



Ontario Influenza Bulletin | 2011-2012

SURVEILLANCE WEEK 12 (March 18, 2012 – March 24, 2012)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from March 18, 2012 to March 24, 2012 (week 12). **All data are for week 12** and data extraction and analysis for this issue of the Bulletin occurred on March 28, 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.

Assessment of Influenza and Other Respiratory Virus Activity in Ontario

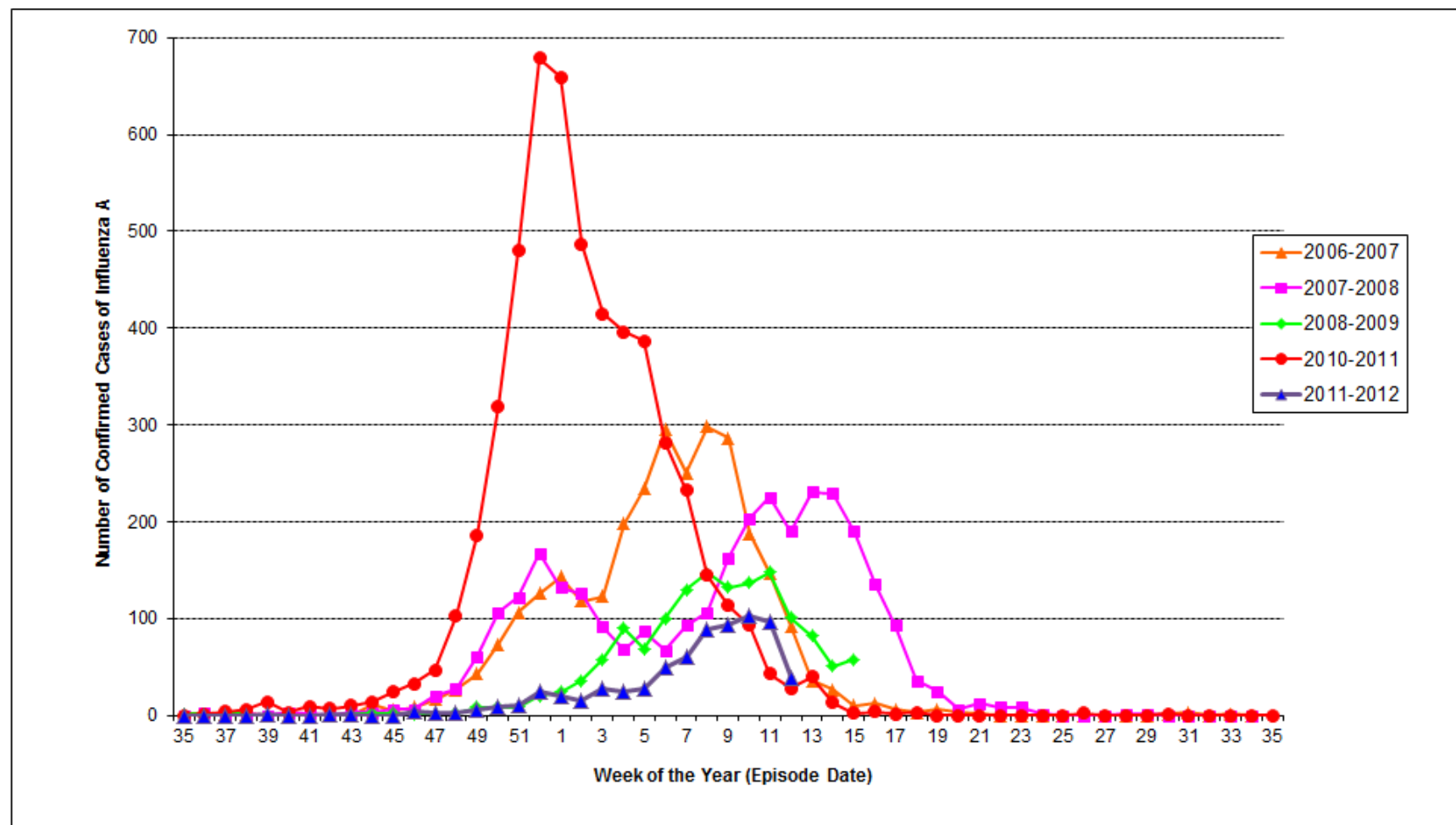
Measure of Activity	Assessment of measure compared to previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory Confirmed Influenza Cases	Higher	Five hundred and sixty-two (562) new influenza cases were reported* in week 12, which is higher than the number reported in week 11 (511). The percent positivity of laboratory tests for influenza in Ontario was 30.34% (6.97% for influenza A and 23.37% for influenza B) for week 12, which is higher than week 11 (27.64%) (Figure 3).
Respiratory virus activity	Influenza B activity is higher	Among all circulating respiratory viruses, influenza B had the highest percent positivity in week 12 at 23.37% (Table 3), which is higher than week 11 (21.48%).
Institutional Respiratory Infection Outbreaks	Lower	Five (5) new institutional respiratory outbreaks were reported for week 12, including three influenza B outbreaks. Sixty-nine (69) institutional influenza outbreaks have been reported to date this season.
Influenza Activity Levels Reported by Health Units	Similar	For week 12, Central East, Central West, Eastern, North East, South West and Toronto regions reported 'localized' level influenza activity, while North West region reported 'sporadic' level influenza activity.
Influenza-Like Illness (ILI) Consultation Rate reported by Sentinels	Similar	The provincial ILI consultation rate increased from 42.37/1,000 patient visits in week 11 to 43.06/1,000 patient visits in week 12. This rate is higher than the average rate for week 11 from previous years.
OVERALL ASSESSMENT FOR VIRUS ACTIVITY	Influenza activity in Ontario was <i>higher</i> compared to the previous week.	Overall, the indicators show that influenza activity was <i>higher</i> during week 12 compared to week 11.
Measure of Severity for Influenza		
Hospitalizations Among Lab Confirmed Cases of Influenza	Higher	There were 94 hospitalizations reported among cases from March 18 to March 24, which is higher than the number (76) reported from March 11 to March 17*.
Deaths Among Lab Confirmed Cases of Influenza	Similar	Eight (8) deaths were reported from March 18 to March 24, which is higher than the number (6) reported from March 11 to March 17*.

