 influenza A and 418 influenza B) reported ¹ in Week 16 (Table 1), which was lower than the 485 influenza cases reported in Week 15 (39 influenza A, 445 influenza B, and one influenza A and B coinfection). Percent positivity ² of laboratory tests for all influenza types in Ontario was 22.5% for Week 16 (Table 3), which was slightly lower than percent positivity in Week 15 (23.7%).
Influenza outbreaks ³	Lower	There were four new influenza outbreaks reported in Week 16 (four influenza B), which was lower than the six influenza outbreaks reported in Week 15 (one influenza A and five influenza B) (Table 4).
Influenza activity levels reported by health units	Slightly lower	In Week 16, one health unit reported 'widespread', 18 reported 'localized', 9 reported 'sporadic', and 5 reported 'no activity' (Figure 6). In Week 15, one health unit reported 'widespread', 18 reported 'localized', 13 reported 'sporadic', and 3 reported 'no activity'.
OVERALL ASSESSMENT	Slightly lower	Overall, the indicators show that influenza activity for Week 16 was slightly lower than Week 15.
Measures of severity for influenza		
Hospitalizations among laboratory-confirmed cases of influenza ¹	Lower	There were 94 hospitalized cases reported in Week 16, which was lower than the 114 hospitalized cases reported in Week 15 (Table 2).
Deaths among laboratory-confirmed cases of influenza ¹	Higher	There were six deaths reported in Week 16, which was higher than the single death reported in Week 15 (Table 2).

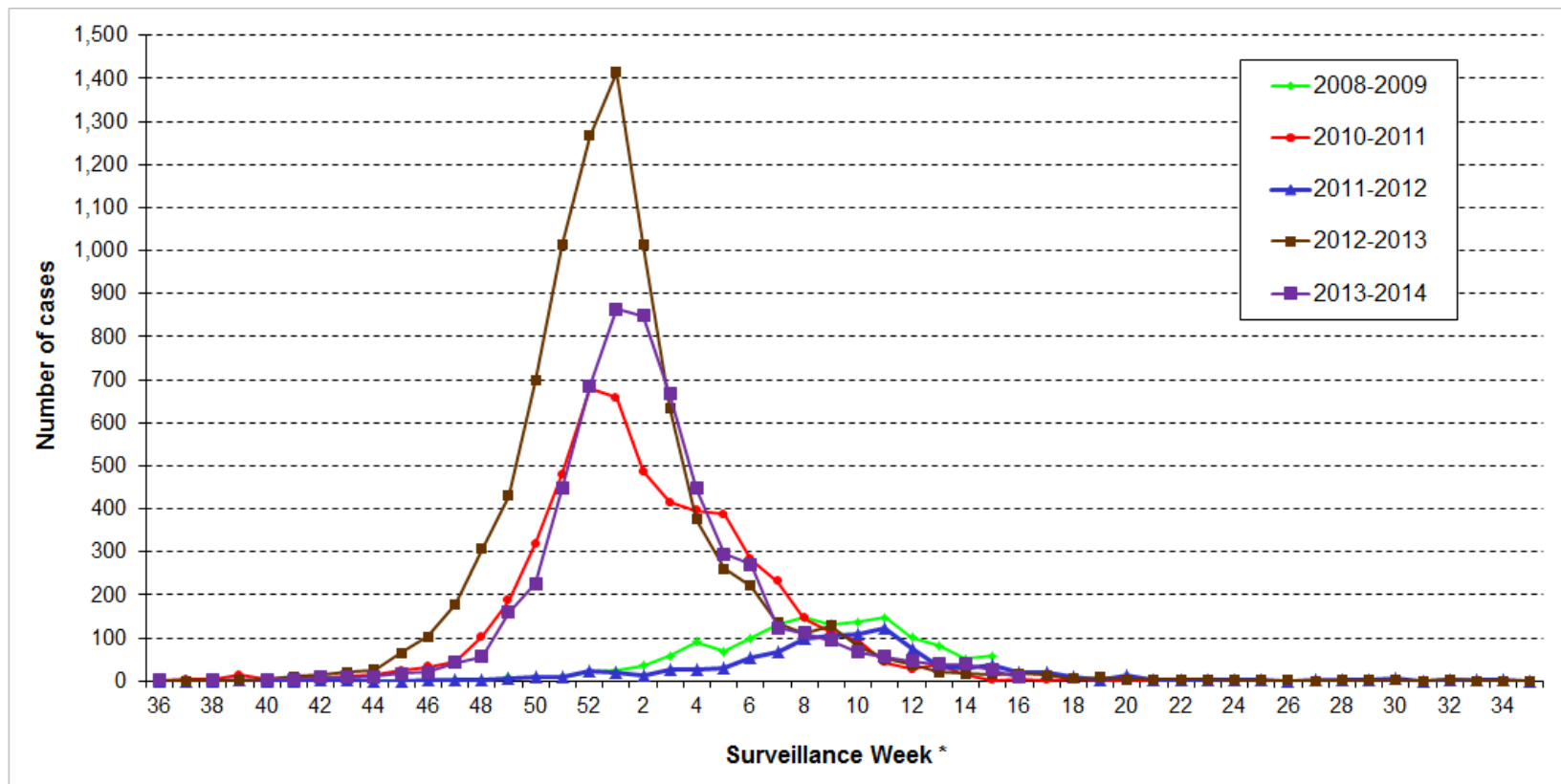
¹ The number of **reported** cases needs to be interpreted with caution because there is a lag between the onset of illness, hospital admission or death and when this information is reported to public health. ² Positivity among specimens submitted for testing to Ontario laboratories reporting to the Centre for Immunization and Respiratory Infectious Diseases (CIRID). ³ The number of new outbreaks reported for the current week is based on the onset date of illness for the first case in an outbreak.

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

- General influenza activity in the current surveillance week was slightly lower than the previous week. Based on laboratory findings¹, influenza B is currently the dominant circulating influenza type.
 - Influenza percent positivity for the season declined from Week 2 to Week 9, then gradually increased from Weeks 10 to 15 as a result of increasing influenza B activity (Table 3, Appendix Figure I). Influenza B percent positivity was 21.6% in Week 16, which was similar as compared to Week 15 (21.7%); influenza A percent positivity was 0.8% in Week 16, which was lower compared to Week 15 (2.0%). The percent positivity for influenza B has been higher than influenza A since Week 10.
 - For the 2013-2014 surveillance season to date, 8,471 laboratory-confirmed influenza cases have been reported; 67.4% (5,706/8,471) of these were influenza A. In Week 16, 96.1% (418/435) of reported influenza cases were influenza B (Table 1).
 - For the season to date, 2,700 hospitalizations and 167 deaths have been reported among laboratory-confirmed influenza cases (Table 2). The majority of hospitalizations (78.9%, 2,131/2,700) and deaths (80.8%, 135/167) have occurred among influenza A cases.
- Among all other circulating viruses in the current surveillance week of the 2013-2014 season (Table 3):
 - Rhinovirus was the dominant circulating non-influenza respiratory virus; the percent positivity for rhinovirus increased from 7.3% in Week 15 to 8.1% in Week 16.
 - Human metapneumovirus was the second most commonly circulating non-influenza respiratory virus; the percent positivity for human metapneumovirus in week 16 was 4.7%, similar to percent positivity in week 15 (4.8%).

