



Ontario Respiratory Virus Bulletin | 2012-2013

SURVEILLANCE SEASON (September 1, 2012 – August 31, 2013)

This issue of the Ontario Respiratory Virus Bulletin is the final bulletin for the 2012-2013 season. This bulletin also provides information for the surveillance period of August 18 to August 31, 2013 (weeks 34 and 35). Unless otherwise stated, data extraction and analysis for this issue of the Bulletin occurred on September 5, 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.

Please note that Public Health Ontario will continue to publish abbreviated versions of the Ontario Respiratory Virus Bulletin on alternating weeks until November 2013. Influenza Activity Maps are available during the weeks that the bulletin is not published.

Assessment of Influenza Activity in Ontario

Measure of activity	Assessment of measure compared to previous assessment period (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory confirmed influenza cases	Lower	There was one influenza B case reported ¹ in weeks 34 and 35, compared to five cases reported in weeks 32 and 33. Percent positivity ² of laboratory tests for all influenza types in Ontario was 0.28% (0.14% influenza A; 0.14% influenza B) for weeks 34 and 35 combined, compared to 0.9% for all influenza types in weeks 32 and 33 combined.
Influenza outbreaks	Similar	No new influenza outbreaks were reported ³ in weeks 34 and 35. There were five other outbreaks for which no aetiological agent was reported (Table 4, Figure 5).
Influenza activity levels reported by health units	Lower	Health units reported no influenza activity in week 35 (Figure 6), which represents lower influenza activity in Ontario overall compared to two health units reporting 'sporadic' influenza activity in week 33.
ILI consultation rate reported by sentinels	Higher	The average provincial influenza-like-illness (ILI) consultation rate ⁴ in weeks 34 and 35 (14.98 per 1,000 patient visits) was higher than the average rate in weeks 32 and 33 at 12.81 per 1,000 patient visits (Figure 7).
OVERALL ASSESSMENT	Similar	In weeks 34 and 35, overall the indicators show that influenza activity was similar to activity in weeks 32 and 33.

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.

Season summary of respiratory virus activity in Ontario

September 1, 2012 to August 31, 2013

- Overall, **influenza activity** in the 2012-2013 surveillance season was higher than in the 2011-2012 season. The dominant influenza type was influenza A.
 - A total of 9,756 influenza cases were reported for the 2012-2013 season to date. The majority of influenza cases in the 2012-2013 season were influenza A, which accounted for 89.4% of cases (Table 1).
 - The dominant circulating influenza A subtype was H3N2, representing 90.7% of subtyped influenza A cases (Table 1) and of all subtyped influenza A positive specimens.*
 - Among influenza A isolates from Ontario characterized by the National Microbiology Laboratory, all were of a strain (A/Victoria/361/2011-like or A/California/07/09-like) that matched the influenza A components of this 2012-2013 season's trivalent influenza vaccine (Table II).
 - The timing of influenza activity in the 2012-2013 season was comparable to the timing of influenza activity in the 2010-2011 season, with multiple indicators peaking in late December/early January (Figures 1, 3, 5, 7, I).
 - A total of 3,686 hospitalizations and 280 deaths were reported among laboratory confirmed influenza cases in the 2012/13 season (Table 2). The highest hospitalization rate occurred among children less than one year of age (146.4 hospitalizations per 100,000 population), while the highest mortality rate occurred among adults 65 years of age and older (11.5 deaths per 100,000 population).
 - There were 1,419 confirmed institutional respiratory infection outbreaks reported in the 2012/13 season, including 581 (40.9%) that were laboratory confirmed as influenza A, 44 (3.1%) as influenza B, and four (0.3%) as influenza A and B combined (Table 4).
- Among **all circulating respiratory viruses** in the 2012-2013 season, influenza A had the highest percent positivity* overall (13.5%), followed by entero/rhinovirus (8.0%) and respiratory syncytial virus (RSV) (7.5%). Influenza B had a 1.6% percent positivity for the season overall (Table 3).
 - Entero/rhinovirus had the highest percent positivity of all circulating respiratory viruses in the beginning (September to November 2012) and end of the season (June to August), whereas RSV had the highest percent positivity in February and March (Figure 3).

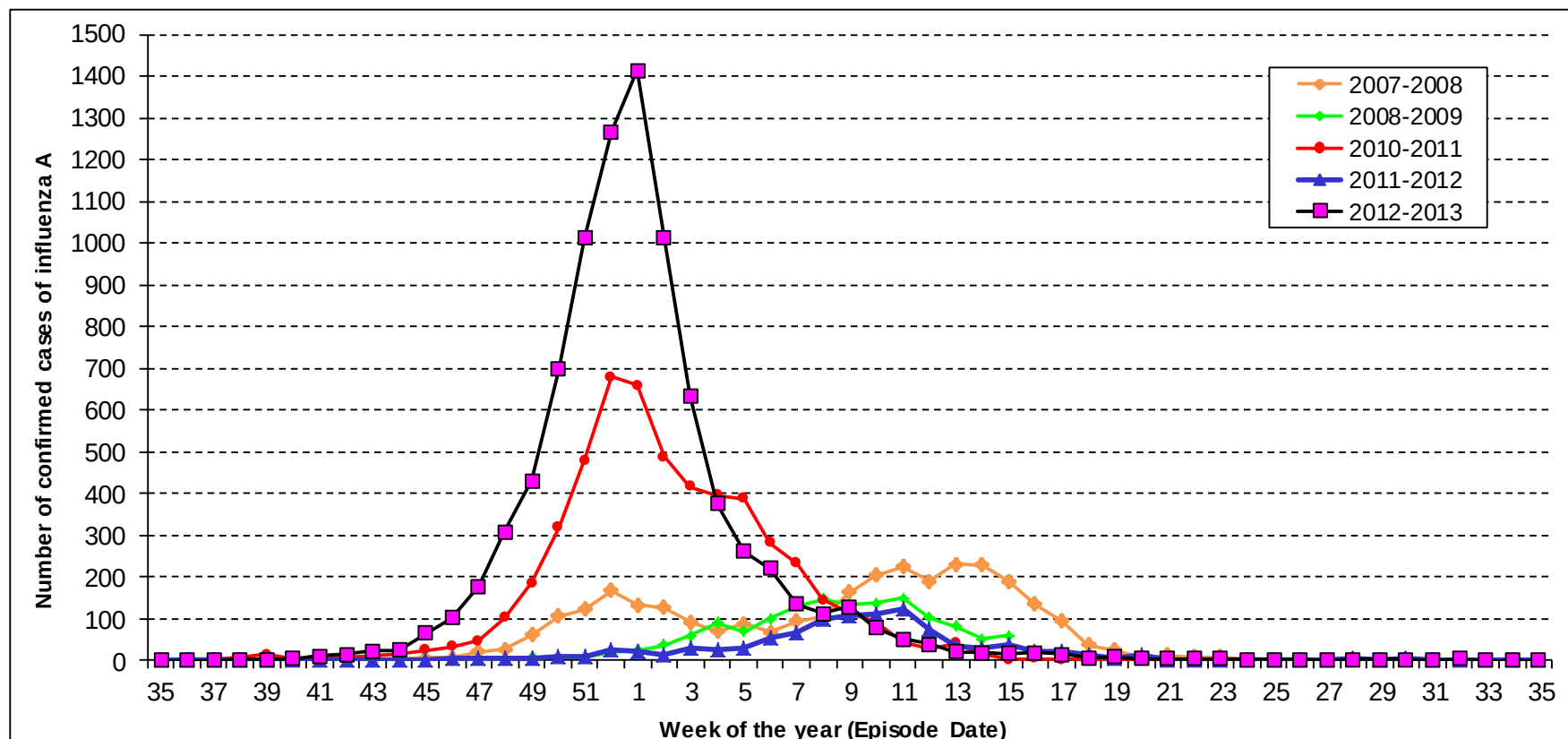
Current respiratory virus activity in Ontario

