



Ontario Influenza Bulletin | 2011-2012

SURVEILLANCE WEEK 16 (April 15, 2012 – April 21, 2012)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from April 15, 2012 to April 21, 2012 (week 16). **All data are for week 16** and data extraction and analysis for this issue of the Bulletin occurred on April 25, 2012 unless otherwise specified. In order to enable our readers to better assess influenza activity in Ontario, we have combined various sources of information in the following table. ***Due to current levels of influenza activity in the province, Public Health Ontario will continue to publish the full version of the Ontario Influenza Bulletin on a weekly basis until further notice.***

Assessment of Influenza and Other Respiratory Virus Activity in Ontario

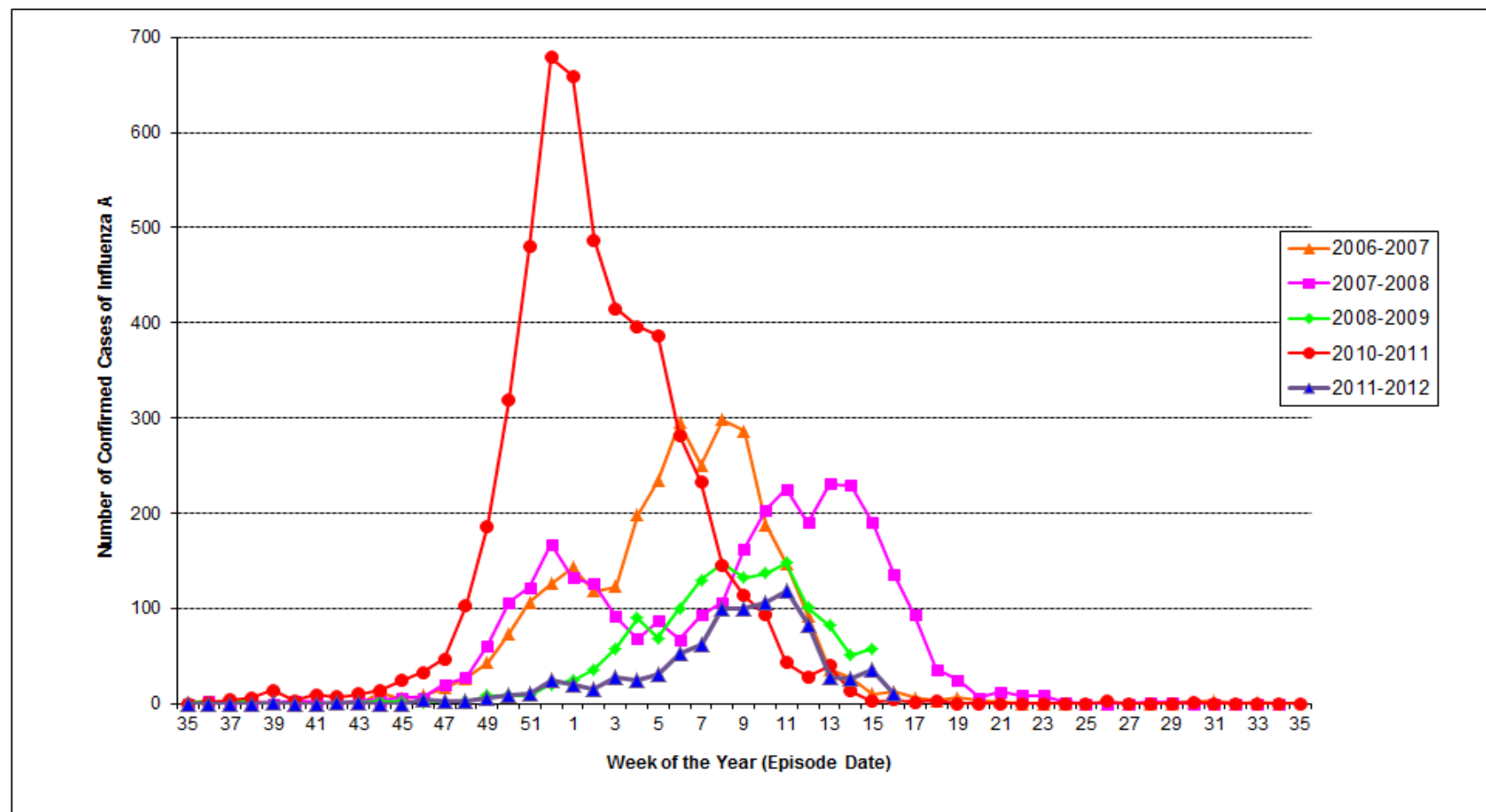
Measure of Activity	Assessment of measure compared to previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory Confirmed Influenza Cases	Similar	One hundred and eighty-five (185) new influenza cases were reported* in week 16, which is lower than the number reported in week 15 (266). However, percent positivity for influenza in Ontario was 16.63% (2.15% for influenza A and 14.48% for influenza B) for week 16, which is slightly higher than week 15 (15.41%), likely explained by increased percent positivity for influenza B this week (Figure 3).
Respiratory virus activity	Influenza B activity is slightly higher	Among all circulating respiratory viruses, influenza B had the highest percent positivity in week 16 at 14.48% (Table 3), which is slightly higher than week 15 at 11.58%.
Institutional Respiratory Infection Outbreaks	Slightly lower	Nine (9) new institutional respiratory outbreaks were reported for week 16, including one influenza A and four influenza B outbreaks. One hundred and two (102) institutional influenza outbreaks have been reported to date this season.
Influenza Activity Levels Reported by Health Units	Similar	For week 16, Central East, Eastern, South West and Toronto regions reported 'localized' level influenza activity, while Central West, North East and North West regions reported 'sporadic' level activity.
Influenza-Like Illness (ILI) Consultation Rate reported by Sentinels	Lower	The provincial ILI consultation rate decreased from 36.45/1,000 patient visits in week 15 to 26.80/1,000 patient visits in week 16. This rate is higher than the average rate for week 16 from previous years.
OVERALL ASSESSMENT FOR VIRUS ACTIVITY	Influenza activity in Ontario was <i>similar</i> compared to the previous week.	Overall, the indicators show that influenza activity was similar during week 16 compared to week 15.
Measure of Severity for Influenza		
Hospitalizations Among Lab Confirmed Cases of Influenza	Similar	There were 103 hospitalizations reported among cases from April 15 to April 21, which is similar to the number (102) reported from April 8 to April 14*.
Deaths Among Lab Confirmed Cases of Influenza	Lower	Five (5) deaths were reported from April 15 to April 21, which is lower than the number (9) reported from April 8 to April 14*.

