

Ontario Respiratory Virus Bulletin | 2014-2015

SURVEILLANCE WEEK 7 (February 15, 2015 – February 21, 2015)

This issue of the Ontario Respiratory Virus Bulletin provides information on the surveillance period from February 15 to February 21, 2015 (Week 7). Unless otherwise specified, **data presented in this issue of the bulletin are for Week 7** and data extraction occurred on Wednesday, February 25, 2015.

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	Lower	There were 394 influenza cases (361 influenza A and 33 influenza B) reported ¹ in Week 7, which was lower than the 558 influenza cases reported in Week 6 (531 influenza A and 27 influenza B).
Percent positivity for influenza ²	Lower	Percent positivity ² of laboratory tests for all influenza types in Week 7 was 20.2%, which was lower than the percent positivity in Week 6 (23.0%).
Influenza outbreaks ³	Lower	There were 15 new influenza outbreaks reported in Week 7 which was lower than the number of influenza outbreaks reported in Week 6 (22).
Influenza activity levels reported by health units	Lower	In Week 7, 6 health units reported 'widespread' activity, 23 reported 'localized' activity, 3 health units reported 'sporadic activity', and 1 health unit reported 'no activity'. In Week 6, 11 health units reported 'widespread' activity, 22 reported 'localized' activity, and 3 health units reported 'sporadic' activity.
OVERALL ASSESSMENT	Lower	Overall, the indicators show that influenza activity for Week 7 was lower compared to Week 6.
Measures of severity for influenza		
Hospitalizations among laboratory-confirmed cases of influenza ¹	Similar	There were 221 hospitalized cases reported in Week 7, which was similar to the 227 hospitalized cases reported in Week 6.
Deaths among laboratory-confirmed cases of influenza ¹	Similar	There were 19 deaths reported in Week 7, which was similar to the 22 deaths reported in Week 6.

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. Case counts are based on the date the case was reported to the health unit. 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 meeting the provincial outbreak definition, as reported in iPHIS.

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

Influenza activity in Ontario during week 7 was moderate overall, but lower compared to week 6.

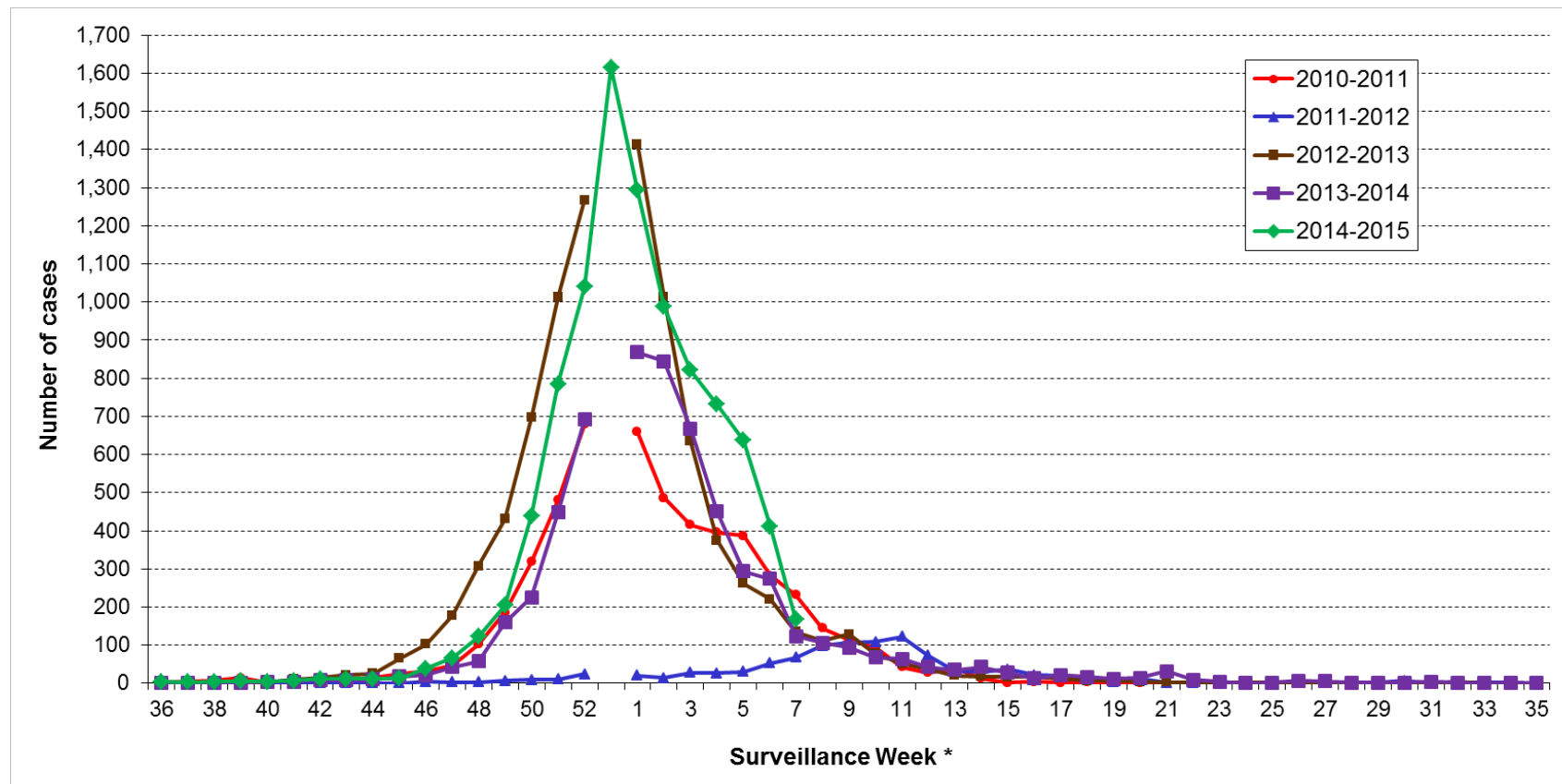
- Influenza A percent positivity was 18.9% in Week 7, which was lower than Week 6 (21.6%); Influenza B percent positivity was 1.3% in Week 7, which was similar to Week 6 (1.5%).¹
- For the 2014-2015 surveillance season to date, 9,621 laboratory-confirmed influenza cases² have been reported. Among these cases, the majority (98.1%, 9,436/9,621) were influenza A (Table 1). Of the 3,335 reported influenza A cases with subtype available, 99.4% (3,314/3,335) were H3N2.
- Of the 1,229 institutional respiratory infection outbreaks reported to date in the 2014-2015 season, influenza was detected in 879; 864 were influenza A, nine were influenza B, and in six both influenza A and B were detected. Of the influenza A outbreaks with subtype information reported, 354/354 or 100%, were H3N2.
- In the season to date, 2,733 hospitalizations³ and 193 deaths have been reported among laboratory-confirmed influenza cases. The majority of hospitalizations (98.8%, 2,701/2,733) and all of the deaths occurred in influenza A cases. Additionally, 91.7% (177/193) of the deaths and 75.0% (2,050/2,733) of the hospitalizations were in individuals 65 years of age and older.
- Among other circulating non-influenza respiratory viruses identified through laboratory testing:
 - Respiratory syncytial virus (RSV) was the most common circulating non-influenza respiratory virus in Week 7. The percent positivity for RSV was 8.0% in Week 7 compared to 7.4% in Week 6.
 - Coronavirus was the second most common circulating non-influenza respiratory virus in Week 7. The percent positivity for coronavirus was 7.0% in Week 7 compared to 8.9% in Week 6.