*This is the number of cases by **reported** date from iPHIS and needs to 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 2518 influenza cases have been reported for the 2011-2012 surveillance season to date, of which 562 were reported during week 12.
 - The majority of influenza cases reported for the 2011-2012 season to date were influenza B, which accounts for 71.7% (1806/2518) of cases this season. While influenza B is the dominant influenza type, A(H1N1)pdm09 has been 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 March 24, 2012. While influenza A activity is the lowest it has been over five seasons, influenza B activity is the highest it has been over five seasons.
 - Children under 5 years old (616 cases) and adults 65 years of age and older (538 cases) account for 45.8% (1154/2518) of influenza cases reported to date. The highest number of cases (460) has occurred in the 1 to 4 year old age group, which represents 18.3% of cases.
 - Among influenza cases that have been hospitalized, 30.1% (156/519) were children under 5 years old and 25.2% (131/519) were adults over the age of 65 (Table 2).
 - No institutional influenza outbreaks were reported prior to week 1; since then, 69 have been reported: 18 influenza A, 48 influenza B, and three combined A and B outbreaks.
 - For the 2011-2012 season to date, 52 cases of influenza B with myositis (muscular inflammation causing severe pain in the legs) have been reported. Forty-eight cases occurred between January 31, 2012 and March 17, 2012. Cases have been observed in 12 health units: Brant County (1), Chatham-Kent (1), Grey-Bruce (2), Eastern Ontario (2), Hastings & Prince Edward Counties (3), Halton Region (6), Niagara Region (1), Peel Region (26), Simcoe-Muskoka (4), Toronto (3), Wellington-Dufferin-Guelph (1) and York Region (2).
 - Of the 52 influenza B cases with myositis, 34 were reported as having been hospitalized and no deaths among these cases were reported. Two cases reported receiving the current season's influenza vaccine.
- The cause(s) of ILI in Ontario from September 1, 2011 to March 24, 2012 changed as the season progressed:
 - Since week 5, influenza B has been the dominant circulating influenza virus. Of the 257 influenza B isolates characterized at the National Microbiology Laboratory, 144 (56.0%) are a different strain (B/Wisconsin/01/2010-like) and lineage from this season's trivalent influenza vaccine.
 - Higher than expected ILI consultation rates for week 12 were driven by ILI in individuals less than 20 years of age.
 - Human metapneumovirus is now the dominant non-influenza respiratory virus.

Figure 1: Confirmed cases of influenza A in Ontario by episode date reported from Sep. 1, 2006 to Mar. 24, 2012[†]



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/29].