*This is the number of cases by **reported** date from iPHIS and should be interpreted with caution as there is a lag between the onset of illness, hospital admission or death and when this information is reported to public health.

Summary of current and season to date influenza activity

- Year-to-date overall influenza activity for the 2011-2012 season has been lower than the same period in previous years:
 - A total of 3438 influenza cases have been reported for the 2011-2012 surveillance season to date.
 - The majority of influenza cases reported for the 2011-2012 season to date were influenza B, which accounted for 73.7% (2533/3438) of cases this season. While influenza B is the dominant influenza type, A(H1N1)pdm09 is the dominant influenza A subtype.
 - Compared to the same period in the 2010-2011 season, fewer influenza cases and outbreaks have been reported this season from September 1, 2011 to April 21, 2012. In this season, influenza B activity reached the highest level of activity seen over five seasons. While influenza B activity has generally been in a downward trend since week 12, activity increased slightly in week 16.
 - Children under 5 years old (792 cases) and adults 65 years of age and older (783 cases) account for 45.8% (1575/3438) of influenza cases reported to date. The highest number of cases (593) occurred in the 1 to 4 year old age group, which represents 17.2% of cases.
 - Among influenza cases that have been hospitalized, 24.6% (217/883) were children under 5 years old and 33.4% (295/883) were adults over the age of 65 (Table 2).
 - No institutional influenza outbreaks were reported prior to week 1 of 2012; since then, 102 have been reported, including 23 outbreaks of influenza A, 76 outbreaks of influenza B, and three combined influenza A and B outbreaks.
- The cause(s) of ILI in Ontario from September 1, 2011 to April 21, 2012 changed as the season progressed:
 - Since week 5, influenza B has been the dominant circulating influenza virus. Of the 392 influenza B isolates characterized at the National Microbiology Laboratory, 244 (62.2%) were of a strain (B/Wisconsin/01/2010-like) and lineage that is different from the influenza B component of this season's trivalent influenza vaccine.
 - The percent positivity for coronavirus increased from 6.97% in week 15 to 11% in week 16. Coronavirus had the second highest percent positivity among specimens submitted for testing in week 16; influenza B had the highest percent positivity at 14.48%.

Figure 1: Confirmed cases of influenza A in Ontario by episode date reported from Sep. 1, 2006 to Apr. 21, 2012[†]



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/04/26].

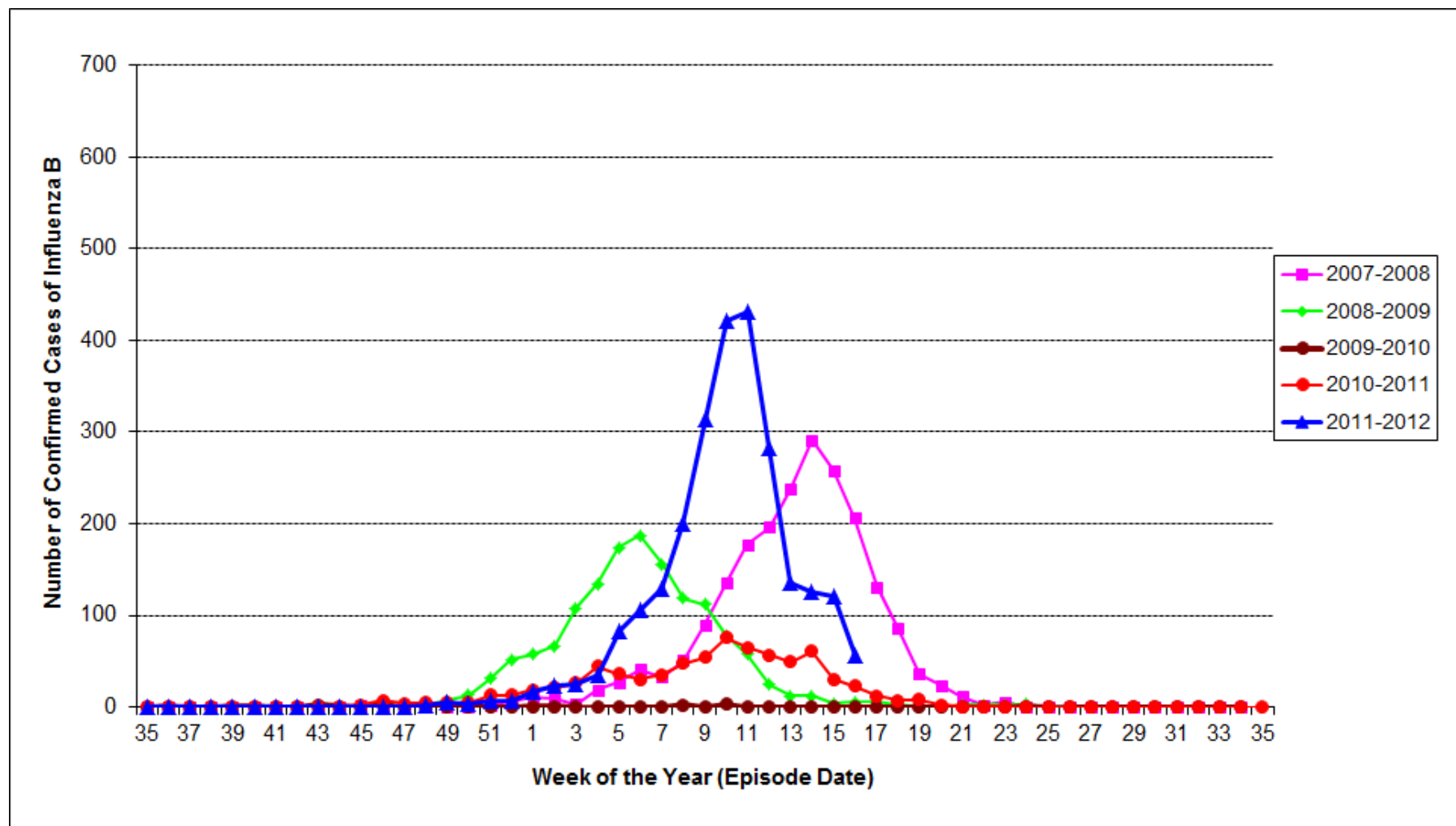
[†] Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date).