For weeks 34 and 35 compared to weeks 32 and 33

- Among all circulating respiratory viruses, entero/rhinovirus had the highest percent positivity* (15.9%) in weeks 34 and 35 combined, which was lower than weeks 32 and 33 combined (16.8%).
- Parainfluenza virus had the second highest percent positivity* (4.6%) in weeks 34 and 35 combined, which was lower than weeks 32 and 33 combined (8.2%).

* 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 August 31, 2013



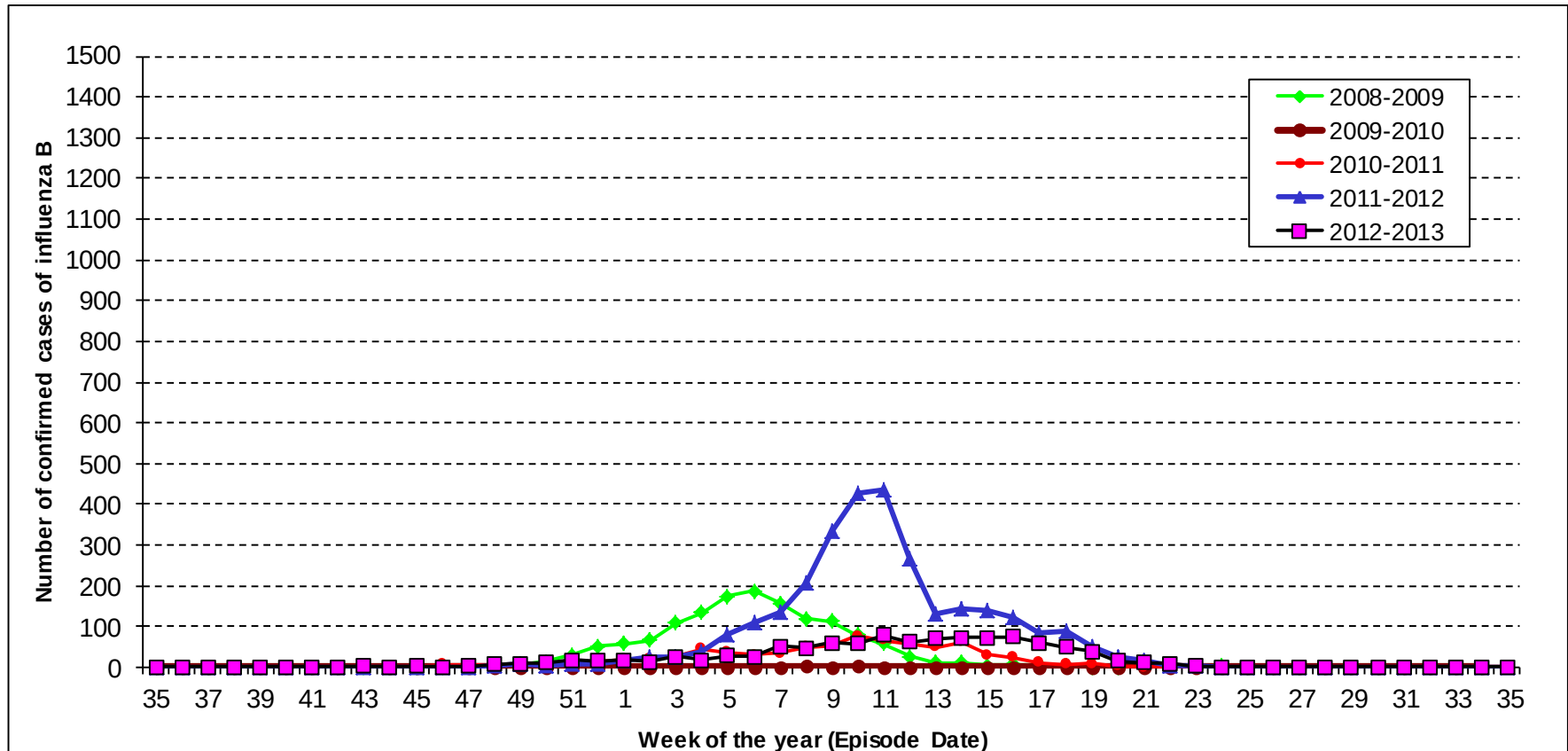
Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/09/05].

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 August 31, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/09/05].