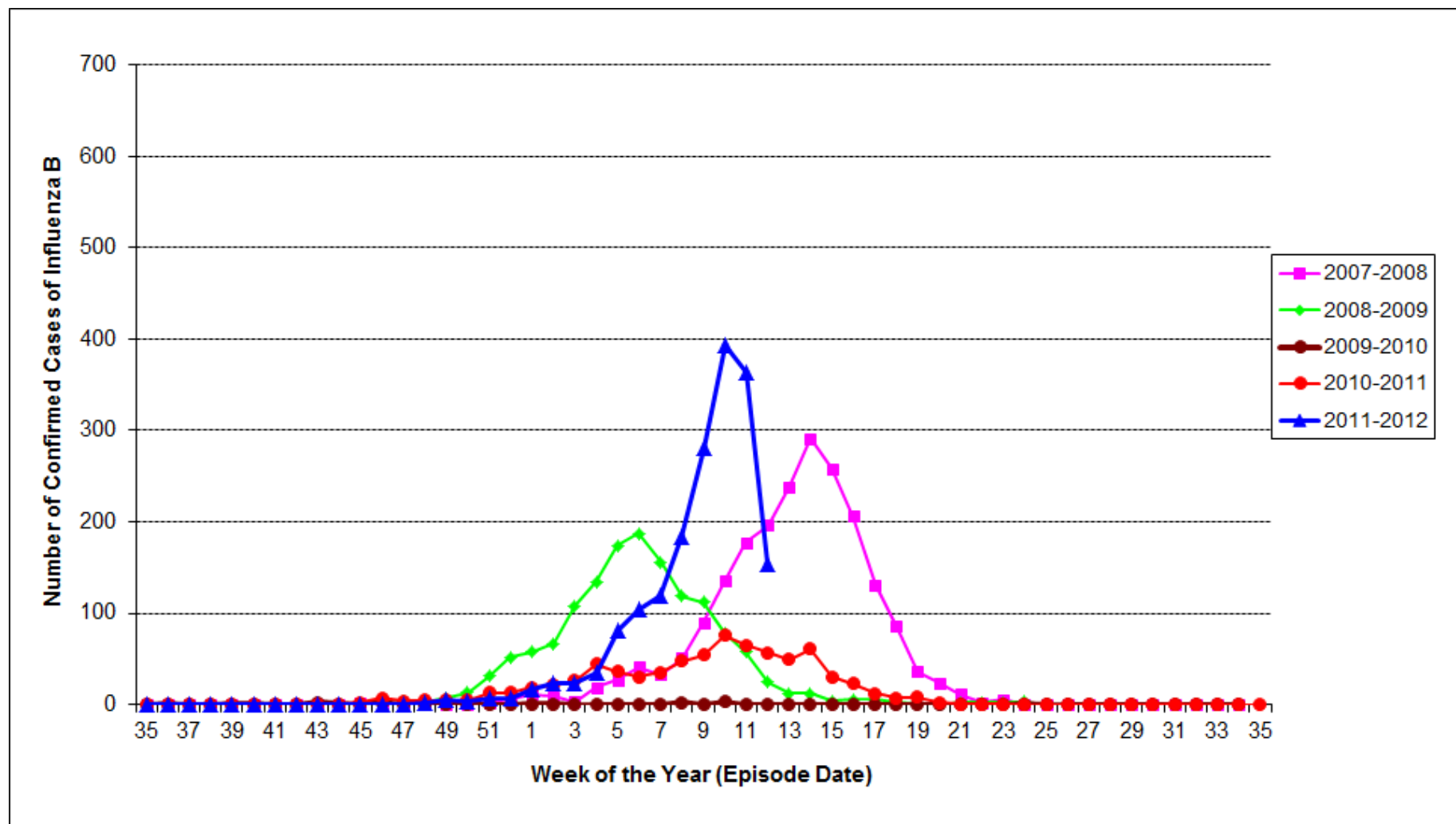
[†] Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date).

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 Mar. 24, 2012[†]



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/29].

[†] 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 12 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)	2 (2)	0 (0)	1 (1)	3 (3)
	Thunder Bay District	0 (0)	0 (0)	0 (0)	0 (2)	0 (0)	0 (1)	0 (3)
	TOTAL NORTH WEST	0 (0)	0 (0)	0 (0)	2 (4)	0 (0)	1 (2)	3 (6)
North East	Algoma	0 (0)	1 (1)	0 (0)	0 (2)	0 (0)	0 (2)	1 (5)
	North Bay Parry Sound District	0 (2)	1 (5)	0 (0)	0 (1)	0 (0)	8 (29)	9 (37)
	Porcupine	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (6)	2 (6)
	Sudbury & District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	6 (19)	6 (19)
	Timiskaming	0 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)	0 (3)
	TOTAL NORTH EAST	0 (4)	2 (6)	0 (0)	0 (3)	0 (0)	16 (57)	18 (70)
Eastern	City of Ottawa	2 (5)	4 (30)	0 (0)	1 (2)	0 (0)	20 (56)	27 (93)
	Eastern Ontario	0 (1)	0 (3)	0 (0)	0 (4)	0 (0)	5 (19)	5 (27)
	Hastings & Prince Edward Counties	2 (4)	0 (0)	0 (0)	0 (8)	0 (0)	4 (17)	6 (29)
	Kingston, Frontenac, Lennox & Addington	0 (3)	0 (2)	0 (0)	0 (0)	0 (0)	2 (8)	2 (13)
	Leeds, Grenville And Lanark District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (5)	1 (5)
	Renfrew County And District	0 (3)	0 (0)	0 (0)	0 (0)	0 (0)	0 (2)	0 (5)
	TOTAL EASTERN	4 (16)	4 (35)	0 (0)	1 (14)	0 (0)	32 (107)	41 (172)
Central East	Durham Region	2 (12)	2 (6)	0 (0)	1 (6)	0 (0)	13 (32)	18 (56)
	Haliburton, Kawartha, Pine Ridge	1 (3)	3 (7)	0 (1)	0 (2)	0 (0)	8 (22)	12 (35)
	Peel Region	5 (60)	6 (30)	0 (4)	1 (13)	0 (1)	68 (288)	80 (396)
	Peterborough County-City	0 (1)	1 (2)	0 (0)	0 (0)	0 (0)	2 (22)	3 (25)
	Simcoe Muskoka District	4 (10)	2 (8)	0 (0)	2 (10)	0 (0)	28 (154)	36 (182)
	York Region	3 (12)	5 (16)	0 (0)	1 (7)	0 (0)	21 (65)	30 (100)
	TOTAL CENTRAL EAST	15 (98)	19 (69)	0 (5)	5 (38)	0 (1)	140 (583)	179 (794)
Toronto	Toronto	14 (144)	6 (50)	0 (0)	11 (47)	0 (3)	115 (474)	146 (718)
	TOTAL TORONTO	14 (144)	6 (50)	0 (0)	11 (47)	0 (3)	115 (474)	146 (718)
South West	Chatham-Kent	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (4)	2 (4)
	Elgin-St. Thomas	0 (1)	0 (0)	0 (0)	0 (1)	0 (0)	3 (3)	3 (5)
	Grey Bruce	1 (5)	0 (0)	0 (0)	0 (0)	0 (0)	10 (17)	11 (22)
	Huron County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (7)	3 (7)
	Lambton County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (8)	2 (8)
	Middlesex-London	2 (3)	1 (10)	0 (0)	0 (9)	0 (0)	7 (25)	10 (47)
	Oxford County	1 (1)	0 (3)	0 (0)	0 (0)	0 (0)	2 (14)	3 (18)
	Perth District	0 (2)	0 (1)	0 (0)	0 (2)	0 (0)	7 (29)	7 (34)
	Windsor-Essex County	0 (0)	4 (4)	0 (0)	1 (3)	0 (0)	1 (2)	6 (9)
	TOTAL SOUTH WEST	4 (12)	5 (18)	0 (0)	1 (15)	0 (0)	37 (109)	47 (154)
Central West	Brant County	0 (0)	0 (3)	0 (0)	0 (0)	0 (0)	6 (14)	6 (17)
	City Of Hamilton	3 (13)	4 (31)	0 (0)	0 (1)	0 (0)	26 (154)	33 (199)
	Haldimand-Norfolk	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)	1 (13)	2 (15)
	Halton Region	4 (14)	4 (15)	0 (0)	0 (2)	0 (0)	9 (101)	17 (132)
	Niagara Region	1 (5)	1 (2)	1 (1)	0 (2)	0 (0)	31 (89)	34 (99)
	Waterloo Region	4 (13)	0 (10)	0 (0)	1 (3)	0 (0)	16 (73)	21 (99)
	Wellington-Dufferin-Guelph	1 (2)	1 (2)	0 (0)	0 (9)	0 (0)	13 (30)	15 (43)
	TOTAL CENTRAL WEST	13 (47)	11 (65)	1 (1)	1 (17)	0 (0)	102 (474)	128 (604)
	TOTAL ONTARIO	50 (321)	47 (243)	1 (6)	21 (138)	0 (4)	443 (1806)	562 (2518)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/29].