¹ Based on percent positivity among specimens submitted for testing to laboratories reporting to the Public Health Agency of Canada's Centre for Immunization and Respiratory Infectious Diseases (CIRID).

Figure 1. Number of reported confirmed cases of **influenza A** by surveillance week: Ontario, September 1, 2008 to April 19, 2014



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/04/23].

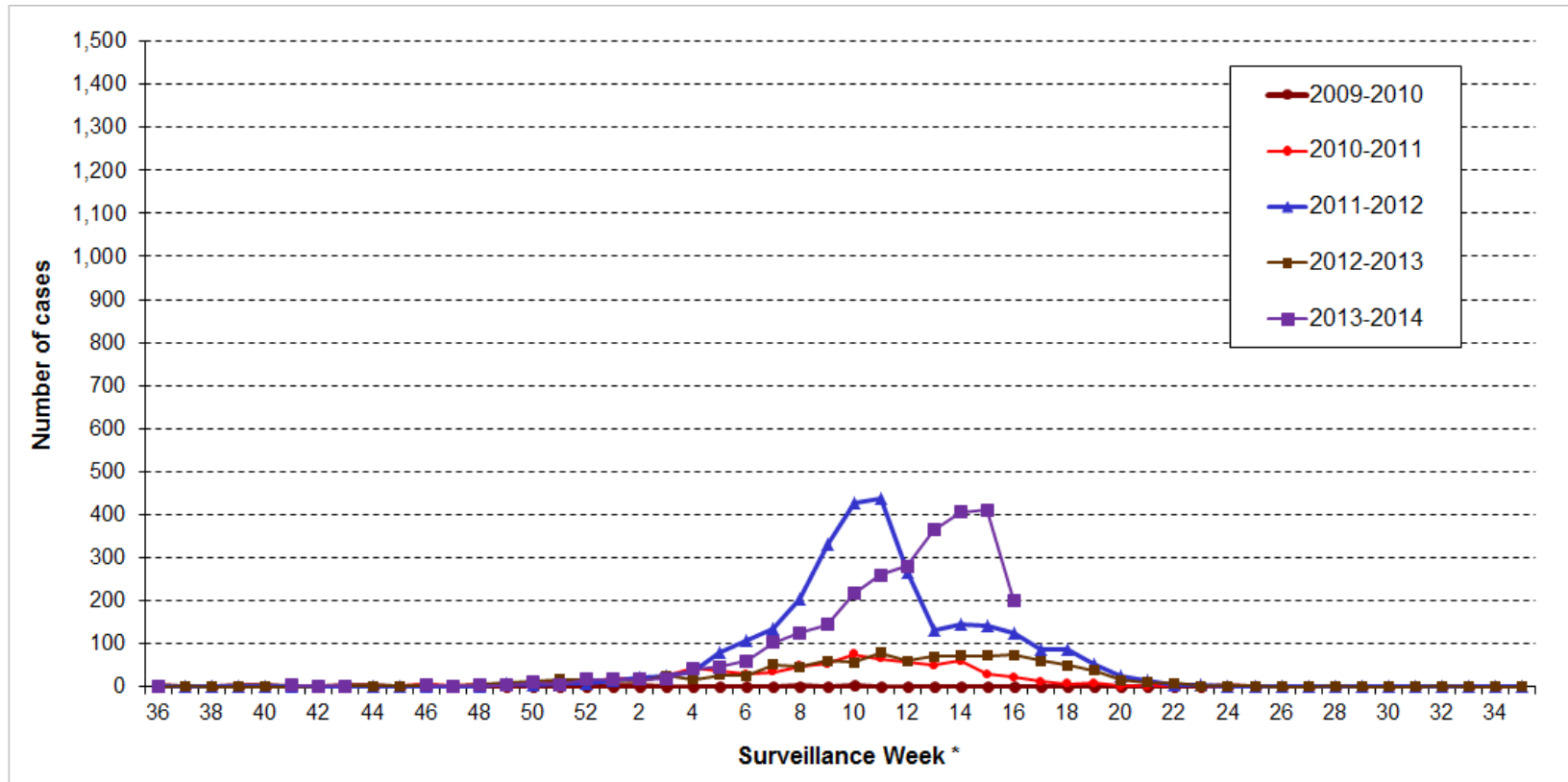
Notes:

Interpret most recent case counts for the current season with caution due to reporting lags.

*Case counts above are based on 'Reported Date', which was the date the health unit was notified of the case; however, cases are assigned to a particular surveillance week based on the episode date entered in iPHIS for the case. Episode date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date). Cases are excluded from these counts if the episode date is based on reported date, and the reported date occurs after the latest surveillance week.

Cases with an episode date after Week 15 in the 2008-2009 season, as well as all cases from the 2009-2010 influenza season, were excluded from this graph based on the assumption that the influenza burden during the pandemic period is not comparable to a regular influenza season. Week 53 of the 2008-2009 season has been removed for continuity in displaying trends.

Figure 2. Number of reported confirmed cases of **influenza B** by surveillance week: Ontario, September 1, 2009 to April 19, 2014



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/04/23].

Notes:

Interpret most recent case counts for the current season with caution due to reporting lags.

*Case counts above are based on 'Reported Date', which was the date the health unit was notified of the case; however, cases are assigned to a particular reporting week based on the episode date entered in iPHIS for the case. Episode date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date). Cases are excluded from these counts if the episode date is based on reported date, and the reported date occurs after the latest surveillance week.