Note: Cases after week 14 in the 2008-09 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 2009-10 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.

Note: Week 53 of the 2008-09 season has been removed for continuity in displaying trends.

Note: Interpret tail of 2011-2012 line with caution due to reporting lags.

Figure 2: Confirmed cases of influenza B in Ontario by episode date reported from Sep. 1, 2007 to Apr. 21, 2012[†]



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/04/26].

[†] 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)

Note: Interpret tail of 2011-2012 line with caution due to reporting lags.

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Table 1: Confirmed cases with a reported date during week 16 and cumulative cases (in brackets) of influenza by health unit and health region since September 1, 2011

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 (0)	0 (0)	0 (2)	0 (0)	1 (3)	1 (5)
	Thunder Bay District	0 (0)	0 (0)	0 (0)	0 (2)	0 (0)	0 (2)	0 (4)
	TOTAL NORTH WEST	0 (0)	0 (0)	0 (0)	0 (4)	0 (0)	1 (5)	1 (9)
North East	Algoma	0 (0)	0 (1)	0 (0)	0 (2)	0 (0)	1 (5)	1 (8)
	North Bay Parry Sound District	0 (2)	1 (5)	0 (0)	0 (1)	0 (0)	2 (48)	3 (56)
	Porcupine	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9 (18)	9 (18)
	Sudbury & District	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (30)	0 (31)
	Timiskaming	0 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (2)	0 (4)
	TOTAL NORTH EAST	0 (5)	1 (6)	0 (0)	0 (3)	0 (0)	12 (103)	13 (117)
Eastern	City of Ottawa	0 (5)	2 (41)	0 (0)	0 (2)	0 (0)	8 (83)	10 (131)
	Eastern Ontario	0 (1)	0 (4)	0 (0)	0 (5)	0 (0)	7 (38)	7 (48)
	Hastings & Prince Edward Counties	0 (7)	0 (0)	0 (0)	0 (9)	0 (0)	3 (25)	3 (41)
	Kingston, Frontenac, Lennox & Addington	0 (3)	0 (6)	0 (0)	0 (1)	0 (0)	4 (23)	4 (33)
	Leeds, Grenville And Lanark District	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	0 (7)	0 (8)
	Renfrew County And District	0 (3)	0 (1)	0 (0)	0 (0)	0 (0)	0 (4)	0 (8)
	TOTAL EASTERN	0 (19)	2 (53)	0 (0)	0 (17)	0 (0)	22 (180)	24 (269)
Central East	Durham Region	0 (14)	1 (10)	0 (0)	0 (6)	0 (0)	2 (55)	3 (85)
	Haliburton, Kawartha, Pine Ridge	0 (6)	1 (11)	0 (1)	0 (2)	0 (0)	6 (40)	7 (60)
	Peel Region	2 (73)	0 (40)	0 (3)	0 (16)	0 (1)	15 (380)	17 (513)
	Peterborough County-City	0 (1)	1 (3)	0 (0)	0 (0)	0 (0)	2 (24)	3 (28)
	Simcoe Muskoka District	0 (15)	4 (10)	0 (0)	0 (10)	0 (0)	6 (187)	10 (222)
	York Region	2 (21)	0 (21)	0 (0)	0 (8)	0 (0)	7 (98)	9 (148)
	TOTAL CENTRAL EAST	4 (130)	7 (95)	0 (4)	0 (42)	0 (1)	38 (784)	49 (1056)
Toronto	Toronto	2 (162)	0 (57)	0 (1)	3 (63)	0 (3)	29 (630)	34 (916)
	TOTAL TORONTO	2 (162)	0 (57)	0 (1)	3 (63)	0 (3)	29 (630)	34 (916)
South West	Chatham-Kent	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (8)	2 (8)
	Elgin-St. Thomas	0 (1)	0 (0)	0 (0)	0 (1)	0 (0)	0 (9)	0 (11)
	Grey Bruce	0 (5)	1 (1)	0 (0)	0 (0)	0 (0)	4 (39)	5 (45)
	Huron County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	4 (21)	4 (21)
	Lambton County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (9)	1 (9)
	Middlesex-London	2 (6)	1 (18)	0 (0)	0 (9)	0 (0)	9 (48)	12 (81)
	Oxford County	0 (2)	0 (3)	0 (0)	0 (1)	0 (0)	3 (21)	3 (27)
	Perth District	0 (3)	0 (1)	0 (0)	0 (2)	0 (0)	4 (39)	4 (45)
	Windsor-Essex County	1 (1)	0 (3)	0 (0)	0 (5)	0 (0)	2 (8)	3 (17)
	TOTAL SOUTH WEST	3 (18)	2 (26)	0 (0)	0 (18)	0 (0)	29 (202)	34 (264)
Central West	Brant County	0 (0)	0 (4)	0 (0)	1 (1)	0 (0)	0 (18)	1 (23)
	City Of Hamilton	0 (19)	1 (39)	0 (0)	1 (3)	0 (0)	7 (191)	9 (252)
	Haldimand-Norfolk	0 (0)	1 (2)	0 (0)	0 (1)	0 (0)	2 (19)	3 (22)
	Halton Region	0 (17)	0 (16)	0 (0)	0 (3)	0 (0)	2 (128)	2 (164)
	Niagara Region	0 (8)	0 (2)	0 (0)	0 (4)	0 (0)	3 (109)	3 (123)
	Waterloo Region	0 (20)	0 (11)	0 (0)	1 (7)	0 (0)	3 (107)	4 (145)
	Wellington-Dufferin-Guelph	1 (8)	0 (4)	0 (0)	0 (9)	0 (0)	7 (57)	8 (78)
	TOTAL CENTRAL WEST	1 (72)	2 (78)	0 (0)	3 (28)	0 (0)	24 (629)	30 (807)
	TOTAL ONTARIO	10 (406)	14 (315)	0 (5)	6 (175)	0 (4)	155 (2533)	185 (3438)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/04/26].