*Includes indeterminate, untypeable and other subtypes

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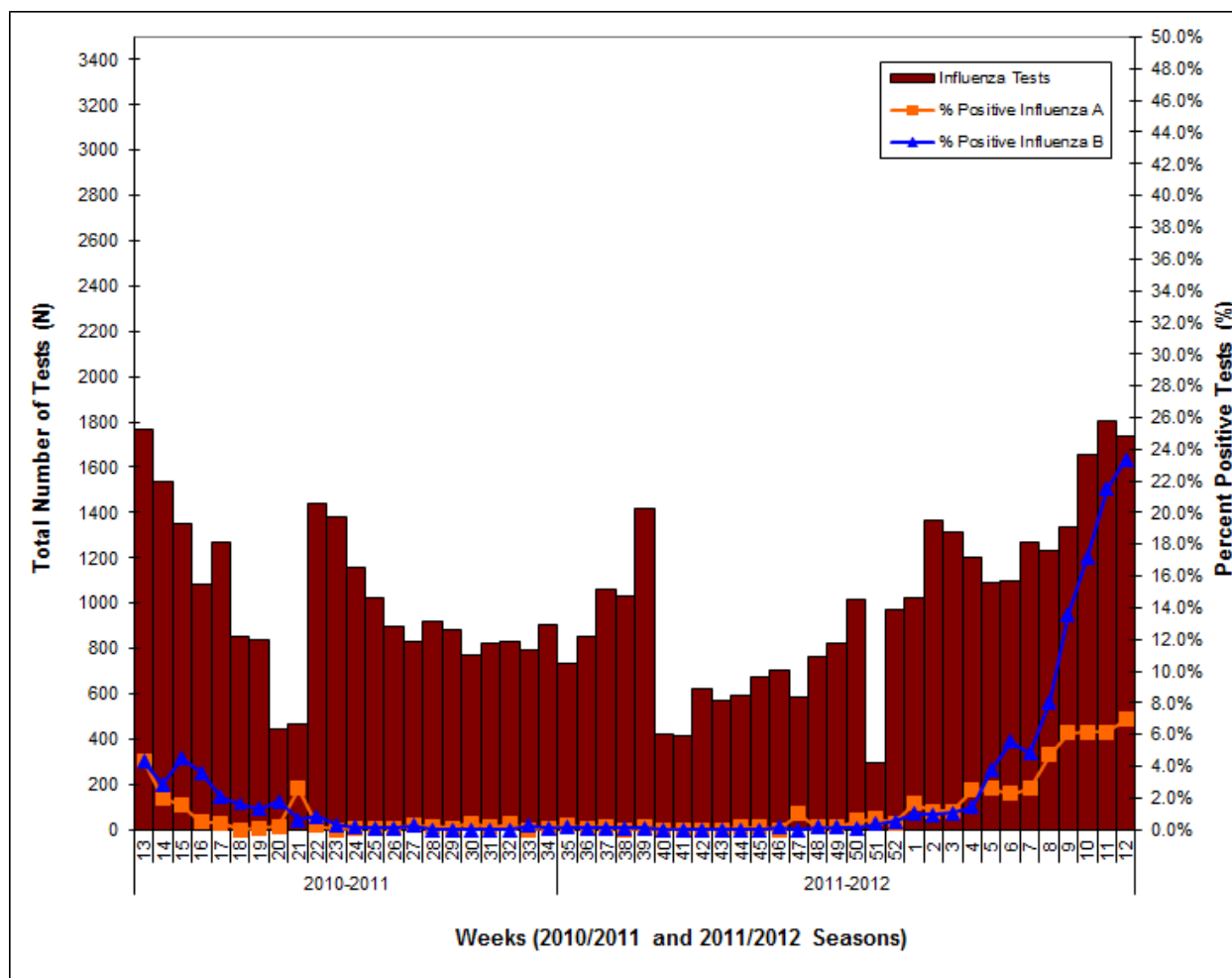
Table 2. Number of hospitalizations and deaths among influenza cases during week 12 and cumulative (in brackets) for the season by age group since September 1, 2011