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 (September 1, 2012 – August 31, 2013)

Table 1. Number of reported confirmed influenza cases by health unit and health region: Ontario, cumulative cases 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	3	34	0	29	0	20	86
	Thunder Bay District	3	26	0	55	0	18	102
	TOTAL NORTH WEST	6	60	0	84	0	38	188
North East	Algoma	1	63	0	45	0	26	135
	North Bay Parry Sound District	1	177	0	94	0	13	285
	Porcupine	1	30	1	30	0	5	67
	Sudbury & District	3	39	2	62	0	4	110
	Timiskaming	1	15	0	7	0	2	25
	TOTAL NORTH EAST	7	324	3	238	0	50	622
Eastern	City of Ottawa	4	470	0	24	0	46	544
	Eastern Ontario	1	55	0	55	0	5	116
	Hastings & Prince Edward Counties	3	49	0	88	0	7	147
	Kingston, Frontenac, Lennox & Addington	3	126	0	115	0	28	272
	Leeds, Grenville And Lanark District	2	57	0	54	0	19	132
	Renfrew County And District	1	33	0	17	0	11	62
	TOTAL EASTERN	14	790	0	353	0	116	1273
Central East	Durham Region	26	92	1	81	0	50	250
	Haliburton, Kawartha, Pine Ridge	5	89	0	39	0	19	152
	Peel Region	48	432	0	307	0	126	913
	Peterborough County-City	3	99	0	76	1	15	194
	Simcoe Muskoka District	7	276	0	128	0	21	432
	York Region	18	146	0	130	0	44	338
	TOTAL CENTRAL EAST	107	1134	1	761	1	275	2279
Toronto	Toronto	136	649	1	1,048	1	260	2,095
	TOTAL TORONTO	136	649	1	1048	1	260	2095
South West	Chatham-Kent	2	31	0	27	0	12	72
	Elgin-St. Thomas	1	41	0	22	0	4	68
	Grey Bruce	0	80	0	43	0	8	131
	Huron County	1	45	1	20	0	6	73
	Lambton County	2	39	0	24	0	5	70
	Middlesex-London	5	373	0	71	0	29	478
	Oxford County	1	33	2	30	0	4	70
	Perth District	3	22	0	36	0	4	65
	Windsor-Essex County	5	65	0	52	0	65	187
	TOTAL SOUTHWEST	20	729	3	325	0	137	1214
Central West	Brant County	6	67	0	95	0	3	171
	City Of Hamilton	4	544	1	40	0	45	634
	Haldimand-Norfolk	1	41	0	14	0	15	71
	Halton Region	4	209	0	52	0	25	290
	Niagara Region	7	168	0	72	0	18	265
	Waterloo Region	8	223	0	137	0	27	395
	Wellington-Dufferin-Guelph	9	119	1	105	0	25	259
	TOTAL CENTRAL WEST	39	1371	2	515	0	158	2085
	TOTAL ONTARIO	329	5057	10	3324	2	1034	9756

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/09/06].

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

Table 2. Hospitalizations and deaths among confirmed influenza cases by age group: Ontario, cumulative cases and rates for the 2012-2013 season

Age group	Number of hospitalizations	Cumulative rate per 100,000	Number of deaths	Cumulative rate per 100,000
<1	214	146.44	2	1.37
1-4	328	56.05	5	0.85
5-14	166	11.18	2	0.13
15-24	69	3.79	0	0.00
25-44	255	6.85	11	0.30
45-64	590	15.53	32	0.84
65+	2,061	104.36	228	11.54
Unknown	3	-	0	-
Total	3,686	27.24	280	2.07

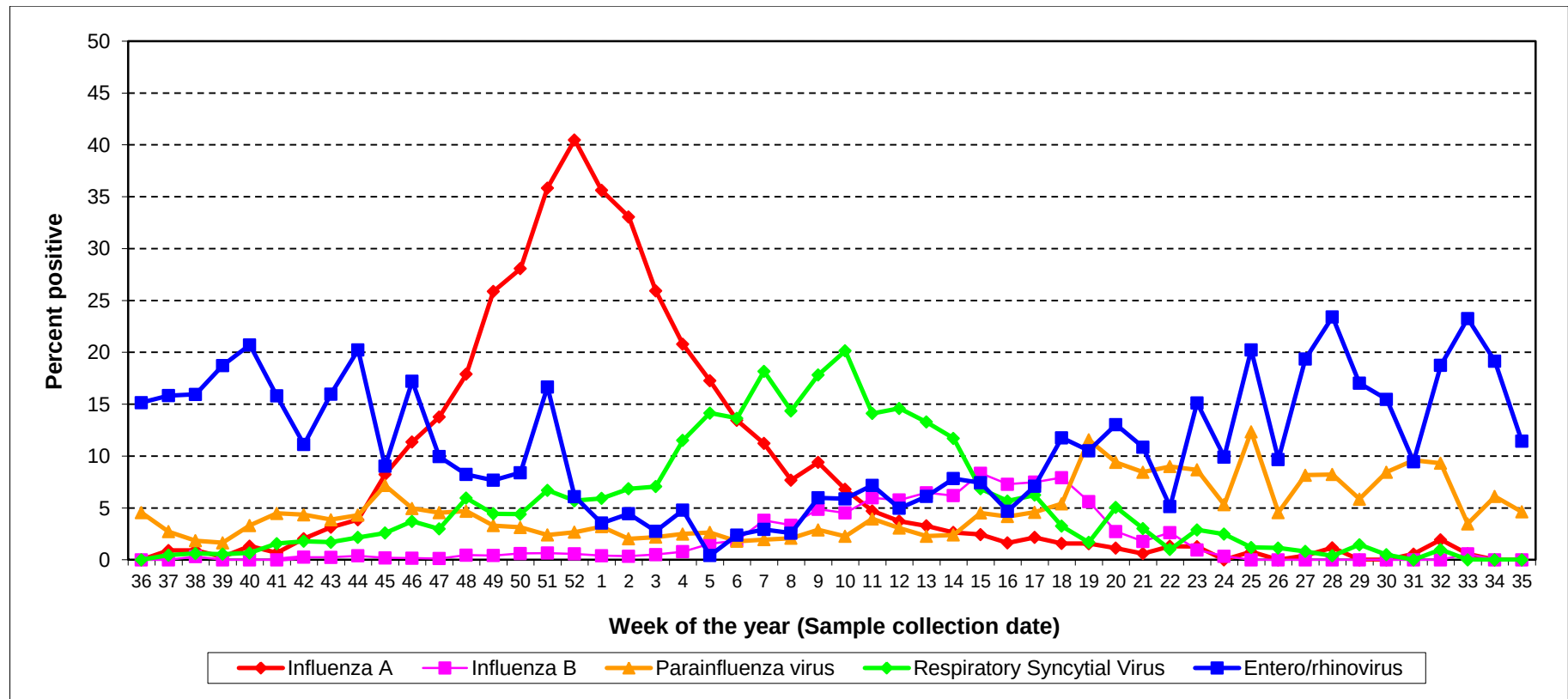
Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/09/04]. Population data obtained from IntelliHEALTH Ontario, retrieved by Public Health Ontario [2013/03/12].