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). Due to rounding percentages presented here may not add up to the overall influenza percent positivity presented on page 1.

² These data do not include approximately 1,200 cases in total for weeks 52, 53 and 1 of the 2014-2015 season as they were not reported through iPHIS.

³ These data do not include approximately 410 hospitalized laboratory-confirmed cases in total for weeks 52, 53 and 1, as they were not reported through iPHIS.

Figure 1. Number of reported confirmed cases of **influenza A** by surveillance week: Ontario, September 1, 2010 to February 21, 2015



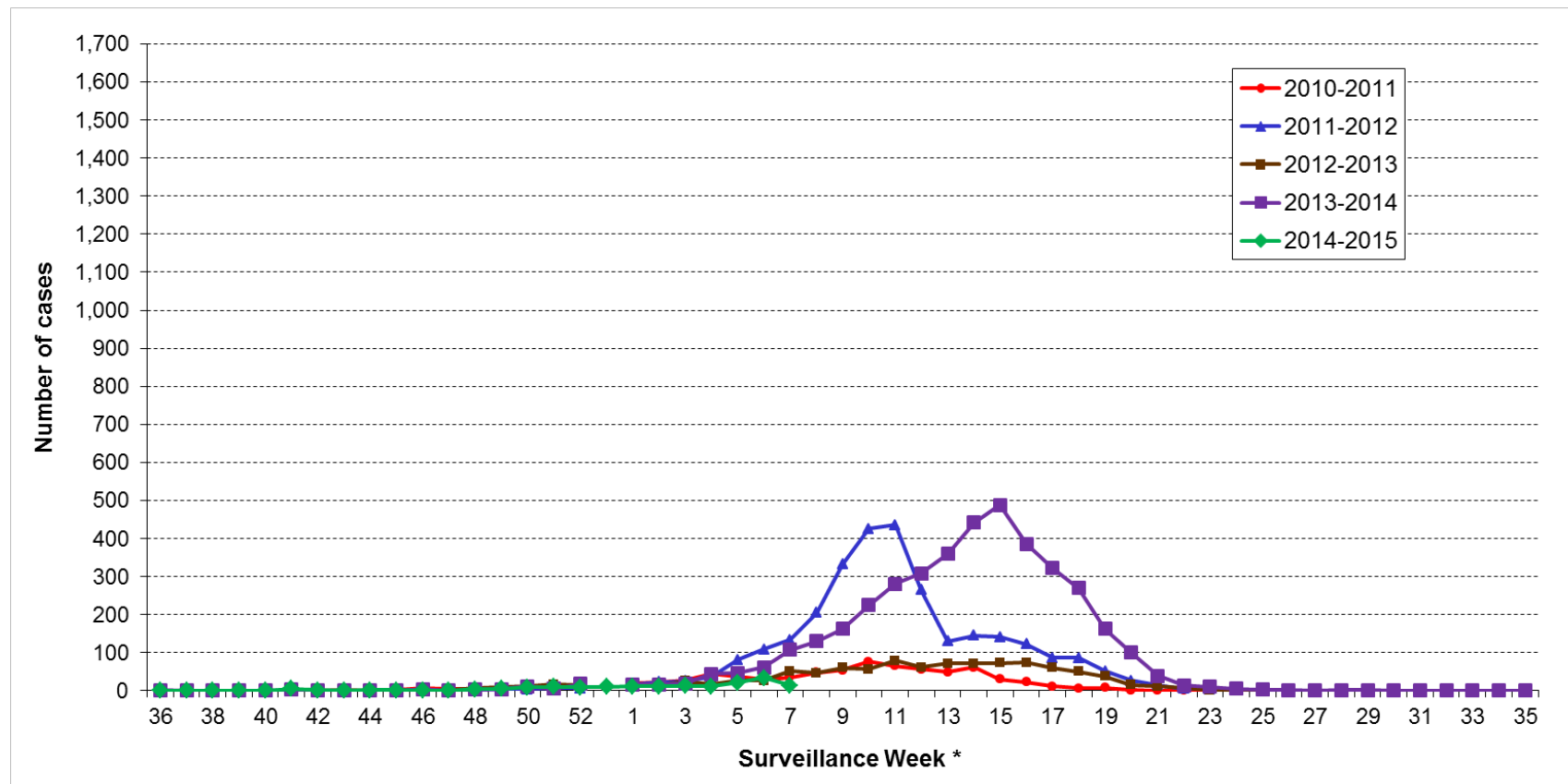
Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2015/02/25].