Age Group	Number of Hospitalizations	Cumulative Rate per 100,000	Number of Deaths	Cumulative Rate per 100,000
<1	4 (49)	34.61	0 (1)	0.71
1-4	13 (107)	18.77	0 (1)	0.18
5-14	15 (87)	5.82	1 (1)	0.07
15-24	3 (9)	0.50	0 (0)	0.00
25-44	9 (54)	1.47	0 (0)	0.00
45-64	24 (82)	2.22	1 (4)	0.11
65+	26 (131)	7.14	6 (21)	1.15
Total	94 (519)	3.93	8 (28)	0.21

Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/29]. Population data obtained from IntelliHEALTH Ontario, retrieved by Public Health Ontario [2012/01/13].

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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 12, 2012. Please note that the last version received from PHAC as of 11:00AM on March 28, 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 12

Detected viruses	Number and percent positive specimens		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza A (all)	121 (6.97)	689 (2.46)	1737	27982
Influenza B	406 (23.37)	1634 (5.84)	1737	27982
Parainfluenza virus	2 (0.15)	659 (2.84)	1359	23193
Adenovirus	20 (1.47)	389 (1.68)	1359	23193
Respiratory syncytial virus	113 (8.21)	3134 (13.29)	1377	23580
Entero/rhinovirus	20 (1.64)	900 (4.47)	1220	20146
Human metapneumovirus	46 (8.38)	280 (2.63)	549	10639
Coronavirus	14 (5.43)	366 (4.82)	258	7598

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 12, 2012. Please note that the last version received from PHAC as of 11:00AM on March 28, 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 12 and total outbreaks for the season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A (All subtypes)	0	0.0
Influenza B	3	60.0
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	20.0
Enterovirus/rhinovirus	0	0.0
No organism identified/reported	1	20.0
TOTAL	5	100.0
Total Respiratory Infection Outbreaks of the Season to date**	N	
Influenza A (All subtypes)	18	3.8
Influenza B	48	10.2
Influenza A and B	3	0.6
Parainfluenza (All types)	30	6.4
RSV	48	10.2
Combined Outbreaks [†]	42	9.0
Other organisms ^α	67	14.3
Enterovirus/rhinovirus	106	22.6
No organism identified/reported	107	22.8
TOTAL	469	100.0
Types of Institutions – All Outbreaks **		
Long-Term Care Homes	295	62.9
Hospitals	26	5.5
Retirement Homes	56	11.9
Other	2	0.4
Not Reported	90	19.2
TOTAL	469	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/28]

* 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. March 18, 2012 – March 24, 2012