Table 1. Number of reported confirmed influenza cases by health unit and health region: Ontario, Week 16 and cumulative total (in parentheses) for the 2013-2014 season

Health Unit and Region	Influenza A				Influenza A & B	Influenza B	TOTAL
	(H1N1) pdm09	H3	Other [*]	No subtype available			
Northwestern	0 (9)	0 (0)	0 (0)	0 (58)	0 (0)	0 (5)	0 (72)
Thunder Bay District	1 (43)	0 (0)	0 (0)	0 (72)	0 (0)	0 (3)	1 (118)
TOTAL NORTH WEST	1 (52)	0 (0)	0 (0)	0 (130)	0 (0)	0 (8)	1 (190)
Algoma	0 (32)	0 (0)	0 (0)	0 (43)	0 (0)	2 (5)	2 (80)
North Bay Parry Sound District	0 (38)	0 (0)	0 (0)	1 (160)	0 (0)	9 (34)	10 (232)
Porcupine	0 (14)	0 (0)	0 (0)	0 (43)	0 (0)	0 (5)	0 (62)
Sudbury & District	0 (20)	0 (0)	0 (0)	0 (105)	0 (0)	0 (15)	0 (140)
Timiskaming	0 (4)	0 (0)	0 (0)	0 (7)	0 (0)	2 (2)	2 (13)
TOTAL NORTH EAST	0 (108)	0 (0)	0 (0)	1 (358)	0 (0)	13 (61)	14 (527)
City of Ottawa	0 (42)	0 (11)	0 (0)	1 (215)	0 (0)	17 (56)	18 (324)
Eastern Ontario	0 (21)	0 (9)	0 (1)	0 (45)	0 (0)	0 (5)	0 (81)
Hastings & Prince Edward Counties	0 (13)	0 (0)	0 (0)	0 (13)	0 (0)	2 (9)	2 (35)
Kingston, Frontenac, Lennox & Addington	0 (56)	0 (21)	0 (0)	0 (51)	0 (0)	1 (28)	1 (156)
Leeds, Grenville And Lanark District	0 (27)	0 (1)	0 (0)	0 (37)	0 (0)	1 (23)	1 (88)
Renfrew County And District	0 (13)	0 (4)	0 (0)	0 (35)	0 (0)	1 (2)	1 (54)
TOTAL EASTERN	0 (172)	0 (46)	0 (1)	1 (396)	0 (0)	22 (123)	23 (738)
Durham Region	0 (79)	0 (6)	0 (0)	0 (100)	0 (0)	13 (74)	13 (259)
Haliburton, Kawartha, Pine Ridge	0 (30)	0 (2)	0 (0)	0 (61)	0 (0)	5 (23)	5 (116)
Peel Region	0 (210)	0 (26)	0 (1)	2 (313)	0 (0)	57 (382)	59 (932)
Peterborough County-City	0 (35)	0 (1)	0 (1)	0 (30)	0 (0)	2 (17)	2 (84)
Simcoe Muskoka District	0 (108)	0 (3)	0 (0)	0 (129)	0 (0)	20 (90)	20 (330)
York Region	0 (126)	0 (13)	0 (0)	3 (173)	0 (0)	34 (186)	37 (498)
TOTAL CENTRAL EAST	0 (588)	0 (51)	0 (2)	5 (806)	0 (0)	131 (772)	136 (2,219)
Toronto	0 (707)	1 (132)	0 (0)	2 (367)	0 (4)	127 (956)	130 (2,166)
TOTAL TORONTO	0 (707)	1 (132)	0 (0)	2 (367)	0 (4)	127 (956)	130 (2,166)
Chatham-Kent	0 (30)	0 (0)	0 (0)	0 (35)	0 (1)	0 (5)	0 (71)
Elgin-St. Thomas	0 (22)	0 (0)	0 (0)	0 (24)	0 (0)	0 (13)	0 (59)
Grey Bruce	1 (22)	0 (1)	0 (0)	0 (69)	0 (0)	8 (61)	9 (153)
Huron County	0 (8)	0 (0)	0 (0)	0 (14)	0 (0)	6 (21)	6 (43)
Lambton County	0 (24)	0 (0)	0 (0)	0 (16)	0 (0)	1 (9)	1 (49)
Middlesex-London	0 (36)	0 (1)	0 (0)	0 (158)	0 (0)	31 (128)	31 (323)
Oxford County	0 (10)	0 (4)	0 (0)	0 (17)	0 (0)	1 (16)	1 (47)
Perth District	0 (15)	0 (7)	0 (0)	0 (18)	0 (0)	6 (26)	6 (66)
Windsor-Essex County	0 (110)	0 (1)	0 (0)	0 (66)	0 (0)	3 (8)	3 (185)
TOTAL SOUTH WEST	1 (277)	0 (14)	0 (0)	0 (417)	0 (1)	56 (287)	57 (996)
Brant County	0 (13)	0 (5)	0 (0)	0 (40)	0 (0)	3 (17)	3 (75)
City Of Hamilton	0 (19)	0 (3)	0 (0)	2 (269)	0 (0)	19 (209)	21 (500)
Haldimand-Norfolk	0 (10)	0 (4)	0 (0)	0 (30)	0 (0)	5 (16)	5 (60)
Halton Region	1 (52)	0 (6)	0 (0)	0 (149)	0 (0)	22 (111)	23 (318)
Niagara Region	0 (60)	0 (4)	0 (0)	0 (108)	0 (0)	8 (86)	8 (258)
Waterloo Region	0 (38)	0 (7)	0 (0)	1 (152)	0 (0)	7 (66)	8 (263)
Wellington-Dufferin-Guelph	1 (43)	0 (1)	0 (0)	0 (64)	0 (0)	5 (53)	6 (161)
TOTAL CENTRAL WEST	2 (235)	0 (30)	0 (0)	3 (812)	0 (0)	69 (558)	74 (1,635)
TOTAL ONTARIO	4 (2,139)	1 (273)	0 (3)	12 (3,286)	0 (5)	418 (2,765)	435 (8,471)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/04/23].

Notes: Case counts above are based on 'Reported Date', which was the date the health unit was notified of the case. The cumulative count (in parentheses) includes laboratory-confirmed cases with a 'Reported Date' between September 1, 2013 and the last day of the current surveillance week.

^{*} The 'Other' influenza A category includes any other influenza A subtypes identified; 'No subtype available' includes influenza A isolates that were classified as not subtyped, untypeable, or indeterminate.

Table 2. Hospitalizations and deaths among confirmed influenza cases by age group: Ontario, Week 16 and cumulative for the 2013-2014 influenza season

Age Group	HOSPITALIZATIONS		DEATHS	
	Weekly Count	Cumulative count (rate per 100,000)	Weekly count	Cumulative count (rate per 100,000)
<1	1	192 (135.7)	0	2 (1.4)
1 – 4	5	287 (49.8)	0	2 (0.3)
5 – 14	7	152 (10.3)	0	2 (0.1)
15 – 24	1	70 (3.8)	0	2 (0.1)
25 – 44	5	313 (8.4)	0	14 (0.4)
45 – 64	23	738 (19.5)	2	58 (1.5)
65+	52	948 (48.0)	4	87 (4.4)
Total	94	2,700 (20.0)	6	167 (1.2)

Sources:

Case data: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/04/23].