Notes:

Interpret most recent case counts for the current season with caution due to reporting lags. These data do not include approximately 1,200 cases in total for weeks 52, 53 and 1 of the 2014-2015 season as they were not reported through iPHIS.

*Unlike the other seasons presented, the 2014-2015 season includes a week 53; a week 53 occurs once every five to six years. 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.

Figure 2. Number of reported confirmed cases of **influenza B** by surveillance week: Ontario, September 1, 2010 to February 21, 2015



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2015/02/25].

Notes:

Interpret most recent case counts for the current season with caution due to reporting lags. These data do not include approximately 10 cases in total for weeks 52, 53 and 1 of the 2014-2015 season as they were not reported through iPHIS.

*Unlike the other seasons presented, the 2014-2015 season includes a week 53; a week 53 occurs once every five to six years. 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 7 and cumulative total (in parentheses) for the 2014-2015 season

Health Unit and Region	Influenza A				Influenza A & B	Influenza B	TOTAL
	(H1N1) pdm09	H3	Other *	No subtype available			
Northwestern	0 (0)	0 (18)	0 (0)	0 (79)	0 (0)	0 (0)	0 (97)
Thunder Bay District	0 (0)	2 (10)	0 (0)	13 (62)	0 (0)	0 (1)	15 (73)
TOTAL NORTH WEST	0 (0)	2 (28)	0 (0)	13 (141)	0 (0)	0 (1)	15 (170)
Algoma	0 (0)	0 (37)	0 (0)	4 (79)	0 (0)	0 (0)	4 (116)
North Bay Parry Sound District	0 (0)	0 (26)	0 (0)	20 (108)	0 (1)	1 (9)	21 (144)
Porcupine	1 (1)	0 (8)	0 (0)	15 (84)	0 (0)	0 (0)	16 (93)
Sudbury & District	0 (0)	1 (26)	0 (2)	8 (89)	0 (0)	0 (2)	9 (119)
Timiskaming	0 (0)	0 (16)	0 (0)	0 (38)	0 (0)	1 (1)	1 (55)
TOTAL NORTH EAST	1 (1)	1 (113)	0 (2)	47 (398)	0 (1)	2 (12)	51 (527)
City of Ottawa	0 (0)	1 (24)	0 (0)	31 (623)	0 (0)	5 (15)	37 (662)
Eastern Ontario	0 (0)	0 (40)	0 (0)	9 (99)	0 (0)	1 (8)	10 (147)
Hastings & Prince Edward Counties	0 (0)	0 (11)	0 (0)	1 (50)	0 (0)	4 (5)	5 (66)
Kingston, Frontenac, Lennox & Addington	0 (0)	0 (58)	0 (0)	9 (122)	0 (0)	2 (7)	11 (187)
Leeds, Grenville And Lanark District	0 (0)	0 (28)	0 (0)	4 (73)	0 (0)	0 (4)	4 (105)
Renfrew County And District	0 (0)	0 (14)	0 (0)	0 (27)	0 (0)	1 (4)	1 (45)
TOTAL EASTERN	0 (0)	1 (175)	0 (0)	54 (994)	0 (0)	13 (43)	68 (1212)
Durham Region	0 (1)	2 (173)	0 (0)	11 (179)	0 (0)	0 (4)	13 (357)
Haliburton, Kawartha, Pine Ridge	0 (0)	1 (57)	0 (0)	6 (104)	0 (0)	0 (0)	7 (161)
Peel Region	0 (2)	5 (324)	0 (1)	19 (727)	0 (0)	4 (14)	28 (1068)
Peterborough County-City	0 (0)	0 (22)	0 (0)	0 (32)	0 (0)	0 (1)	0 (55)
Simcoe Muskoka District	1 (1)	1 (89)	0 (0)	15 (380)	0 (1)	1 (14)	18 (485)
York Region	0 (1)	0 (179)	0 (0)	22 (432)	0 (0)	3 (11)	25 (623)
TOTAL CENTRAL EAST	1 (5)	9 (844)	0 (1)	73 (1854)	0 (1)	8 (44)	91 (2749)
Toronto	0 (11)	7 (1592)	0 (0)	37 (895)	0 (4)	2 (21)	46 (2523)
TOTAL TORONTO	0 (11)	7 (1592)	0 (0)	37 (895)	0 (4)	2 (21)	46 (2523)
Chatham-Kent	0 (0)	2 (19)	0 (0)	9 (58)	0 (0)	1 (2)	12 (79)
Elgin-St. Thomas	0 (0)	0 (13)	0 (0)	0 (16)	0 (0)	0 (0)	0 (29)
Grey Bruce	0 (0)	1 (46)	0 (0)	4 (106)	0 (1)	2 (4)	7 (157)
Huron County	0 (0)	0 (20)	0 (0)	2 (29)	0 (0)	0 (4)	2 (53)
Lambton County	0 (0)	0 (25)	0 (0)	0 (27)	0 (0)	1 (1)	1 (53)
Middlesex-London	0 (0)	5 (59)	0 (0)	16 (200)	0 (0)	0 (4)	21 (263)
Oxford County	0 (0)	2 (21)	0 (0)	4 (29)	0 (0)	0 (2)	6 (52)
Perth District	0 (0)	3 (14)	0 (0)	5 (33)	0 (0)	1 (1)	9 (48)
Windsor-Essex County	0 (1)	0 (50)	0 (0)	0 (122)	0 (0)	0 (3)	0 (176)
TOTAL SOUTH WEST	0 (1)	13 (267)	0 (0)	40 (620)	0 (1)	5 (21)	58 (910)
Brant County	0 (0)	1 (18)	0 (0)	1 (51)	0 (0)	1 (2)	3 (71)
City Of Hamilton	0 (0)	1 (45)	0 (0)	1 (208)	0 (0)	0 (4)	2 (257)
Haldimand-Norfolk	0 (0)	0 (8)	0 (0)	2 (62)	0 (0)	0 (1)	2 (71)
Halton Region	0 (0)	2 (53)	0 (0)	15 (301)	0 (0)	2 (4)	19 (358)
Niagara Region	0 (0)	0 (80)	0 (0)	2 (207)	0 (0)	0 (8)	2 (295)
Waterloo Region	0 (0)	3 (41)	0 (0)	23 (237)	0 (0)	0 (13)	26 (291)
Wellington-Dufferin-Guelph	0 (0)	2 (50)	0 (0)	9 (133)	0 (0)	0 (4)	11 (187)
TOTAL CENTRAL WEST	0 (0)	9 (295)	0 (0)	53 (1199)	0 (0)	3 (36)	65 (1530)
TOTAL ONTARIO	2 (18)	42 (3314)	0 (3)	317 (6101)	0 (7)	33 (178)	394 (9621)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2015/02/25].