Note:

The data presented reflect hospitalizations and deaths reported among all laboratory-confirmed cases of influenza. Deaths in any laboratory-confirmed 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.

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.

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 August 31, 2013



Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/09/03].

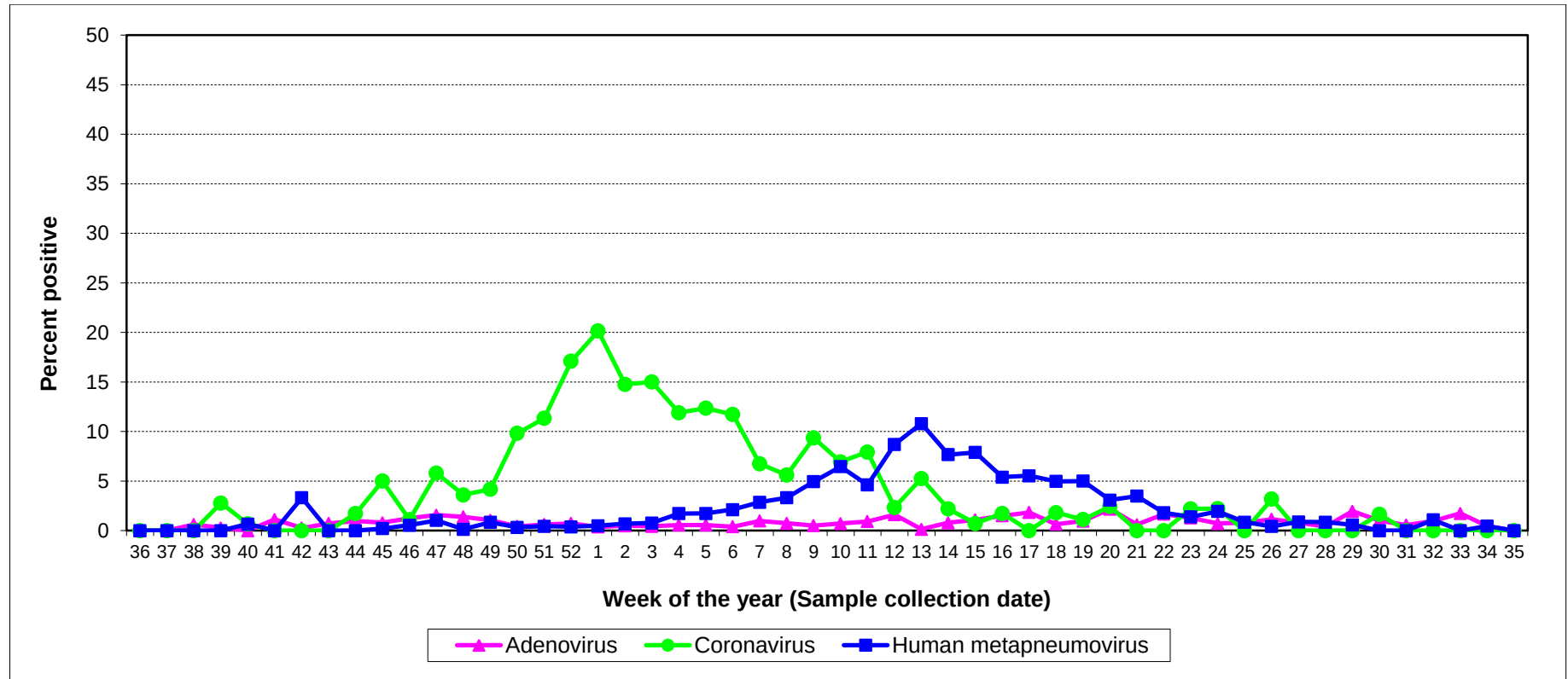
Notes:

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 August 31, 2013



Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/09/03].

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.

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Table 3. Number and percent positivity (in brackets) of respiratory specimens tested by all methods for influenza and other respiratory viruses: Ontario, weeks 34-35 and cumulative for the 2012-2013 season

Detected viruses	Number and percent positive specimens			Total number of specimens tested		
	Week 34 n (%)	Week 35 n (%)	Cumulative n (%)	Week 34 n	Week 35 n	Cumulative n
Influenza (All)	1 (0.27)	1 (0.29)	9,248 (15.06)	364	350	61,404
Influenza A	0 (0)	1 (0.29)	8,294 (13.51)	364	350	61,404
Influenza B	1 (0.27)	0 (0)	954 (1.55)	364	350	61,404
Parainfluenza virus	12 (4.18)	16 (4.98)	1,683 (3.41)	287	321	49,345
Adenovirus	4 (1.39)	1 (0.31)	327 (0.66)	287	321	49,179
Respiratory syncytial virus	1 (0.29)	2 (0.55)	4,139 (7.53)	347	364	54,942
Enterorhinovirus	24 (18.05)	27 (14.44)	1,769 (8.01)	133	187	22,082
Human metapneumovirus	0 (0)	2 (0.67)	1,156 (2.53)	260	300	45,640
Coronavirus	2 (1.90)	0 (0)	613 (3.56)	105	163	17,206

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 may not include data from late reports to PHAC. Please note that the last versions of data received from PHAC as of 4:00 p.m. on September 4, 2013 were used.

Notes:

The data in this table are 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 36, 2012 to week 35, 2013.

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.

The data used to generate these tables are also available through FluWatch: <http://www.phac-aspc.gc.ca/fluwatch/>.

Table 4. Institutional respiratory infection outbreaks: Ontario, weeks 34-35 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	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	1	7.7
RSV	0	0.0
Combined outbreaks	1	7.7
Other organisms	0	0.0
Entero/rhinovirus	6	46.2
No organism identified	5	38.5
TOTAL	13	100.0
Total respiratory infection outbreaks in the season to date		
Influenza A (All subtypes)	581	40.9
Influenza B	44	3.1
Influenza A and B	4	0.3
Parainfluenza (All types)	65	4.6
RSV	80	5.6
Combined outbreaks	103	7.3
Other organisms	133	9.4
Entero/rhinovirus	236	16.6
No organism identified	173	12.2
TOTAL	1,419	100.0
Types of institutions –All outbreaks in the season to date		
Long-term care homes	891	62.8
Hospitals	94	6.6
Retirement homes	223	15.7
Other	11	0.8
Unknown	200	14.1
TOTAL	1,419	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/09/05].