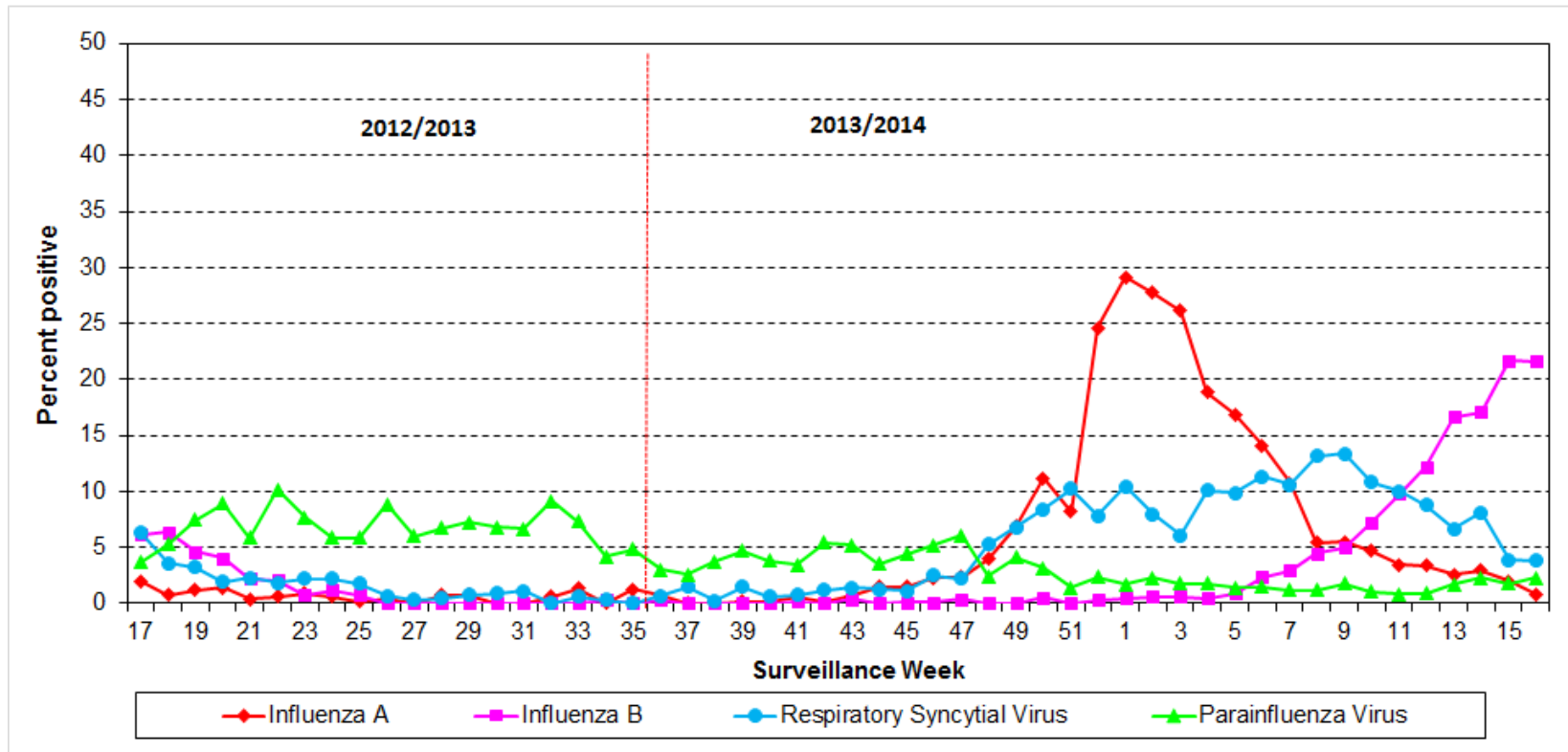
Population data: Population Estimates 2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, extracted by Public Health Ontario [2013/09/16].

Notes:

The numbers of hospitalizations and deaths provided in iPHIS need to be interpreted with caution due to delays between the onset of illness, hospital admission or death, and when this information is reported to public health. During periods of increased influenza activity, there may be additional delays in the reporting of hospitalizations and deaths beyond the 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 because of ill persons not seeking medical care and therefore not getting tested.

Figure 3. Percentage of respiratory viral pathogens (influenza A, influenza B, respiratory syncytial virus, and parainfluenza virus) detected among specimens tested by all methods: Ontario, April 21, 2013 to April 19, 2014



Source: These data have been obtained from the Public Health Agency of Canada's (PHAC) Centre for Immunization and Respiratory Infectious Diseases (CIRID) respiratory virus detection tables as of April 23, 2014; they are based on data submitted to PHAC from 16 laboratories in Ontario.

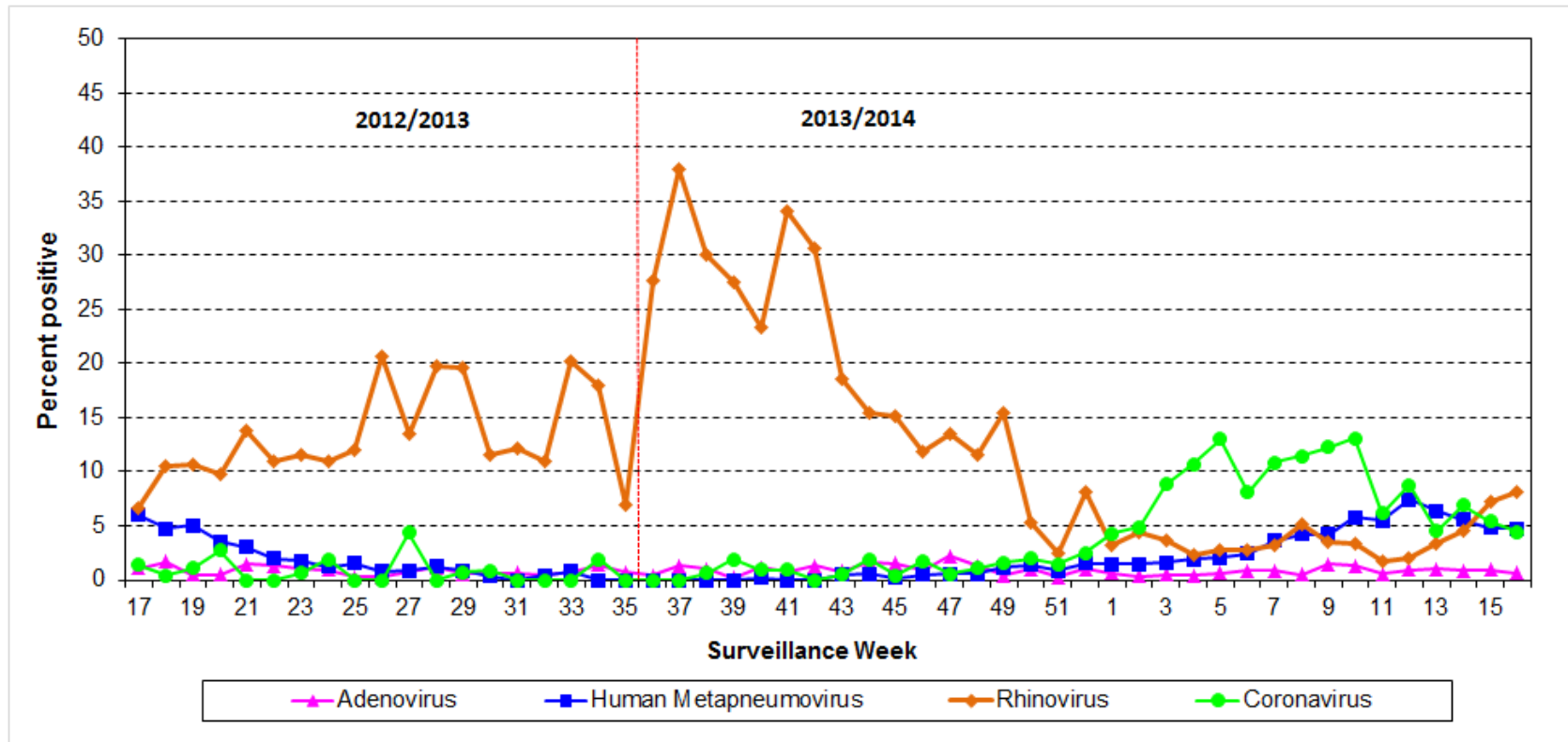
Notes:

The numbers reported in this figure represent results submitted to the CIRID by 16 participating laboratories in Ontario, including 11 Public Health Ontario Laboratories (PHOLs) and five hospital-based laboratories.

Interpret results for Week 51 with caution as only four laboratories in Ontario, three of which were hospital-based laboratories, submitted results to the CIRID. Results above are assigned to a particular surveillance week based on when test results are reported to PHAC; these data are not updated when results are submitted late for previous surveillance weeks. 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.

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

Figure 4. Percentage of respiratory viral pathogens (adenovirus, human metapneumovirus, rhinovirus and coronavirus) detected among specimens tested by all methods: Ontario, April 21, 2013 to April 19, 2014



Source: These data have been obtained from the Public Health Agency of Canada's (PHAC) Centre for Immunization and Respiratory Infectious Diseases (CIRID) respiratory virus detection tables as of April 23, 2014; they are based on data submitted to PHAC from 16 laboratories in Ontario.

Notes:

The numbers reported in this figure represent results submitted to the CIRID by 16 participating laboratories in Ontario, including 11 Public Health Ontario Laboratories and five hospital-based laboratories.

Interpret results for Week 51 with caution as only four laboratories in Ontario, three of which were hospital-based laboratories, submitted results to the CIRID. Results above are assigned to a particular surveillance week based on when test results are reported to PHAC; these data are not updated when results are submitted late for previous surveillance weeks. 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.

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

Table 3. Number and percent positivity of respiratory specimens tested by all methods for influenza and other respiratory viruses: Ontario, Week 16 and cumulative for the 2013-2014 season

Detected viruses	Current Surveillance Week			Cumulative for Season*		
	Number positive	Number tested	Percent positive	Number positive	Number tested	Percent positive
Influenza (All)	330	1,469	22.5%	7,865	51,039	15.4%
Influenza A	12	1,469	0.8%	5,688	51,039	11.1%
Influenza B	318	1,469	21.6%	2,177	51,039	4.3%
Parainfluenza virus	28	1,227	2.3%	931	42,044	2.2%
Adenovirus	8	1,227	0.7%	347	42,044	0.8%
Respiratory syncytial virus	54	1,417	3.8%	3,772	47,920	7.9%
Rhinovirus	33	408	8.1%	1,201	16,614	7.2%
Human metapneumovirus	57	1,204	4.7%	1,067	40,383	2.6%
Coronavirus	16	358	4.5%	574	10,158	5.7%

Source: These data have been obtained from the Public Health Agency of Canada's (PHAC) Centre for Immunization and Respiratory Infectious Diseases (CIRID) respiratory virus detection tables as of April 23, 2014; they are based on data submitted to PHAC from 16 participating laboratories in Ontario.

Notes:

*Cumulative numbers include counts from August 25, 2013 (surveillance week 35) because PHAC's CIRID data include Week 35 as part of the 2013-2014 season.

The data in this table are based on the date on which test results are reported. Cumulative counts reported include late reports from previous weeks; however, the current week will not include data from laboratories that submit late reports. Therefore, weekly counts from previous weeks may not equal the cumulative count.

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.

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

Table 4. Institutional respiratory infection outbreaks: Ontario, Week 16 and total for the 2013-2014 season to date¹

Institutional Respiratory Infection Outbreaks		
New outbreaks (Week 16) ²	Number of outbreaks	Percentage (%) of total
Influenza A	0	0.0
Influenza B	4	44.4
Influenza A and B	0	0.0
Enterovirus/rhinovirus	0	0.0
Parainfluenza (all types)	0	0.0
Respiratory Syncytial Virus (RSV)	1	11.1
Combined outbreaks ³	0	0.0
Other organisms ⁴	0	0.0
No organism identified	4	44.4
TOTAL	9	100.0
Cumulative outbreaks (season to date) ¹	N	
Influenza A	87	12.7
Influenza B	123	18.0
Influenza A and B	5	0.7
Enterovirus/rhinovirus	117	17.1
Parainfluenza (All types)	36	5.3
Respiratory Syncytial Virus (RSV)	60	8.8
Combined outbreaks ³	42	6.1
Other organisms ⁴	90	13.2
No organism identified	123	18.0
TOTAL	683	100.0
Types of institutions for cumulative outbreaks		
Long-Term Care Homes	439	64.3
Hospitals	50	7.3
Retirement Homes	98	14.3
Other ⁵	4	0.6
Unknown	92	13.5
TOTAL	683	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/04/23].

Notes:

¹ Season to date includes all outbreaks in which the date of onset of illness for the first case associated with the outbreak occurred between September 1, 2013 (Week 36) and the current reporting week, as well as outbreaks in which the date of onset of illness for the first case is missing.