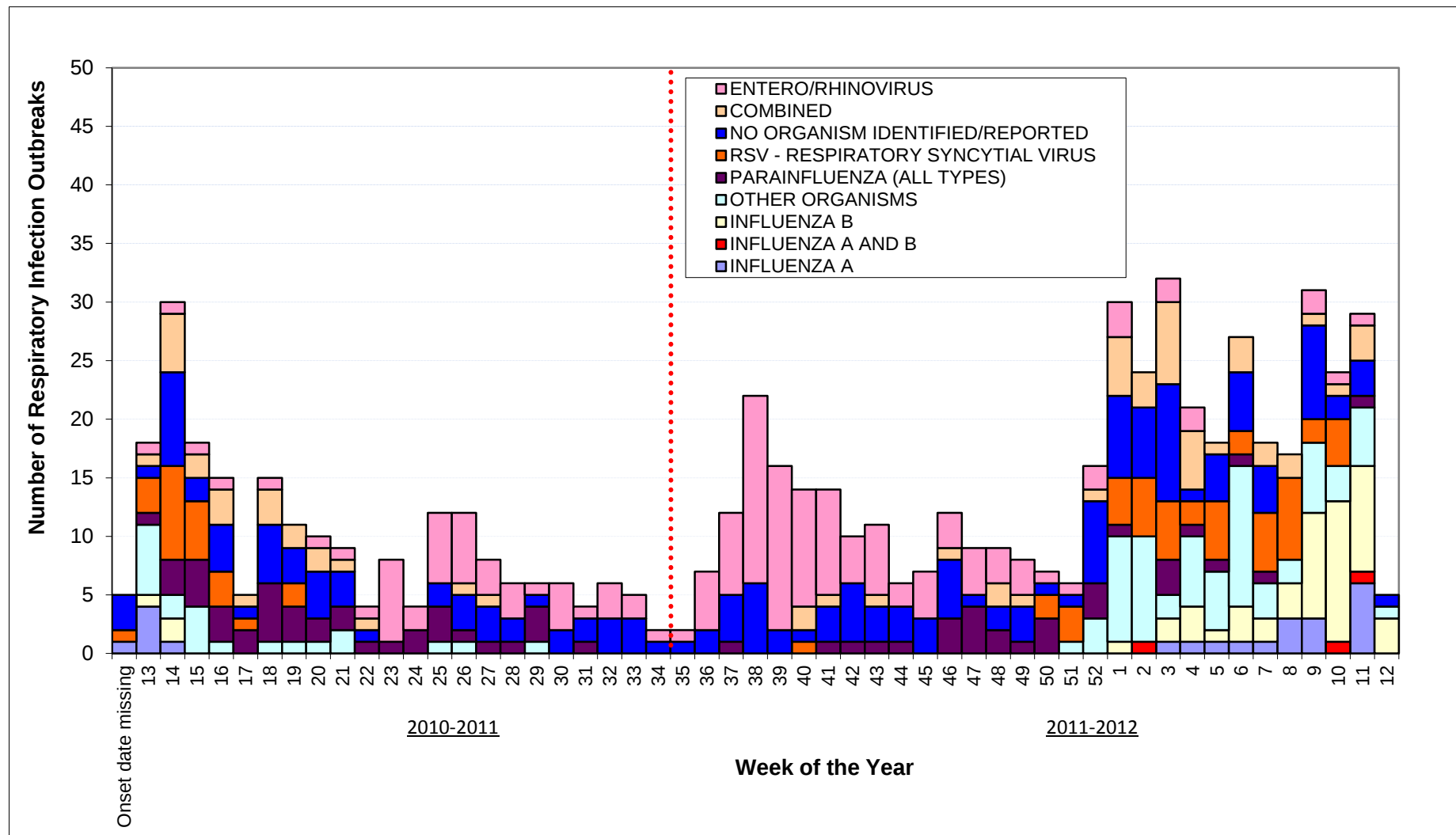
** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to week 12, 2012.

[†] 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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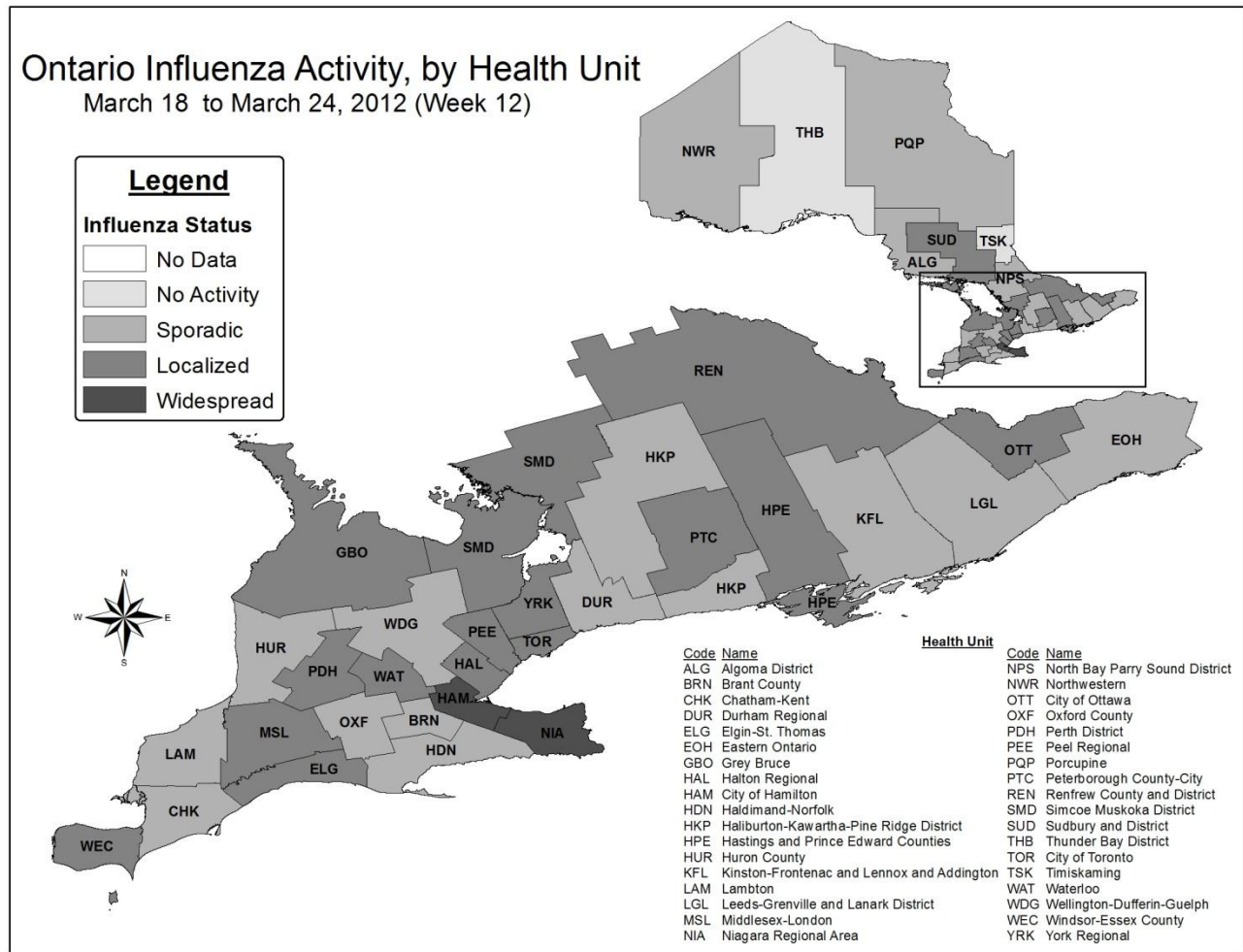
Figure 4: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including week 12 of the 2011-2012 season by causative organism