Notes:

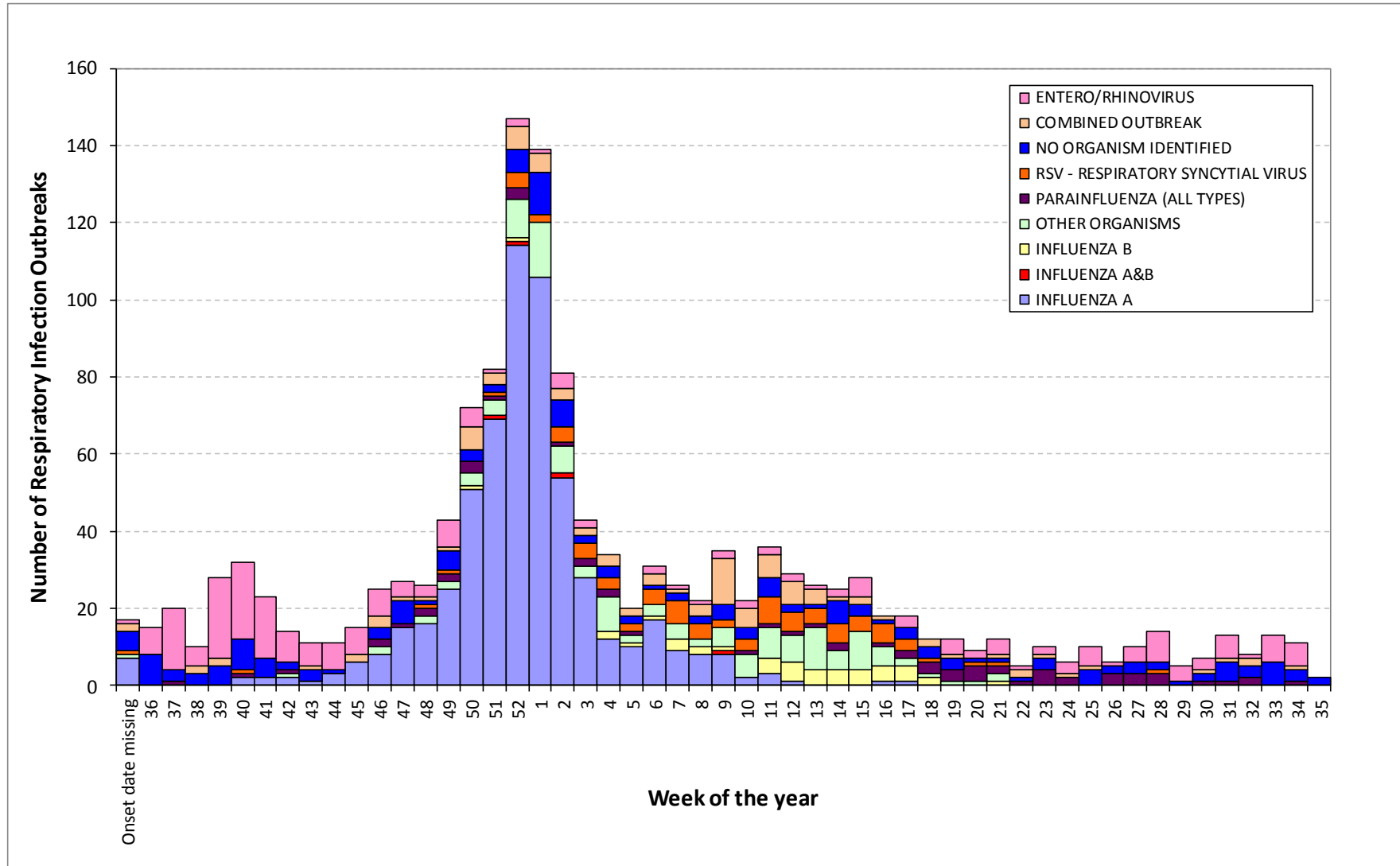
New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded through iPHIS in the current surveillance period; i.e. August 18, 2013 – August 31, 2013.

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.).

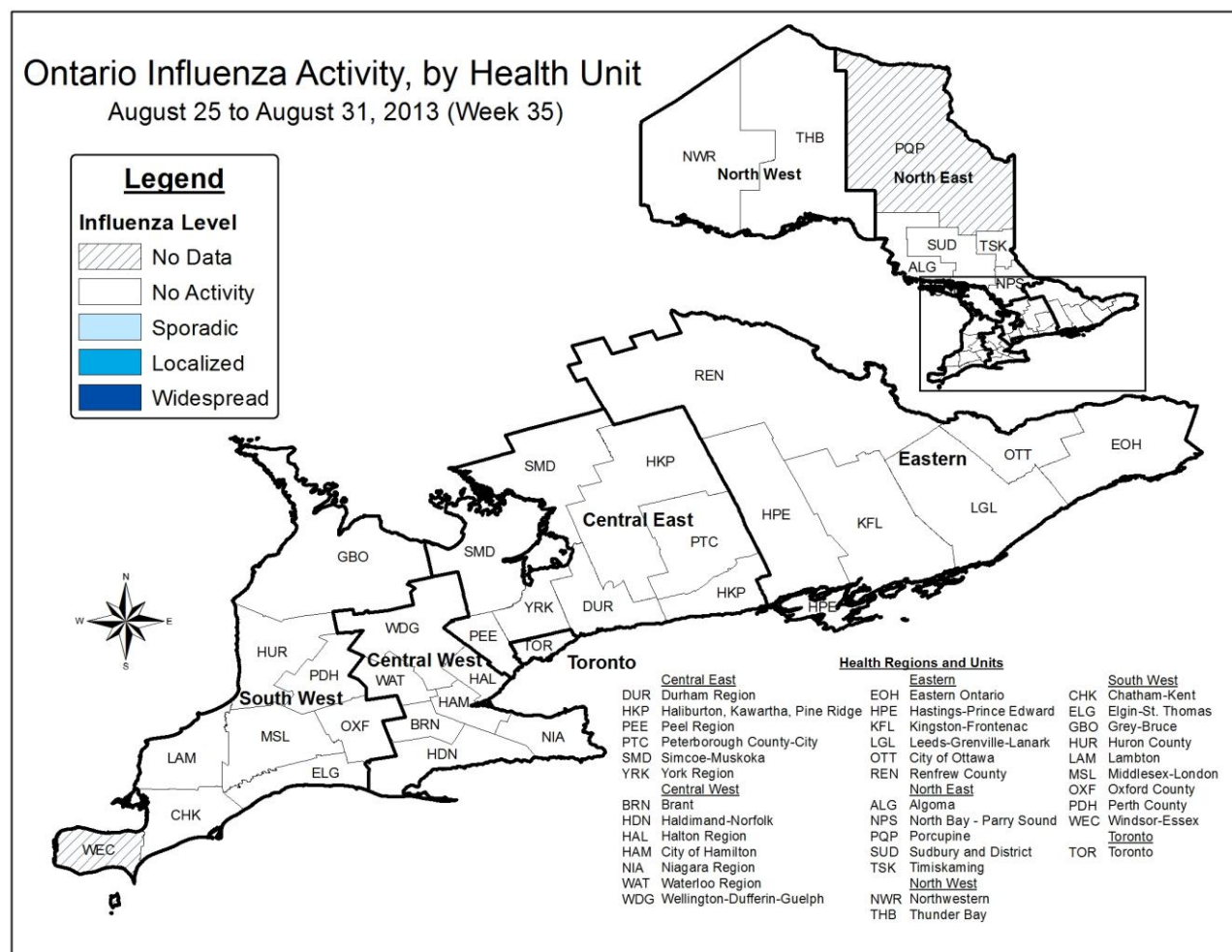
Other organisms include outbreaks involving other aetiological agents, such as human metapneumovirus, adenovirus, and coronavirus.