*Includes indeterminate, untypeable and other subtypes

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Table 2. Number of hospitalizations and deaths among influenza cases during week 16 and cumulative (in brackets) for the season by age group since September 1, 2011

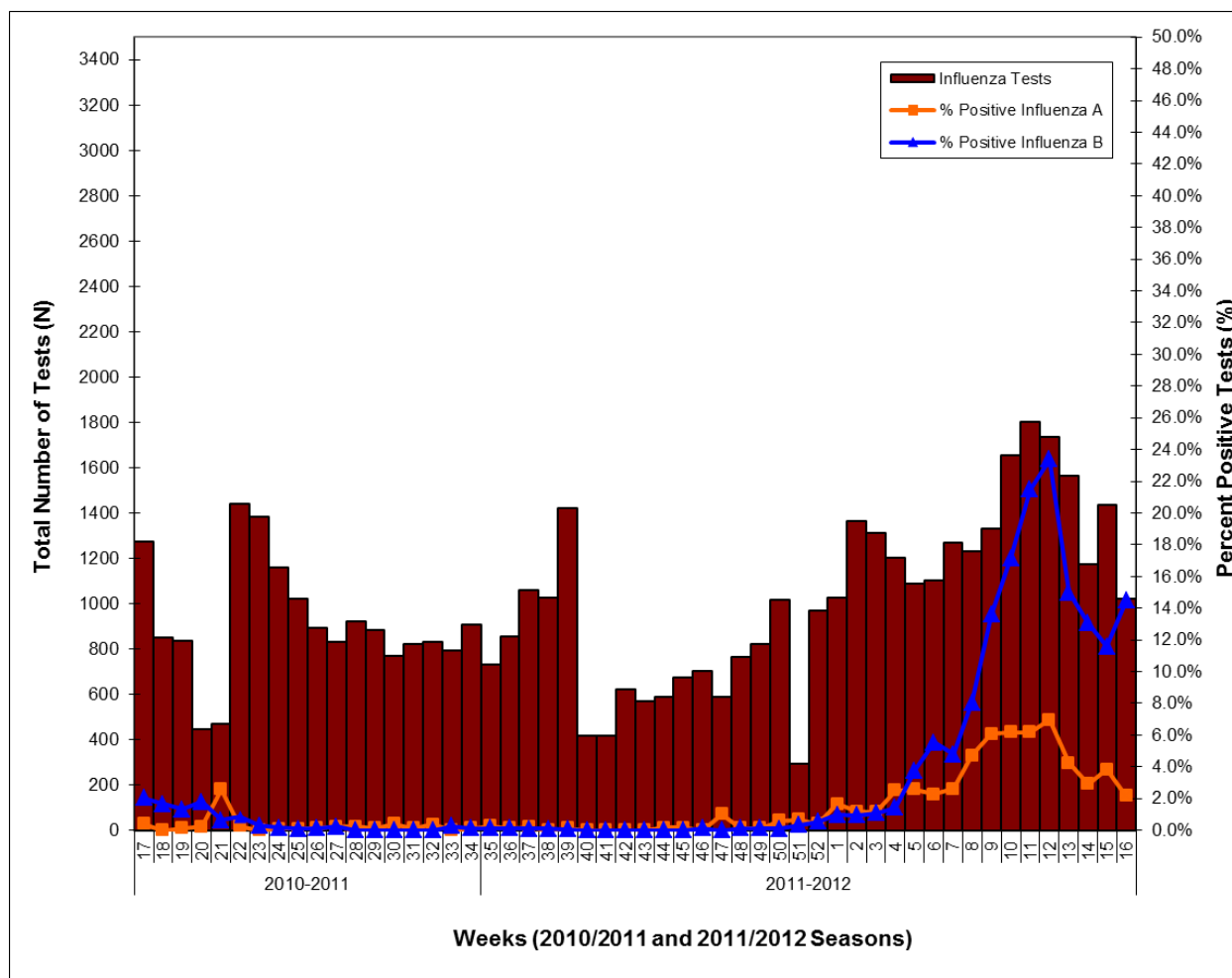
Age Group	Number of Hospitalizations	Cumulative Rate per 100,000	Number of Deaths	Cumulative Rate per 100,000
<1	3 (69)	48.73	0 (1)	0.71
1-4	9 (148)	25.96	0 (1)	0.18
5-14	11 (127)	8.50	0 (1)	0.07
15-24	1 (16)	0.89	0 (0)	0.00
25-44	5 (79)	2.15	0 (1)	0.03
45-64	21 (148)	4.01	0 (9)	0.24
65+	53 (295)	16.09	5 (45)	2.45
Total	103 (883*)	6.68	5 (58)	0.44

Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/04/25]. Population data obtained from IntelliHEALTH Ontario, retrieved by Public Health Ontario [2012/01/13].

* The total number of hospitalizations and cumulative rates include one hospitalized case of unknown age.

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Figure 3: Total number of influenza tests performed and percent of positive tests in Ontario, by report week*



Source: Public Health Agency of Canada. These data have been obtained from the Respiratory Virus Detection tables of the Public Health Agency of Canada from 16 labs in Ontario and do not include data from late reports to PHAC for the current season: week 16, 2012. Please note that the last version received from PHAC as of 12:00PM on April 25, 2012 was used.

* Total numbers reported include late reports from previous seasons; therefore totals may not be equal to the sum of the weekly numbers.

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

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Table 3. Number of respiratory specimens tested by all methods for influenza and other respiratory viruses and percent positivity, week 16

Detected viruses	Number and percent positive specimens		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza A (all)	22 (2.15)	867 (2.61)	1022	33267
Influenza B	148 (14.48)	2346 (7.05)	1022	33267
Parainfluenza virus	4 (0.56)	677 (2.47)	719	27408
Adenovirus	8 (1.11)	425 (1.55)	719	27408
Respiratory syncytial virus	16 (2.18)	3370 (12.1)	733	27845
Enterovirus/rhinovirus	32 (4.45)	1006 (4.18)	719	24043
Human metapneumovirus	14 (6.7)	367 (3.02)	209	12149
Coronavirus	23 (11)	442 (5.03)	209	8790

Source: CIRID, Public Health Agency of Canada. These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada from 16 labs in Ontario and do not include data from late reports to PHAC for the current season: week 16, 2012. Please note that the last version received from PHAC as of 12:00 PM on April 25, 2012 was used.

Note: Total numbers reported include late reports from previous seasons; therefore totals may not be equal to the sum of the weekly numbers.

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

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Table 4: Institutional respiratory infection outbreaks in Ontario: new outbreaks* in week 16 and total outbreaks for the season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A (All subtypes)	1	11.1
Influenza B	4	44.4
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Combined Outbreaks [†]	0	0.0
Other organisms ^α	1	11.1
Entero/rhinovirus	0	0.0
No organism identified/reported	3	33.3
TOTAL	9	100.0
Total Respiratory Infection Outbreaks of the Season to date**		
Influenza A (All subtypes)	23	4.2
Influenza B	76	13.9
Influenza A and B	3	0.6
Parainfluenza (All types)	29	5.3
RSV	56	10.3
Combined Outbreaks [†]	51	9.4
Other organisms ^α	84	15.4
Entero/rhinovirus	107	19.6
No organism identified/reported	116	21.3
TOTAL	545	100.0
Types of Institutions – All Outbreaks **		
Long-Term Care Homes	350	64.2
Hospitals	29	5.3
Retirement Homes	68	12.5
Other	2	0.4
Not Reported	96	17.6
TOTAL	545	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/04/25]

* New outbreaks are those in which the date of onset of illness in the first case occurred and was recorded through iPHIS in the current surveillance period; i.e. April 15, 2012 – April 21, 2012