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, 2014 and the last day of the current surveillance week. These data do not include approximately 1,200 cases in total for weeks 52, 53 and 1 for the 2014-2015 season as they were not reported through iPHIS.

* 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 7 and cumulative for the 2014-2015 influenza season

Age Group	HOSPITALIZATIONS		DEATHS	
	Weekly Count	Cumulative count (rate per 100,000)	Weekly count	Cumulative count (rate per 100,000)
<1	6	88 (62)	0	0 (0)
1 – 4	8	123 (21.4)	0	2 (0.3)
5 – 14	4	84 (5.7)	0	0 (0)
15 – 24	4	35 (1.9)	0	1 (0.1)
25 – 44	9	90 (2.5)	1	4 (0.1)
45 – 64	26	263 (6.9)	1	9 (0.2)
65+	164	2050 (99.6)	17	177 (8.6)
Total	221	2733 (20.2)	19	193 (1.4)

Sources:

Case data: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2015/02/25].

Population data: Population Estimates 2013, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, extracted by Public Health Ontario [2014/07/03].

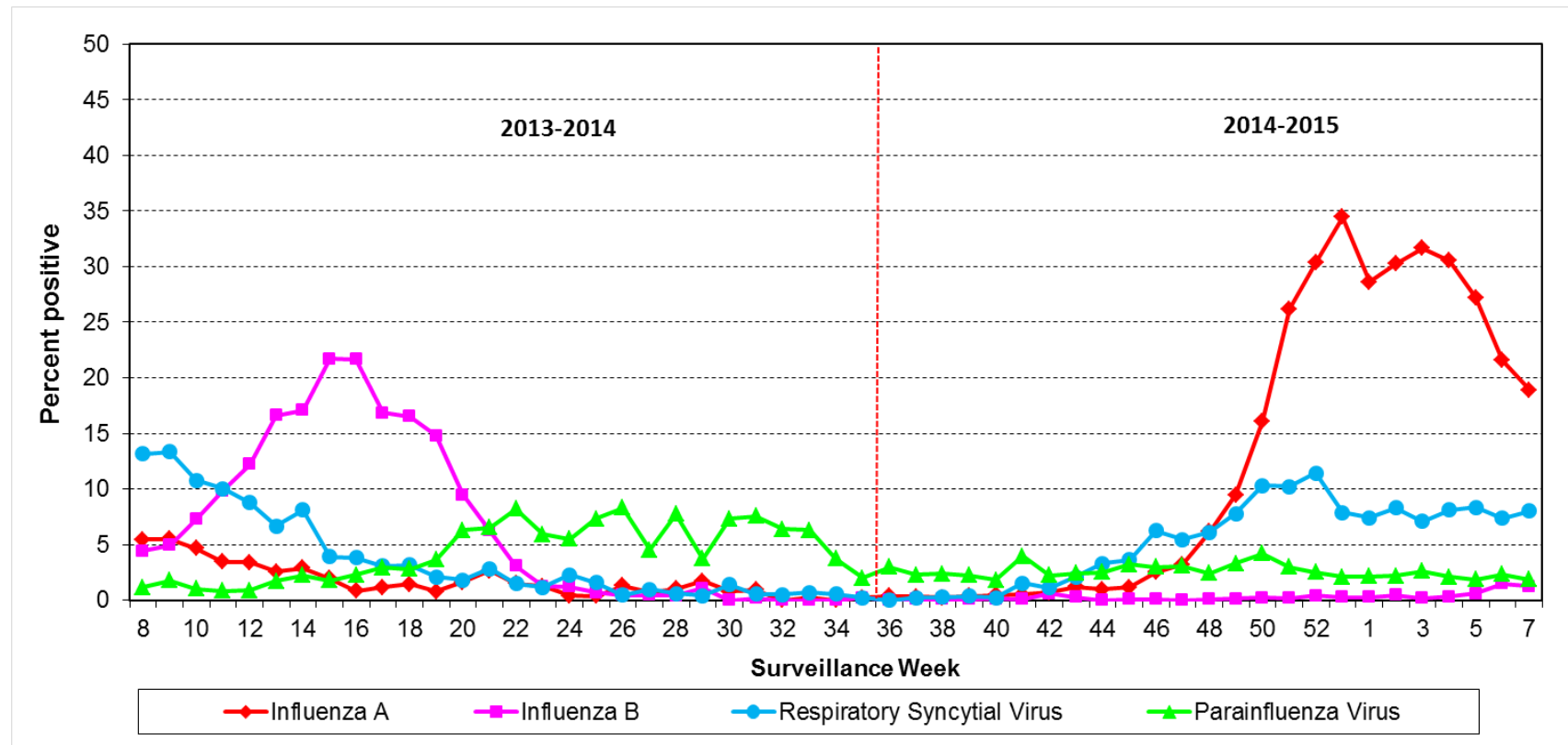
Notes:

These data do not include approximately 410 hospitalized laboratory-confirmed cases in total for weeks 52, 53 and 1, as they were not reported through iPHIS.

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. In the 2014-2015 season, only a proportion of laboratory confirmed cases are being followed up by public health units, therefore it is anticipated that the number of deaths will be a greater under-estimation of the true number of deaths than reported in previous seasons.

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, February 9, 2014 to February 21, 2015



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 February 25, 2015; they are based on data submitted to PHAC from 16 laboratories in Ontario.

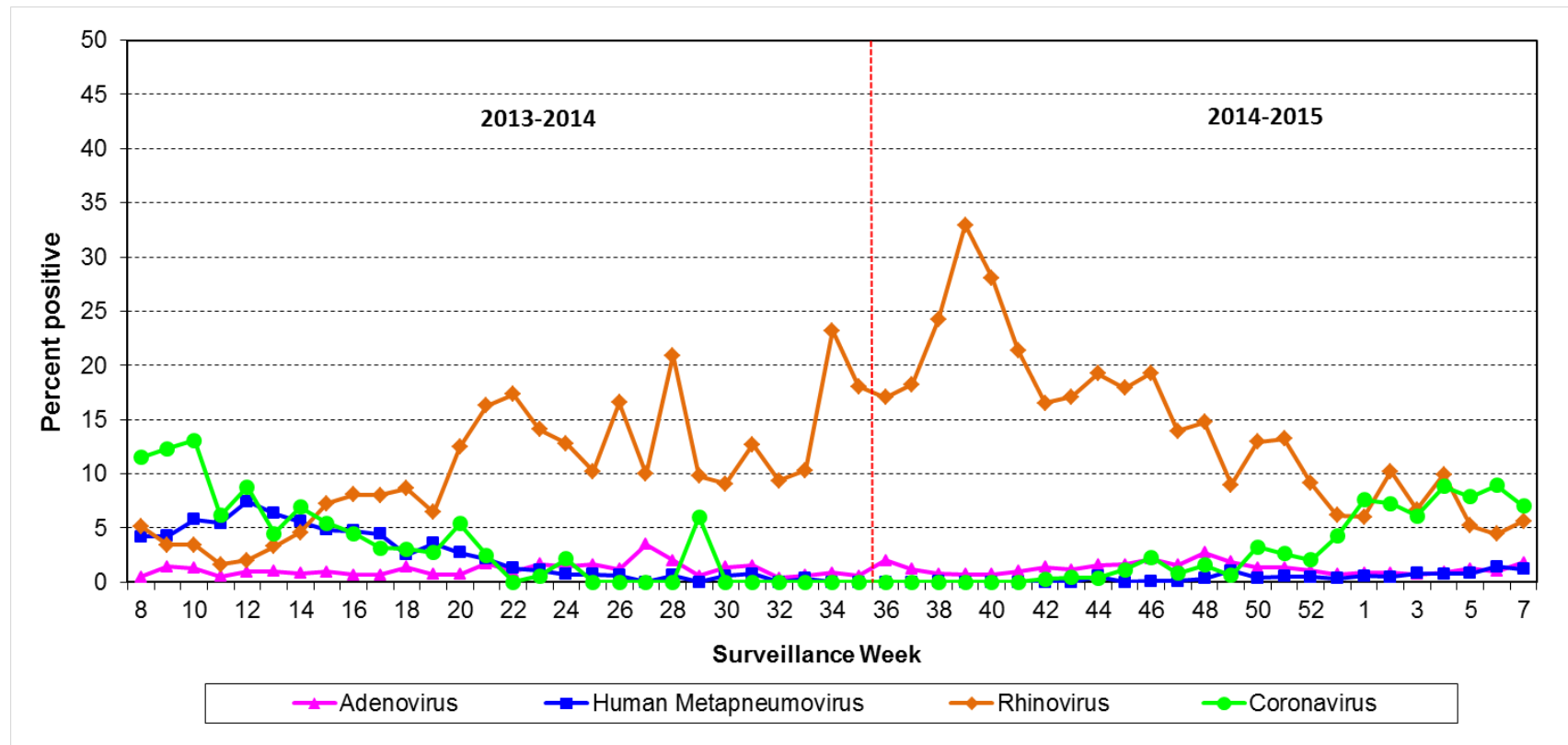
Notes:

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.

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, February 9, 2014 to February 21, 2015



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 February 25, 2015; 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.