Figure 5. Institutional respiratory infection outbreaks by week of illness onset in the first case: Ontario, September 2, 2012 to August 31, 2013



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2013/09/05].

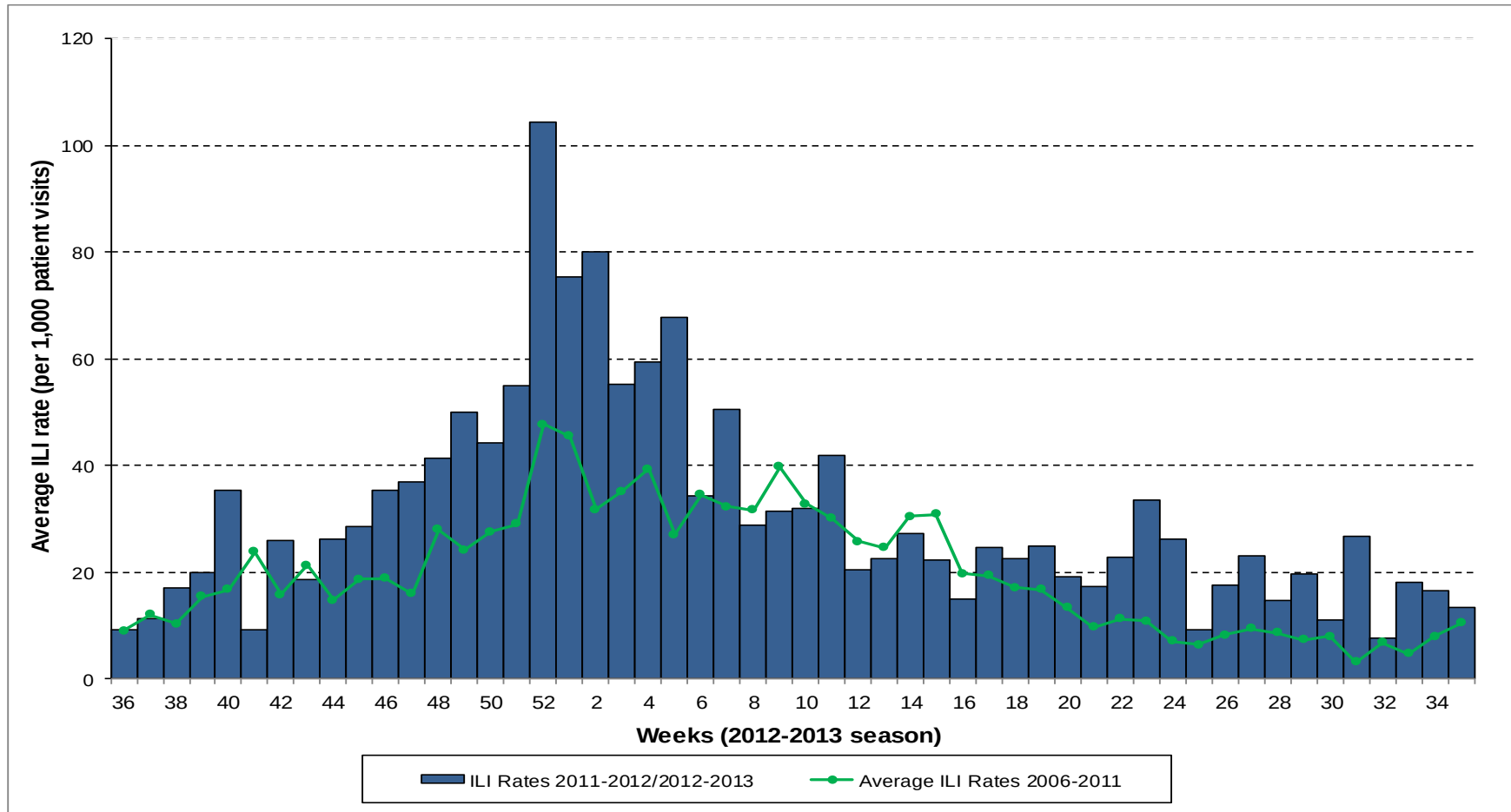
Figure 6. Influenza activity levels by health unit: Ontario, week 35



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, September 2, 2012 to August 31, 2013