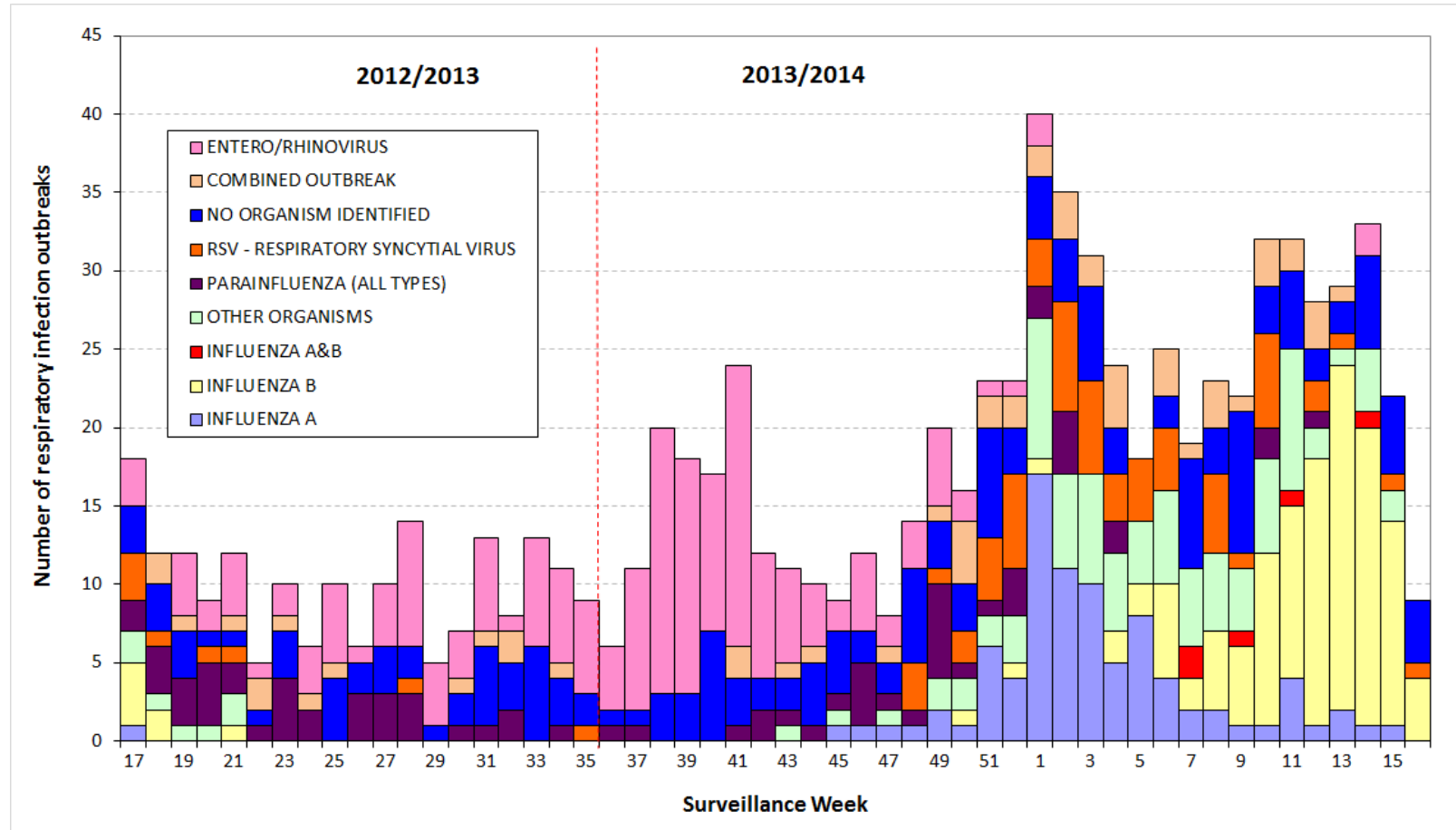
² New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded in iPHIS in the current surveillance period; i.e. April 13 – April 19, 2014 (Week 16).

³ Combined outbreaks include outbreaks in which more than one non-influenza organism has been identified (e.g. RSV, parainfluenza, rhinovirus, etc.).

⁴ Other organisms include outbreaks involving other aetiological agents, such as human metapneumovirus, adenovirus, and coronavirus.

⁵ Other types of institutions include: correctional facilities, group homes, shelters, and facilities operating under the *Developmental Services Act*. Note that school-based and child care centre respiratory outbreaks are not captured in this table.

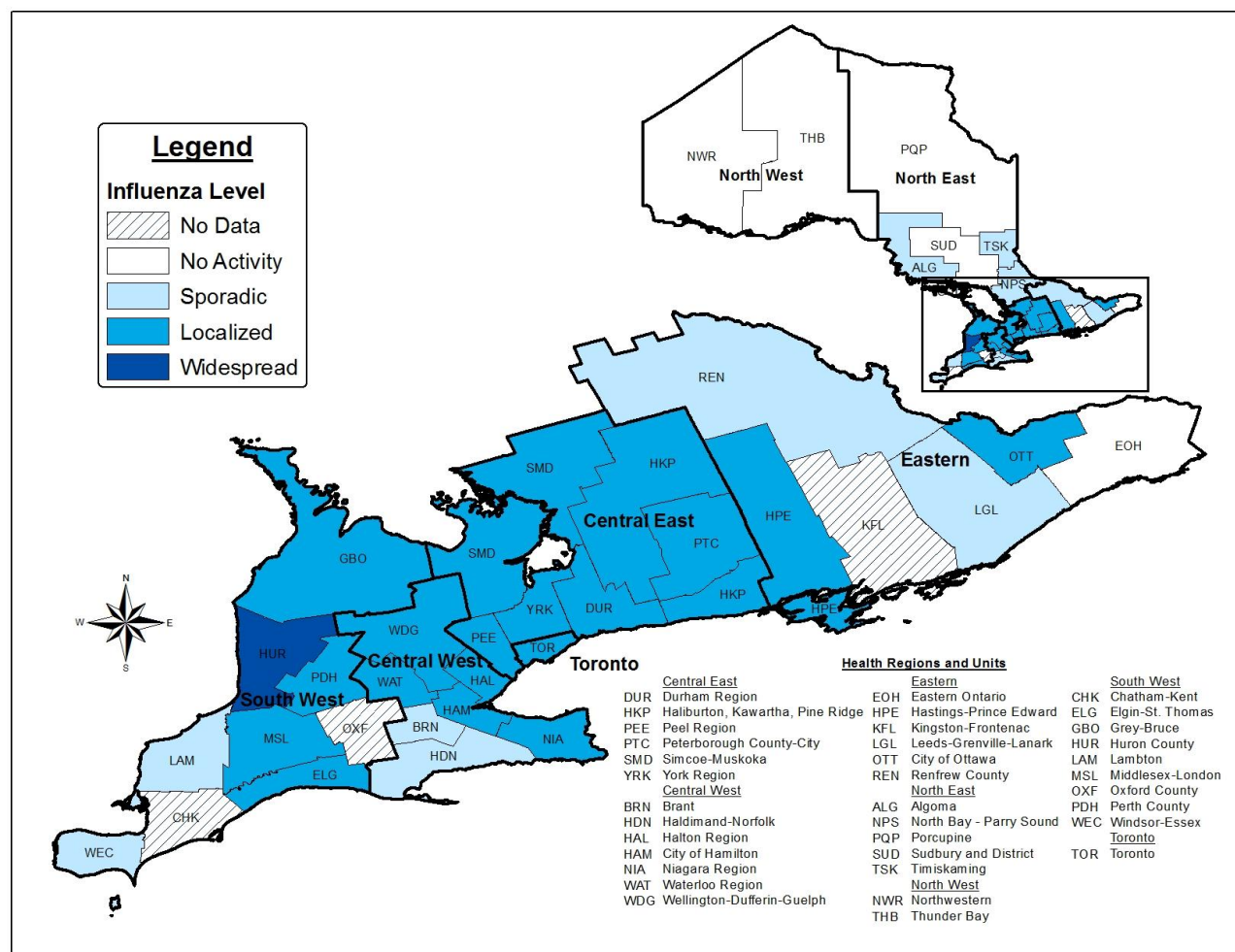
Figure 5. Institutional respiratory infection outbreaks by week of illness onset in the first case: Ontario, April 21, 2013 to April 19, 2014