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 7 and cumulative for the 2014-2015 season

Detected viruses	Current Surveillance Week			Cumulative for Season*		
	Number positive	Number tested	Percent positive	Number positive	Number tested	Percent positive
Influenza (All)	397	1,970	20.2%	9,971	49,773	20.0%
<i>Influenza A</i>	372	1,970	18.9%	9,794	49,773	19.7%
<i>Influenza B</i>	25	1,970	1.3%	177	49,773	0.4%
Parainfluenza virus	26	1,380	1.9%	857	37,413	2.3%
Adenovirus	25	1,380	1.8%	420	37,411	1.1%
Respiratory syncytial virus	131	1,635	8.0%	3,251	43,404	7.5%
Rhinovirus	27	478	5.6%	1,502	14,998	10.0%
Human metapneumovirus	16	1,342	1.2%	179	35,021	0.5%
Coronavirus	28	400	7.0%	391	9,110	4.3%

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 February 25, 2015; they are based on data submitted to PHAC from 16 participating laboratories in Ontario.

Notes:

*Cumulative numbers include counts from August 24, 2014 (surveillance week 35) because PHAC's CIRID data include Week 35 as part of the 2014-2015 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 7 and total for the 2014-2015 season to date¹

Institutional Respiratory Infection Outbreaks		
New outbreaks (current week) ²	Number of outbreaks	Percentage (%) of total
Influenza A	15	55.6
Influenza B	0	0.0
Influenza A and B	0	0.0
Enterovirus/rhinovirus	0	0.0
Parainfluenza (all types)	0	0.0
Respiratory Syncytial Virus (RSV)	1	3.7
Combined outbreaks ³	1	3.7
Other organisms ⁴	0	0.0
No organism identified	10	37.0
TOTAL	27	100.0
Cumulative outbreaks (season to date) ¹	N	
Influenza A	864	70.3
Influenza B	9	0.7
Influenza A and B	6	0.5
Enterovirus/rhinovirus	134	10.9
Parainfluenza (All types)	22	1.8
Respiratory Syncytial Virus (RSV)	43	3.5
Combined outbreaks ³	36	2.9
Other organisms ⁴	28	2.3
No organism identified	87	7.1
TOTAL	1229	100.0
Types of institutions for cumulative outbreaks		
Long-Term Care Homes	650	52.9
Hospitals	109	8.9
Retirement Homes	277	22.5
Other ⁵	12	1.0
Unknown	181	14.7
TOTAL	1229	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2015/02/25].

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, 2014 (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.

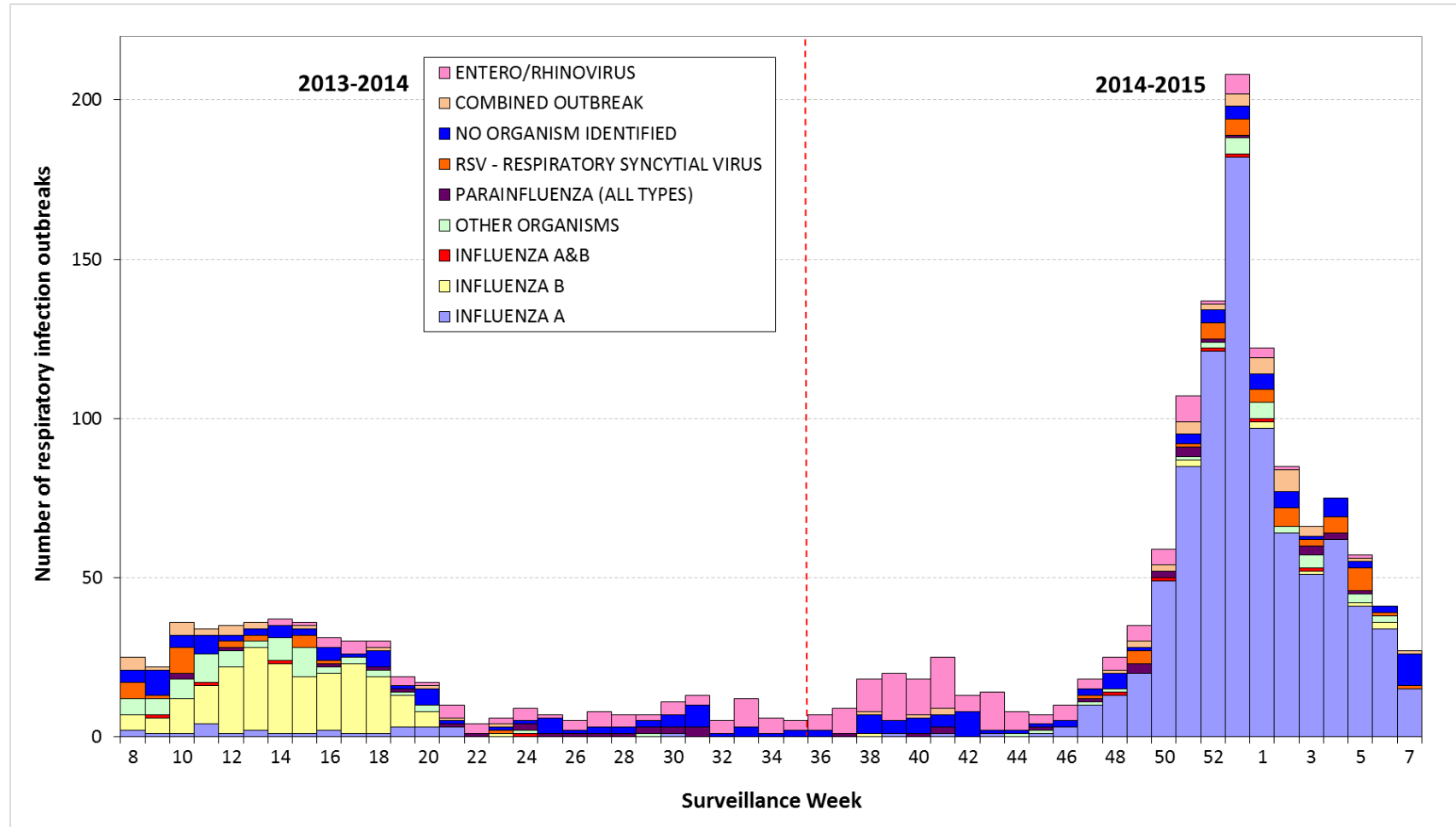
² New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded in iPHIS in the current surveillance period; i.e. February 15, 2015 – February 21, 2015 (Week 7).