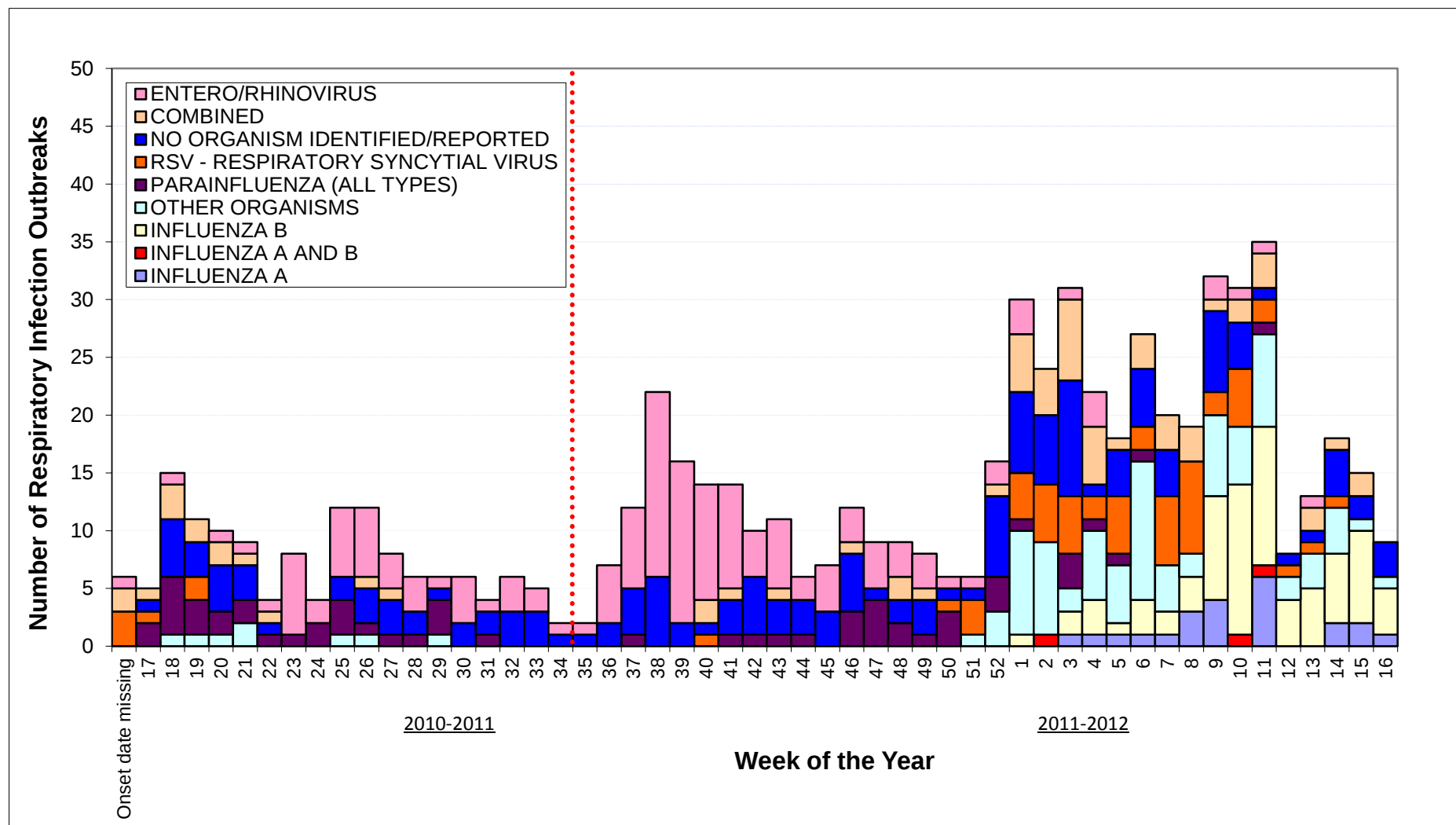
** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to week 16, 2012.

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

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

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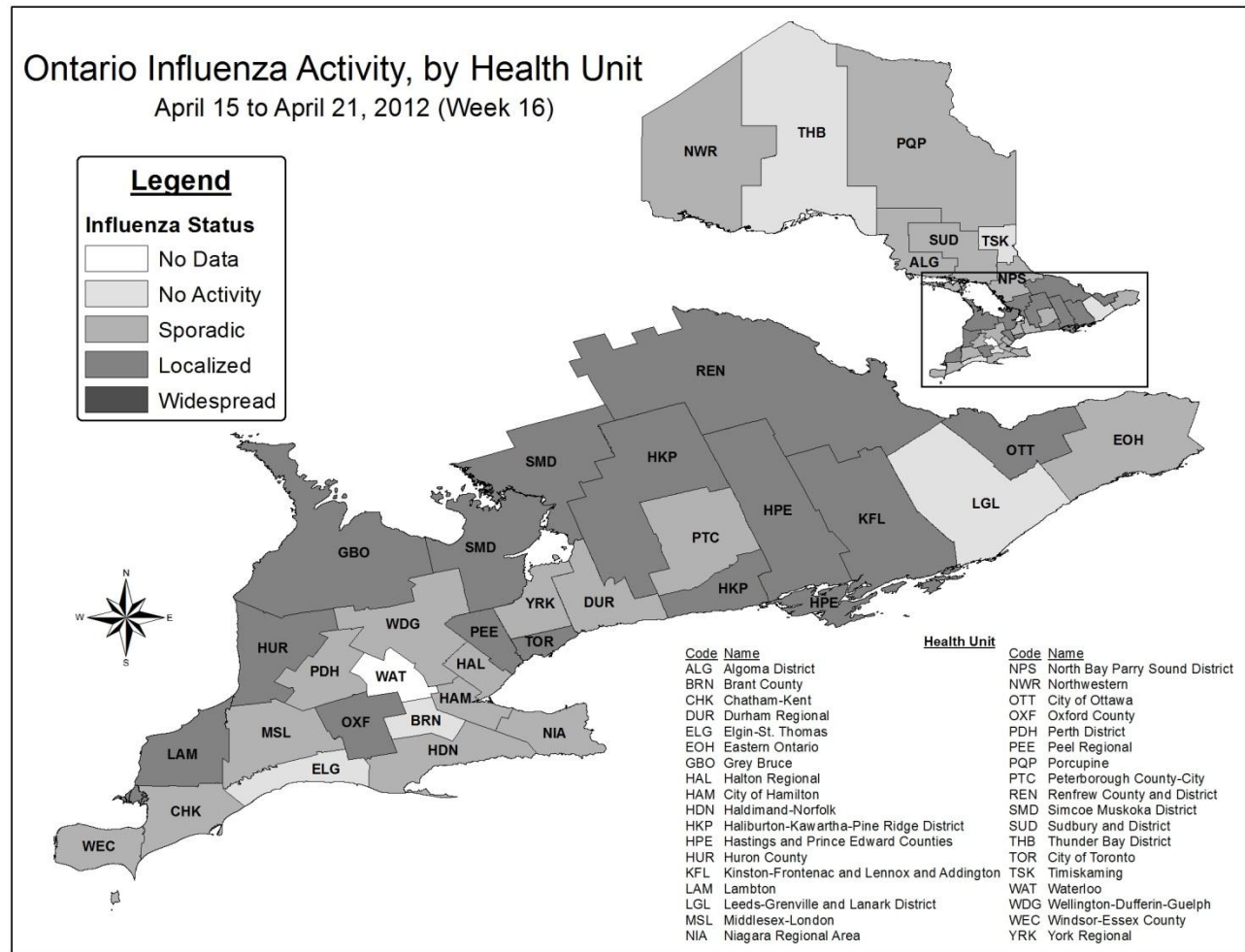
Figure 4: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including week 16 of the 2011-2012 season by causative organism