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/04/23].

Notes:

Institutional respiratory infection outbreaks for which the date of onset of illness for the first case is missing are excluded in this figure. However, these outbreaks are counted in the cumulative outbreaks section of Table 4.

Figure 6. Influenza activity levels reported by public health units: Ontario, April 13, 2014 to April 19, 2014 (Week 16)

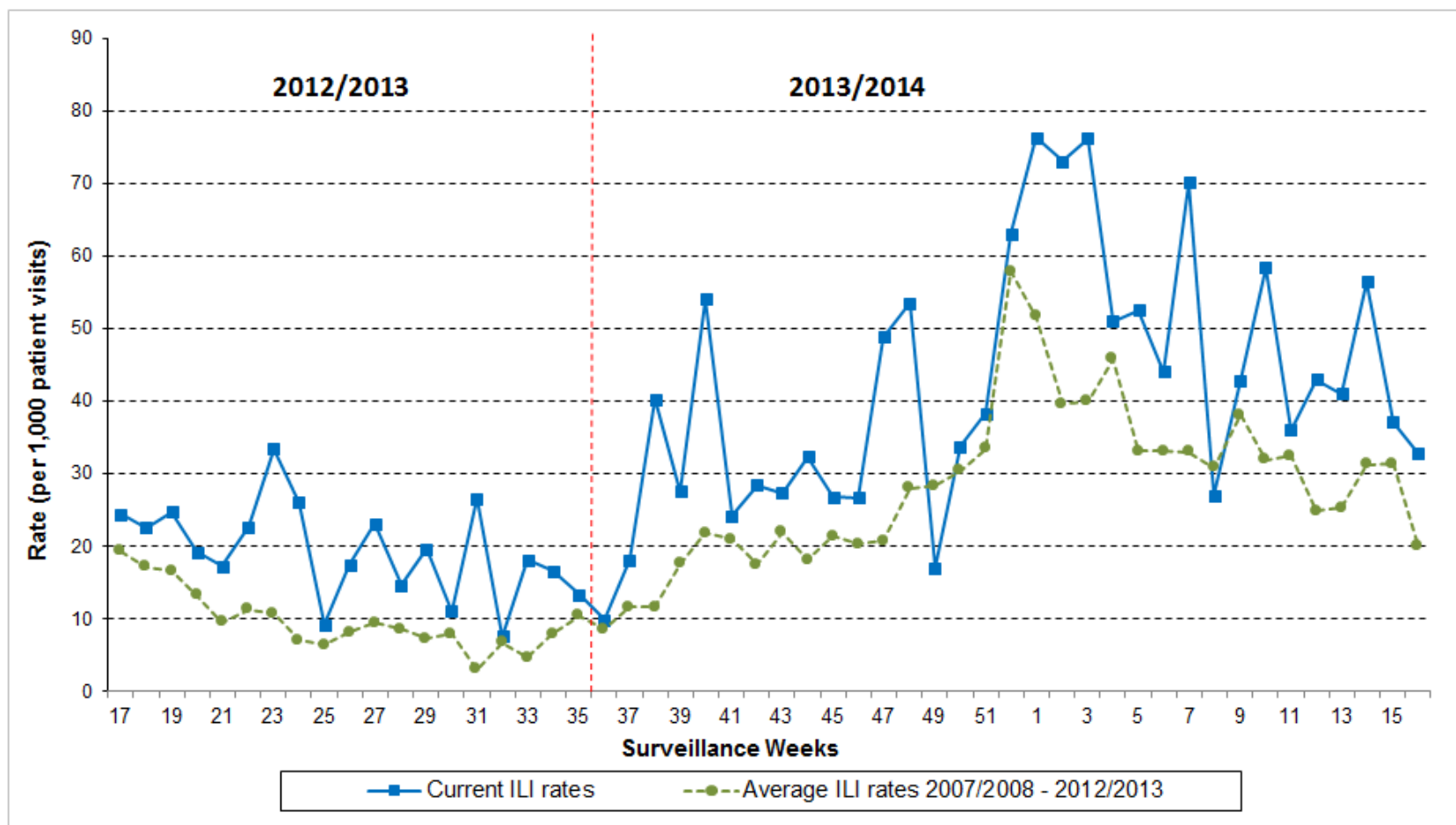
Source: Public Health Ontario [Provincial Influenza Activity Report (Appendix C) Database]

Notes:

Influenza activity levels are assigned by local public health units and reported to Public Health Ontario by the Tuesday following the end of each 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 refer to the [detailed definitions for the 2013-2014 season for more information](#).

Activity levels reported for a particular surveillance week may not necessarily correspond to the number of new outbreaks reported in the same week in Table 3 because ongoing outbreaks from previous weeks, as well as laboratory confirmed outbreaks in schools, may be included in the assessment of the activity level.

Figure 7. Overall influenza-like-illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel sites, by surveillance week: Ontario, April 21, 2013 to April 19, 2014



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

Notes:

ILI consultations and total clinic visits are reported to PHAC each week by participating sentinel sites; 55 sentinel sites reported in Week 16. Due to the small number of sentinel sites reporting each week, readers are advised to consider overall trends and place less emphasis on week-to-week fluctuations.

Ontario average ILI rates include data from the 2007-2008 to the 2012-2013 seasons, excluding ILI rates during the time period of the influenza pandemic in Ontario (April 2009 to January 2010) due to the incomparability of those rates to a regular influenza season.