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.

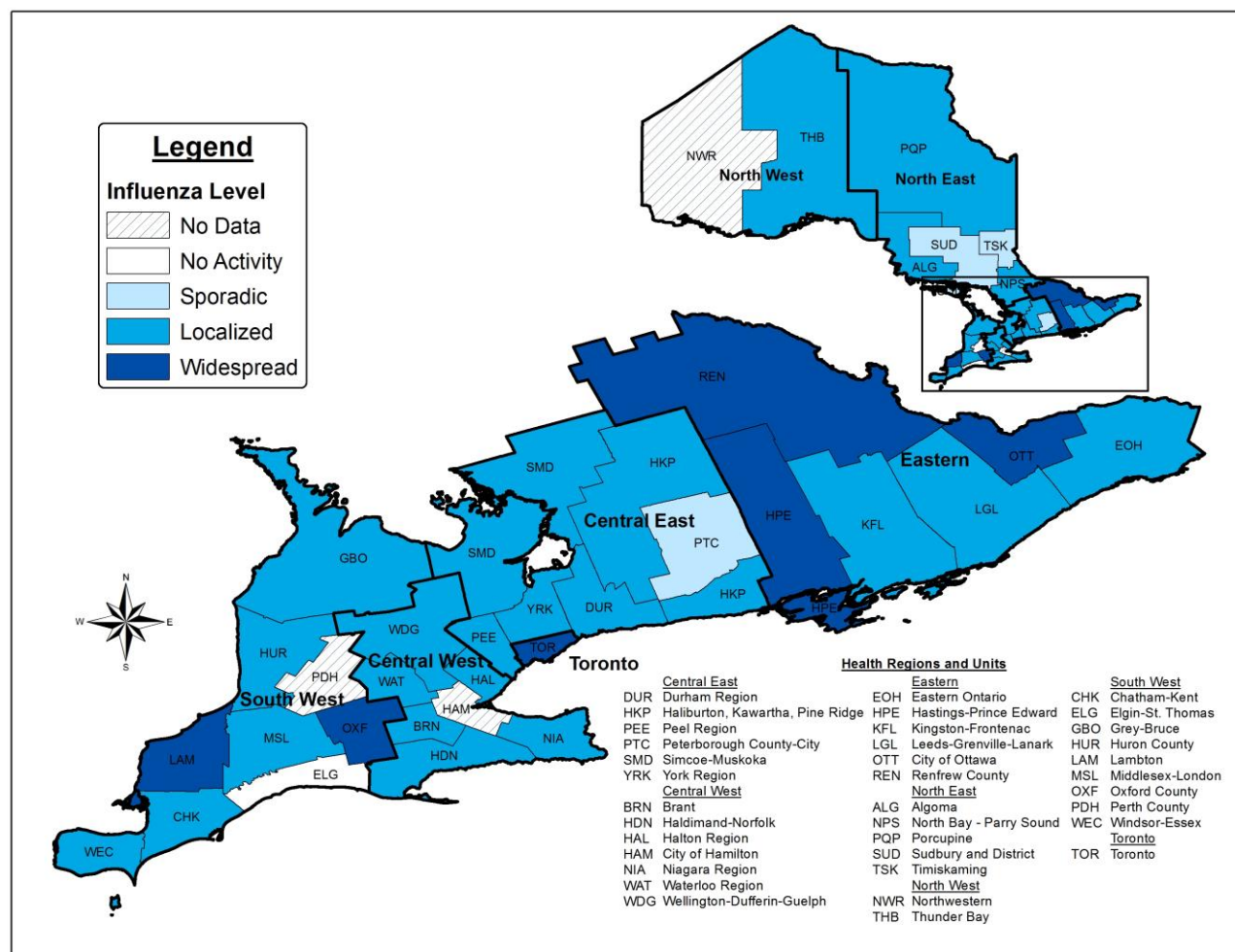
Figure 5. Institutional respiratory infection outbreaks by week of illness onset in the first case: Ontario, February 16, 2014 to February 21, 2015



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2015/02/25].

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 3.

Figure 6. Influenza activity levels reported by public health units: Ontario, February 15, 2015 to February 21, 2015 (Week 7)

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 2014-2015 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.

Due to low numbers of sentinels reporting data on influenza-like-illness (ILI), consultation rates reported by Ontario sentinels will no longer appear in the bulletin

APPENDIX**Table I.** Strain characterization completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2014 to February 26, 2015

Influenza strains	Ontario	Canada
Influenza A (H3N2)		
A/Switzerland/9715293/2013-like	19	104
A/Texas/50/2012-like	1	6*
Influenza A (H1N1)pdm09		
A/California/07/2009-like	2	2
Influenza B**		
B/Brisbane/60/2008-like	1	4
B/Massachusetts/02/2012-like	30	127

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

Notes:

*Of the six influenza A (H3N2) viruses characterized as A/Texas/50/2012, five viruses showed reduced titres to A/Texas/50/2012, one was antigenically similar to A/Texas/50/2012.