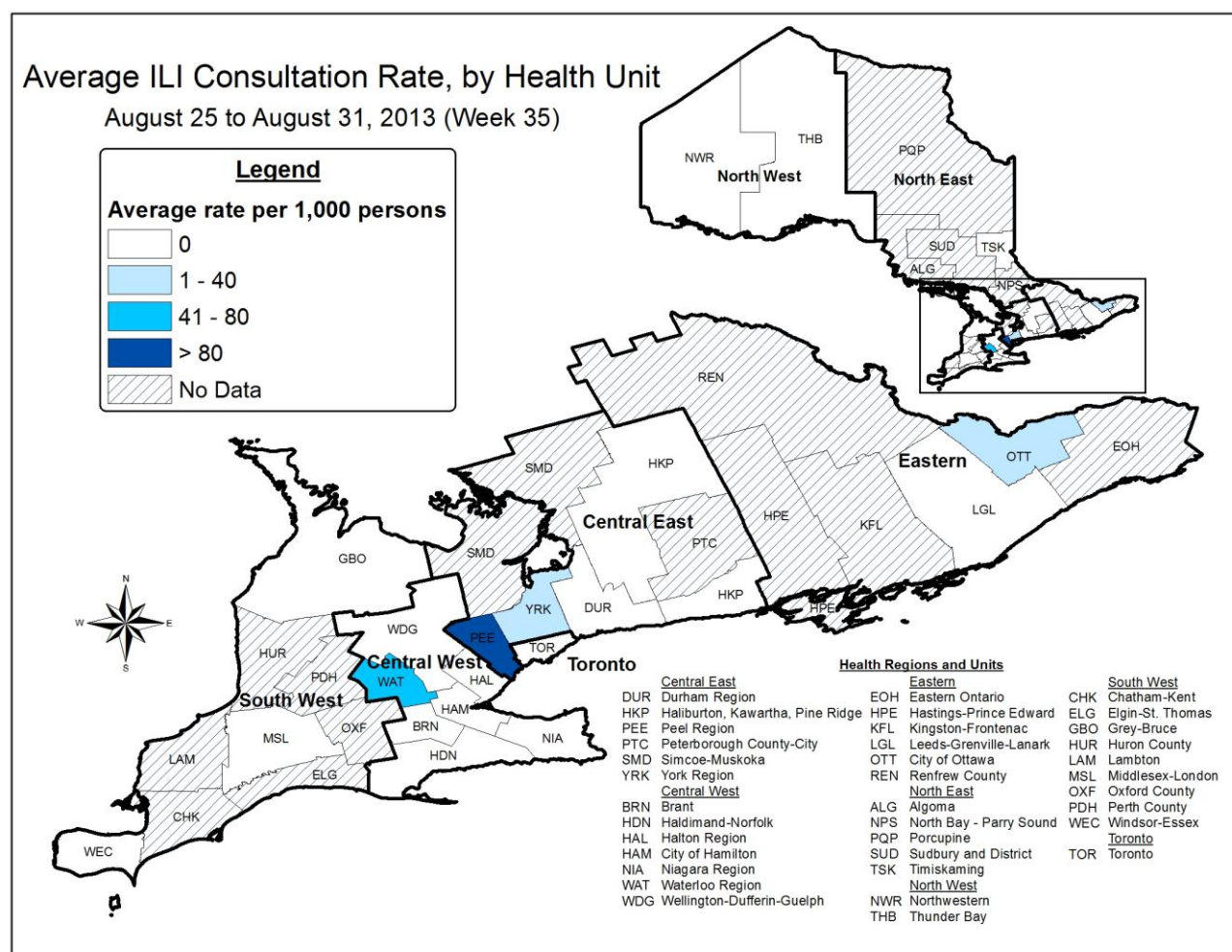
Source: Public Health Agency of Canada

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 35*



Source: Public Health Agency of Canada

Note: Sentinels report ILI and patient data to the Public Health Agency of Canada; 37 sentinels reported in week 35, 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 35*

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	0	0	9	4	0	13
ILI Consultation Rate (per 1,000 patient visits)	0.00	0.00	16.67	14.76	0.00	13.37

Source: Public Health Agency of Canada

Note: Sentinel information is reported to the Public Health Agency of Canada; 37 sentinels reported in week 35.

* 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, weeks 34-35 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	638	27	47	0	104	637	16.4
BRANT COUNTY	750	2	102	5	157	725	21.7
CHATHAM-KENT	284	9	27	2	53	279	19.0
CITY OF HAMILTON	486	9	46	5	95	461	20.9
CITY OF OTTAWA	198	6	23	4	43	187	23.4
CITY OF TORONTO	9,492	141	1,198	163	1,655	9,188	18.3
DURHAM REGIONAL	1,672	45	86	32	181	1,615	11.4
ELGIN-ST. THOMAS	254	3	32	1	57	251	22.8
EASTERN ONTARIO	361	4	52	1	86	354	24.4
GREY BRUCE	738	8	92	1	134	716	19.0
HALTON REGIONAL	1,221	15	72	4	154	1,174	13.5
HALDIMAND-NORFOLK	293	12	21	2	50	278	18.0
HALIBURTON-KAWARTHA-PINE RIDGE DISTRICT	776	17	49	5	133	759	17.6
HASTINGS AND PRINCE EDWARD COUNTIES	688	7	115	2	147	678	21.7
HURON COUNTY	287	4	30	1	60	285	21.1
KINGSTON-FRONTENAC AND LENNOX AND ADDINGTON	1,082	29	144	7	257	1,070	24.2
LAMBTON	453	5	31	2	65	451	14.6
LEEDS-GRENVILLE AND LANARK DISTRICT	423	15	55	2	87	416	21.0
MIDDLESEX-LONDON	647	8	80	7	125	621	20.3

Ontario Respiratory Virus Bulletin, 2012-2013 (September 1, 2012 – August 31, 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	1,201	15	85	9	214	1,133	19.0
NORTH BAY PARRY SOUND DISTRICT	843	7	74	1	116	832	14.1
NORTHWESTERN	523	15	25	3	59	510	11.6
OXFORD COUNTY	279	3	34	1	55	271	20.8
PERTH DISTRICT	369	4	38	3	57	365	16.0
PEEL REGIONAL	4,785	93	322	50	616	4,681	13.3
PORCUPINE	501	5	32	3	63	495	13.0
PETERBOROUGH COUNTY-CITY	481	14	43	4	75	463	16.6
RENFREW COUNTY AND DISTRICT	203	9	18	1	38	201	19.0
SIMCOE MUSKOKA DISTRICT	2,911	23	131	6	417	2,858	14.7
SUDBURY AND DISTRICT	745	2	64	4	109	727	15.1
THUNDER BAY DISTRICT	466	19	54	2	79	440	18.0
TIMISKAMING	126	1	12	2	26	122	21.5
WATERLOO	1,209	21	175	12	258	1,190	21.8
WELLINGTON-DUFFERIN-GUELPH	1,223	23	106	9	225	1,175	19.2
WINDSOR-ESSEX COUNTY	687	69	51	5	113	669	16.9
YORK REGIONAL	2,158	27	166	23	271	2,074	13.3
OUT OF PROVINCE	133	3	5	3	20	129	15.9
TOTAL ONTARIO	39,586	719	3,737	387	6,454	38,480	17.0

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/09/03].