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/29]

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Figure 5: Influenza activity* levels in Ontario by health unit for week 12, 2012

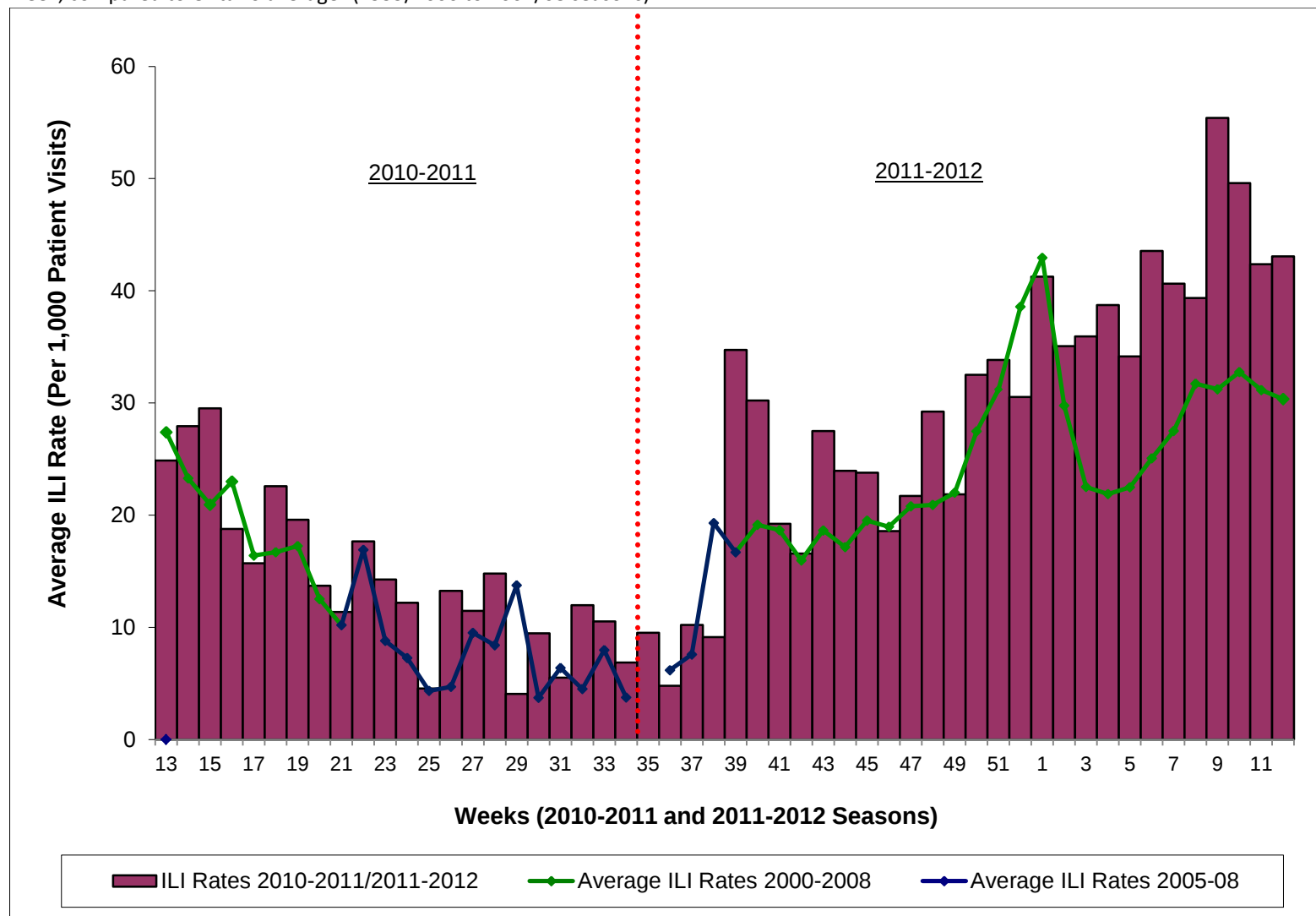


Source: PHO [Provincial Influenza Activity Report (Appendix C) Database]