**Of the 131 influenza B viruses characterized, 124 viruses were antigenically similar to the vaccine strain B/Massachusetts/2/2012. Three viruses showed reduced titres with antiserum produced against B/Massachusetts/2/2012. Four viruses were characterized as B/Brisbane/60/2008-like.

Through genetic characterization performed at NML, sequence analysis showed that all of the H3N2 viruses (204) tested from Ontario belonged to a genetic group that typically shows reduced titers to A/Texas/50/2012 due to amino acid mutations at antigenic sites.

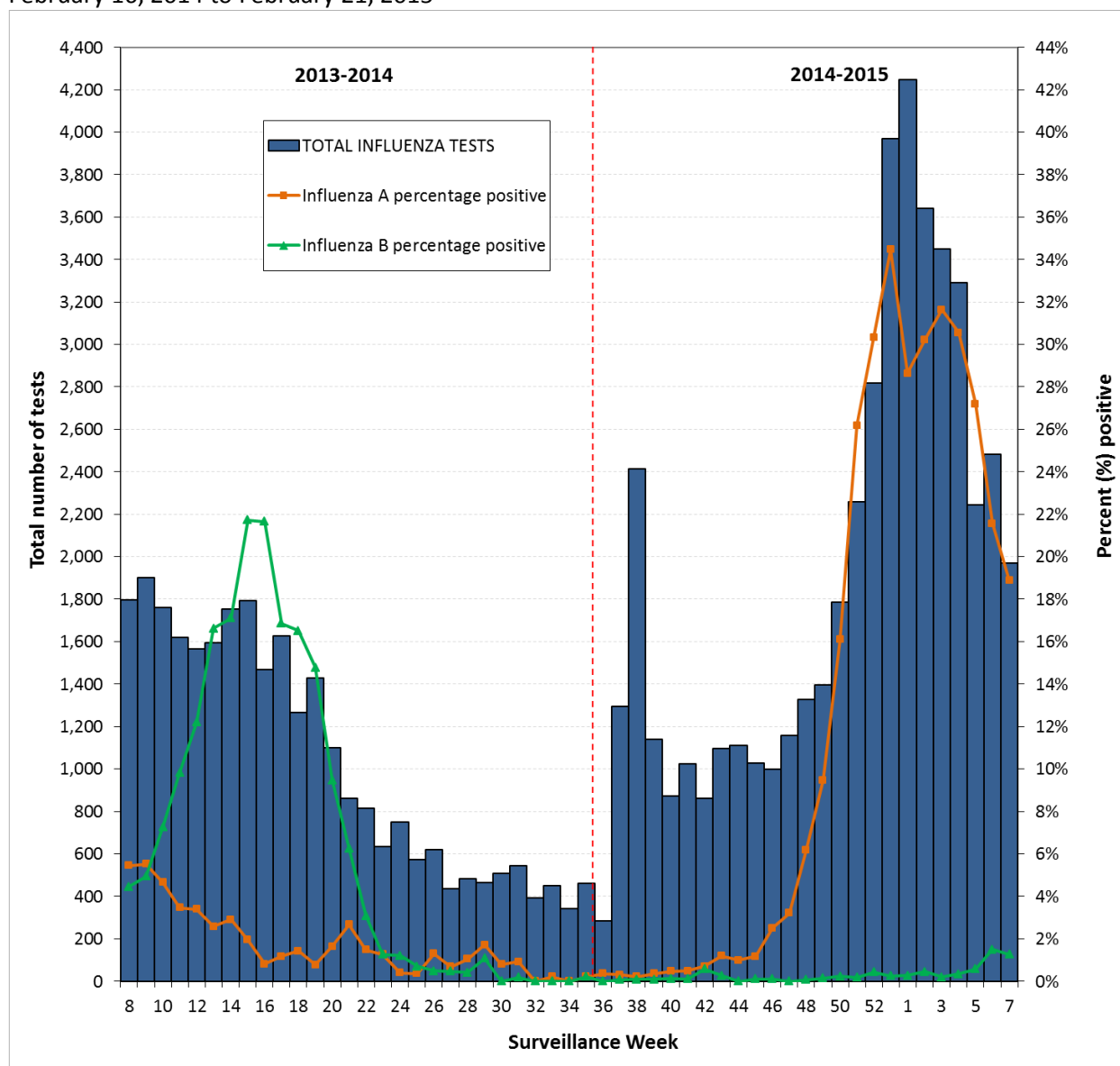
The WHO recommended influenza strains for the [2014-2015](#) trivalent influenza vaccine for the northern hemisphere are: an A/California/7/2009 (H1N1)pdm09-like virus, an A/Texas/50/2012 (H3N2)-like virus, and a B/Massachusetts/2/2012-like virus. WHO also recommends that quadrivalent vaccines containing two influenza B viruses include a B/Brisbane/60/2008-like virus. An early [estimate](#) of influenza vaccine effectiveness in Canada for the 2014-2015 season has been released. WHO has released their recommendation for strain components for the 2015/2016 Northern Hemisphere [vaccine](#).

Table II. Amantadine, oseltamivir and zanamivir susceptibility assays completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2014 to February 26, 2015

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)	238	1	953	1	0	122	1	564	0	122	0	562
Influenza A (H1N1)pdm09	2	0	3	0	0	2	0	2	0	2	0	2
Influenza B	NA	NA	NA	NA	0	20	0	92	0	20	0	92

(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, February 16, 2014 to February 21, 2015

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 February 25, 2015; 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. 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/>