Table 5. Influenza-like illness (ILI) consultation rate (per 1,000 patient visits) by age group as reported by sentinel sites: Ontario, Week 16

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of Patients with ILI	9	9	20	4	0	42
Number of Total Consultations	81	110	737	352	0	1,280
<i>ILI Consultation Rate (per 1,000 patient visits)</i>	111.1	81.8	27.1	11.4	0.0	32.8

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

Notes:

ILI consultations and total clinic visits are reported to PHAC each week by participating sentinel sites; 55 sentinel sites reported in Week 16. ILI consultation rates presented in Table 5 should be interpreted with caution, as small numbers of sentinel sites reporting can result in unstable ILI rates.

APPENDIX**Table I.** Strain characterization completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2013 to April 24, 2014

Influenza strains	Ontario	Canada
Influenza A (H3N2) A/Texas/50/2012-like	65	93
Influenza A (H1N1)pdm09 A/California/07/2009-like	494	1,320
Influenza B B/Brisbane/60/2008-like	2	20
Influenza B B/Massachusetts/02/2012-like	177	381

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

Notes:

The influenza strains recommended by the World Health Organization (WHO) for the Northern Hemisphere vaccine for the [2013-2014 season](#) were: an A/California/7/2009-like (A H1N1pdm09-like virus), an A/Texas/50/2012-like virus, and a B/Massachusetts/02/2012-like virus (Yamagata lineage).

The WHO recommendations for the [2014-2015](#) trivalent influenza vaccine for the northern hemisphere are: an A/California/7/2009 (H1N1)pdm09-like virus, an A/Texas/50/2012 (H3N2)-like virus, and a B/Massachusetts/2/2012-like virus. WHO also recommends that quadrivalent vaccines containing two influenza B viruses include a B/Brisbane/60/2008-like virus.

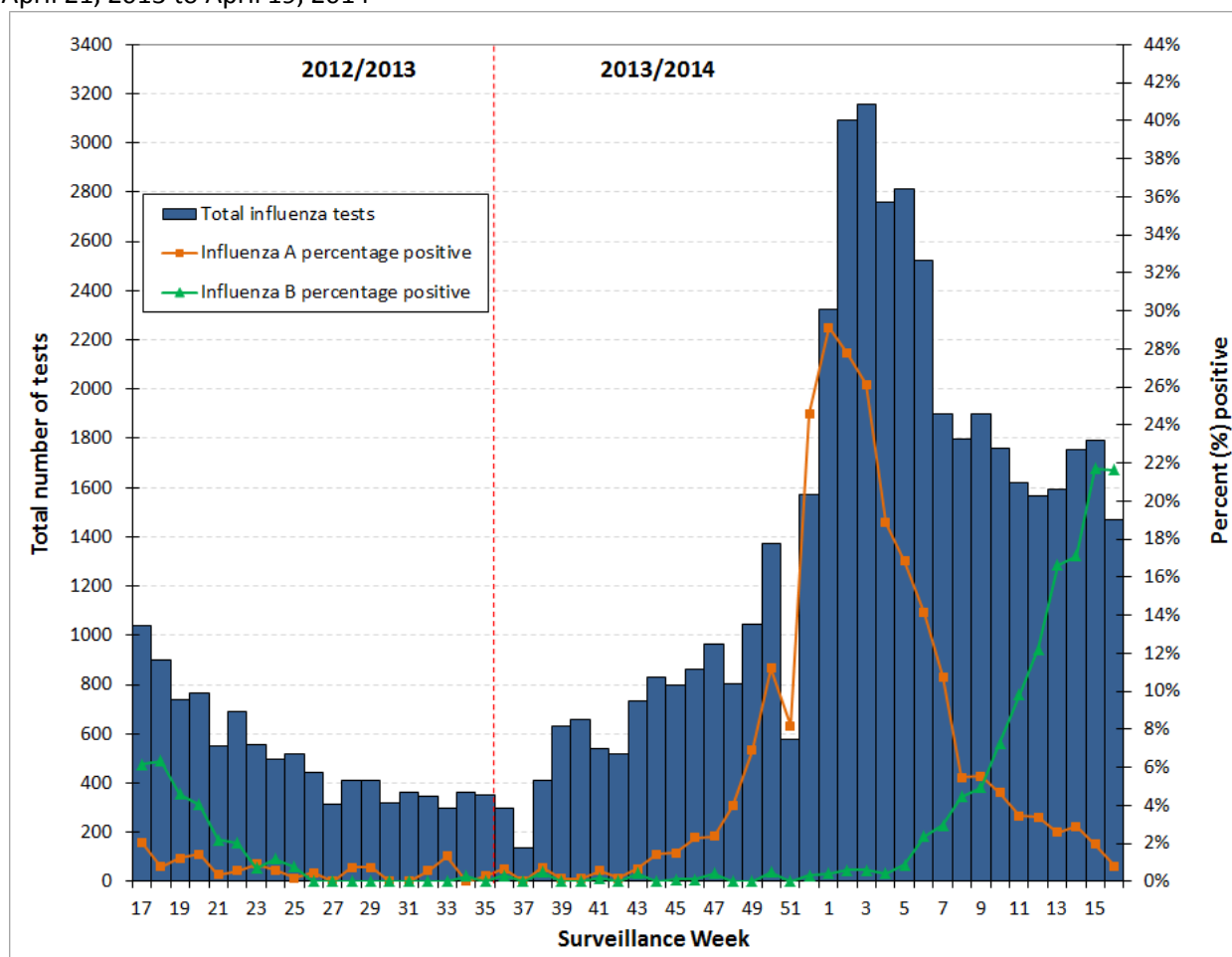
Table II. Amantadine, oseltamivir and zanamivir susceptibility assays completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2013 to April 24, 2014

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)	86	0	119	0	0	57	0	75	0	53	0	70
Influenza A (H1N1)pdm09	494	0	1,355	0	0	460	0	1,214	0	437	0	1,180
Influenza B	NA	NA	NA	NA	0	106	0	266	0	81	0	229

(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 21, 2013 to April 19, 2014



Source: These data have been obtained from the Public Health Agency of Canada's (PHAC) Centre for Immunization and Respiratory Infectious Diseases (CIRID) respiratory virus detection tables as of April 23, 2014; they are based on data submitted to PHAC from 16 laboratories in Ontario.

Notes:

The numbers reported in this figure represent results submitted to the CIRID by 16 participating laboratories in Ontario, including 11 Public Health Ontario Laboratories and five hospital-based laboratories.

Interpret results for Week 51 with caution as only four laboratories in Ontario, three of which were hospital-based laboratories, submitted results to the CIRID.

Results above are assigned to a particular surveillance week based on when test results are reported to PHAC; these data are not updated when results are submitted late for previous surveillance weeks.

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.

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