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/04/25]

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Figure 5: Influenza activity* levels in Ontario by health unit for week 16, 2012

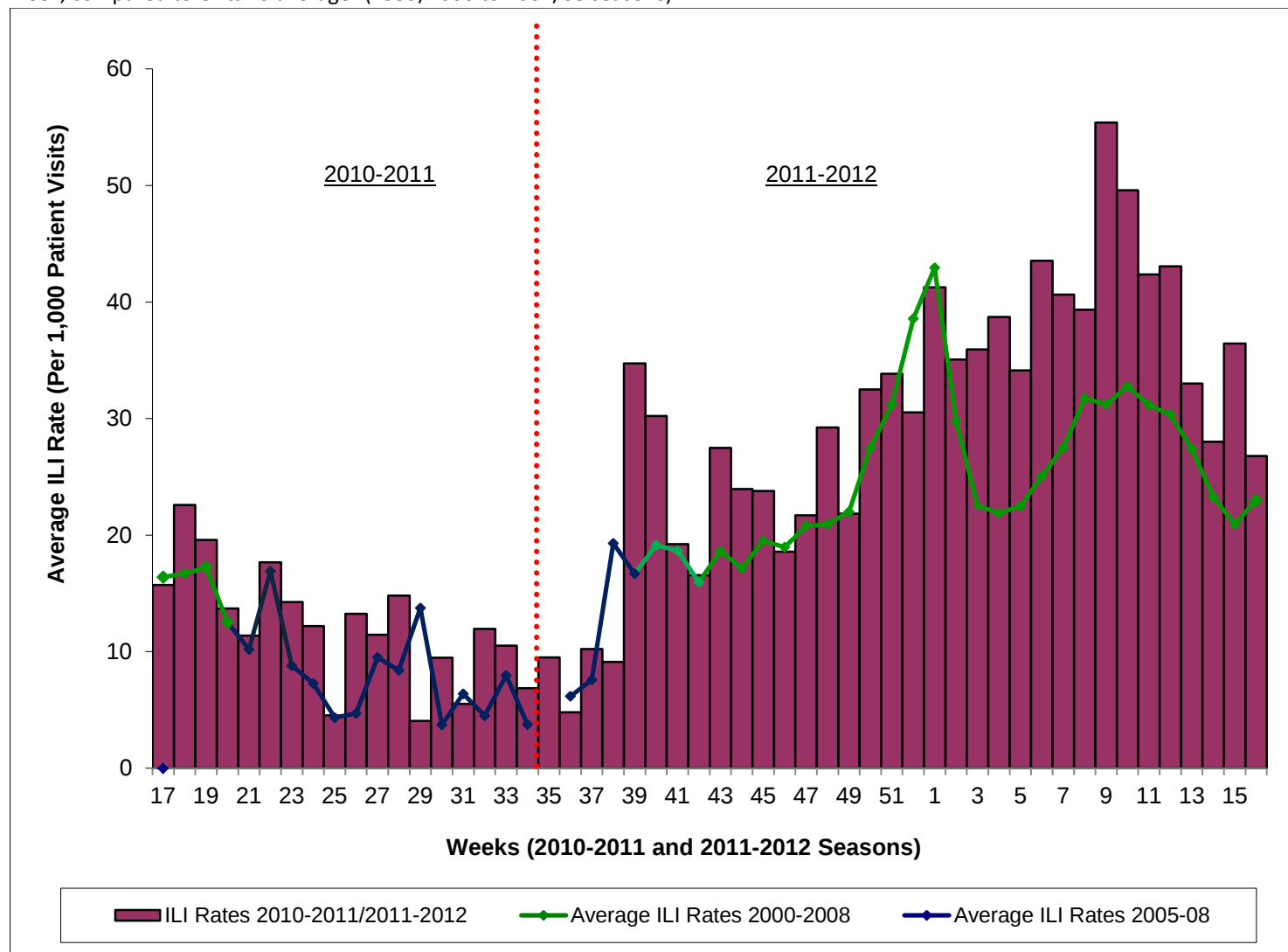


Source: PHO [Provincial Influenza Activity Report (Appendix C) Database]

* Influenza activity levels are assigned by local public health units and reported to PHO by the Tuesday following the end of the surveillance week at 4 pm. 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 2011-2012 season](#).

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Figure 6: Average ILI consultation rate (per 1,000 patient visits) reported by sentinels* in Ontario up to week 16 of the 2011-2012 surveillance season, by report week, compared to Ontario average[†] (1999/2000 to 2007/08 seasons)