Notes:

Cumulative numbers are from September 3, 2013, 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 August 29, 2013

Influenza strains	Ontario	Canada
Influenza A (H3N2) A/Victoria/361/2011-like	204	662
Influenza A (H1N1)pdm09 A/California/07/09-like	188	250
Influenza B B/Brisbane/60/2008-like*	40	138
Influenza B B/Wisconsin/01/2010-like	219	464

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.

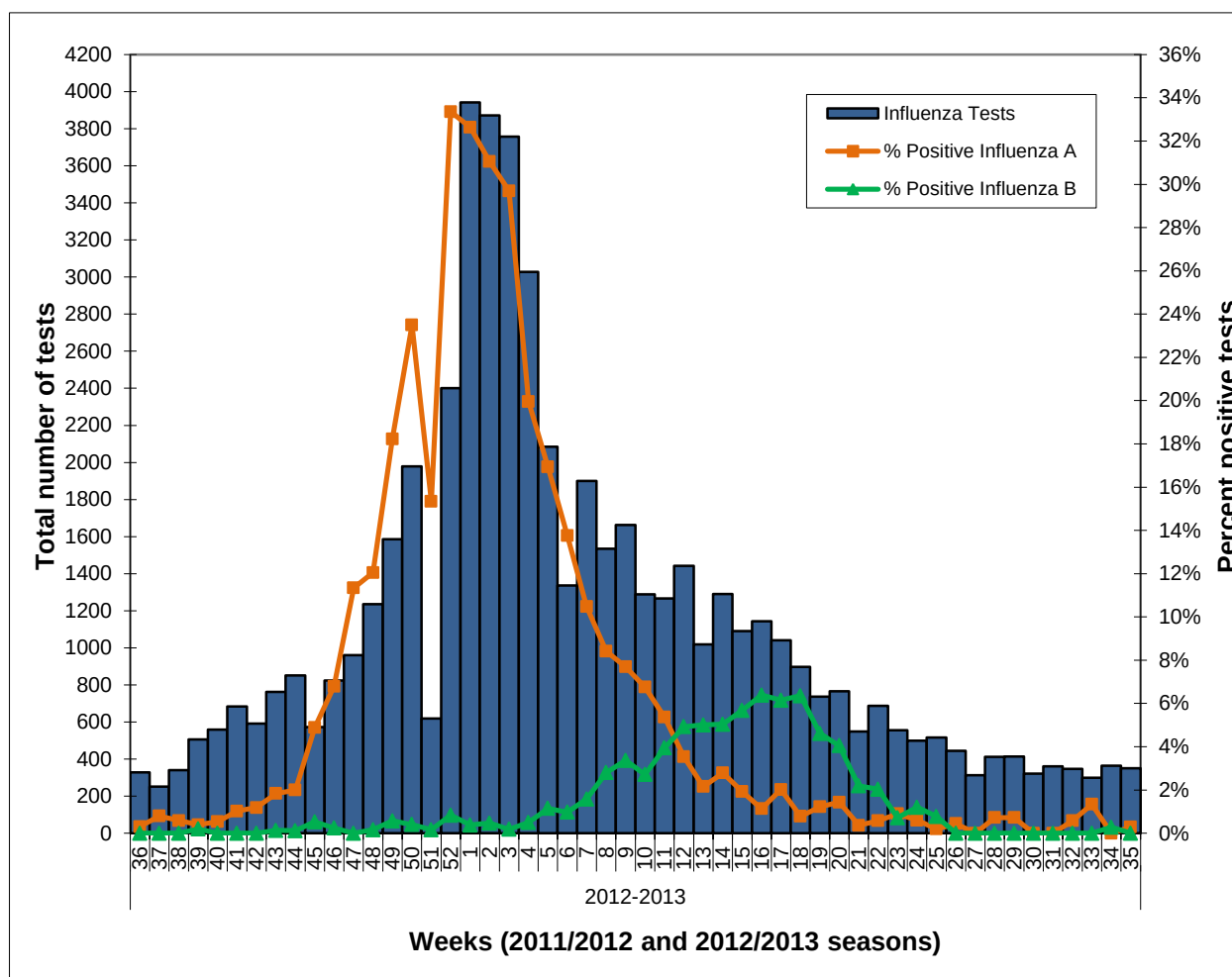
Table III. Amantadine, oseltamivir and zanamivir susceptibility assays completed on influenza isolates at the National Microbiology Laboratory: Ontario and Canada, September 1, 2012 to August 29, 2013

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)	366	1	1048	1	1	202	1	652	1	202	1	652
Influenza A (H1N1)pdm09	211	0	295	0	0	185	1	253	0	182	0	251
Influenza B	NA	NA	NA	NA	2	256	3	598	2	256	3	598

(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, September 2, 2012 to August 31, 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 4:00 p.m. on September 4, 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, weeks 34 and 35

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, weeks 34-35 and cumulative for the 2012-2013 season 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)	26 (1.5)	59	1,691
<i>Chlamydophila pneumoniae</i>	1 (1.7)	3 (0.2)	59	1,691

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/09/03].

Table V. Number and percent positivity (in brackets) of respiratory specimens tested by all methods at PHOL for any *Bordetella* species: Ontario, weeks 34-35 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>	11 (13.1)	128 (5.0)	84	2,546
<i>Bordetella parapertussis</i>	0 (0.0)	3 (0.1)	84	2,546
<i>Bordetella holmesii</i>	0 (0.0)	1 (0.0)	84	2,546

Source: Public Health Ontario Laboratories (PHOL), extracted from the Laboratory Information Management System [2013/09/03].