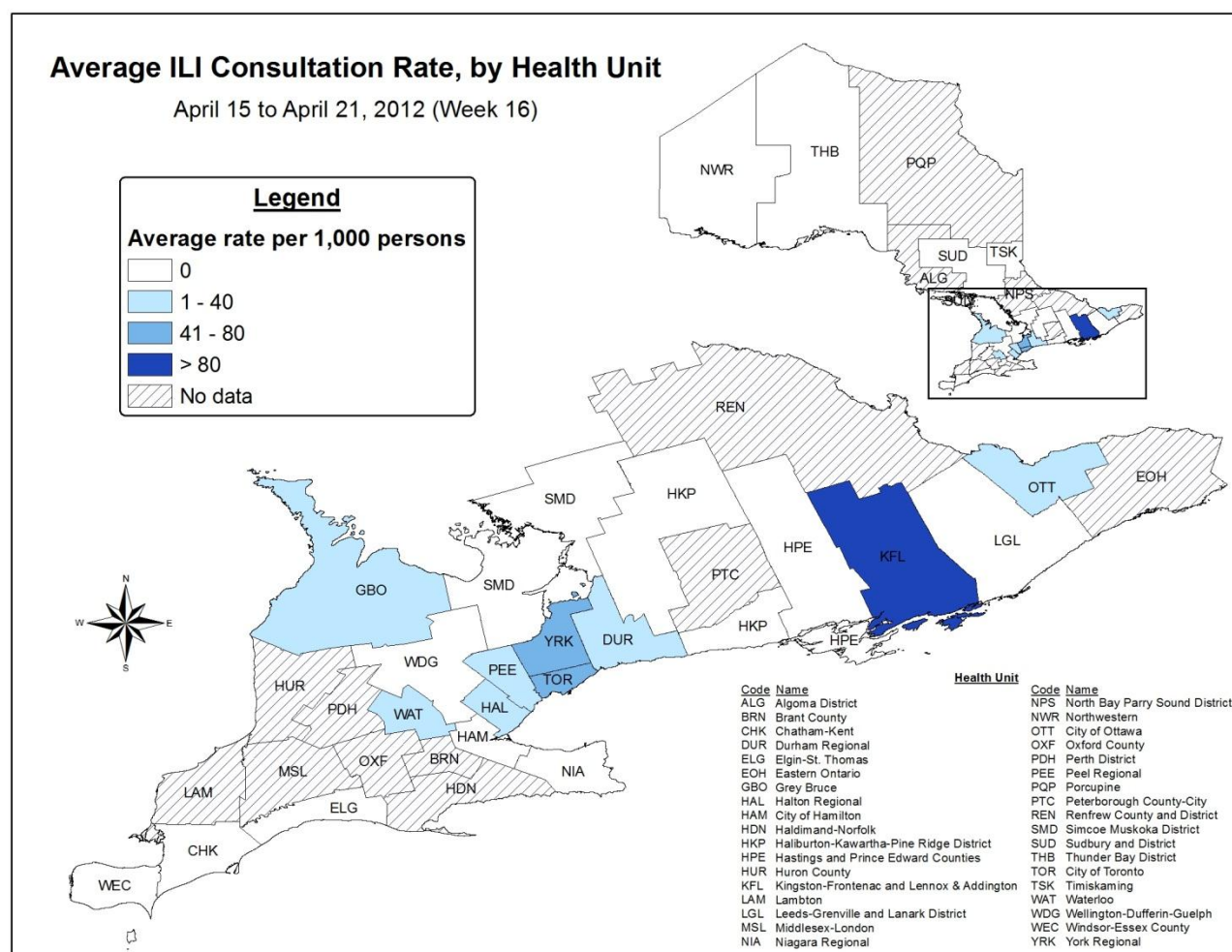
Source: Public Health Agency of Canada

* Sentinel information is reported to Public Health Agency of Canada, 66 sentinels reported in week 16.

[†] No data were available for mean rate calculations for previous years for weeks 21 to 39 (1999-2000 through 2004-2005 seasons). During weeks 20-39, 2002-2003/2004-2005 seasons, ILI was reported once every two weeks, on even weeks only.

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Figure 7: Average ILI consultation rate (per 1,000 patient visits) by health unit as reported by sentinels* in Ontario, for week 16



Source: Public Health Agency of Canada

* Sentinels report ILI and patient data to the Public Health Agency of Canada; 66 sentinels reported in week 16, of which 64 were matched to a health unit and represented in the above map.

Note: The small numbers of sentinels reporting at the local level may result in unstable ILI rates. Please interpret these data accordingly.

Table 5: Average influenza-like illness consultation rate (per 1,000 patient visits) by age group as reported by sentinels* in Ontario, for week 16

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	7	6	29	8	0	50
ILI Consultation Rate (per 1,000 patient visits)	59.32	31.09	26.88	16.81	0.00	26.80

Source: Public Health Agency of Canada

* Sentinel information is reported to the Public Health Agency of Canada; 66 sentinels reported in week 16.

APPENDIX - I

Table 1: NML strain characterization, influenza isolates in Ontario and Canada, September 1, 2011 to April 26, 2012

	Ontario	Canada
Influenza A (H3N2) A/Perth/16/2009-like*	52	189
Influenza A(H1N1)pdm09 A/California/07/09-like*	122	178
Influenza B B/Brisbane/60/2008-like*	148	306
Influenza B B/Wisconsin/01/2010-like†	244	296

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

Please note that the last version received from PHAC as of 12:00PM on April 26, 2012 was used.

* These strains are components of the seasonal trivalent vaccine for 2011-2012, which contains the same three components as the 2010-2011 vaccine.

† The World Health Organization has recommended the inclusion of this strain in the vaccine for the 2012-2013 influenza season for the Northern Hemisphere.

Table 2: Amantadine, Oseltamivir and Zanamivir susceptibility assays completed on Canadian influenza isolates by NML, September 1, 2011 to April 26, 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)	78	1	308	1	0	48	0	182	0	48	0	183
Influenza A(H1N1)pdm09	160	0	249	0	0	132	0	190	0	132	0	190
Influenza B	NA	NA	NA	NA	0	373	0	565	0	373	0	565

(R-Resistant, S- Susceptible, NA-Not applicable)

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

Please note that the last version received from PHAC as of 12:00PM on April 26, 2012 was used.