* 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 12 of the 2011-2012 surveillance season, by report week, compared to Ontario average[†] (1999/2000 to 2007/08 seasons)



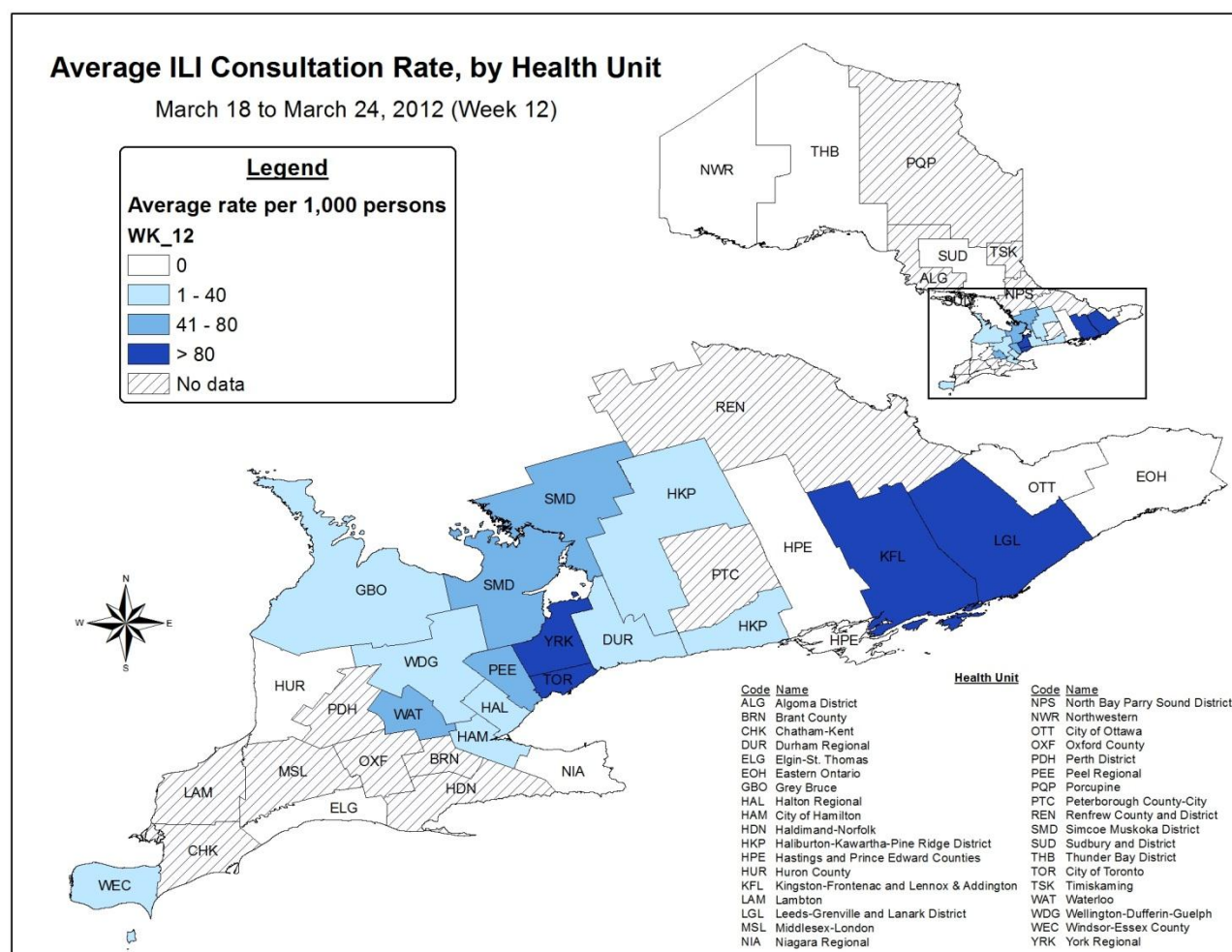
Source: Public Health Agency of Canada

* Sentinel information is reported to Public Health Agency of Canada, 71 sentinels reported in week 12.

[†] 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 12



Source: Public Health Agency of Canada

* Sentinels report ILI and patient data to the Public Health Agency of Canada; 71 sentinels reported in week 12, of which 68 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 12

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	11	18	45	11	0	85
ILI Consultation Rate (per 1,000 patient visits)	81.48	76.27	40.47	22.40	0.00	43.06

Source: Public Health Agency of Canada

* Sentinel information is reported to the Public Health Agency of Canada; 71 sentinels reported in week 12.

APPENDIX - I

Table 1: NML strain characterization, influenza isolates in Ontario and Canada, September 1, 2011 to March 21, 2012

	Ontario	Canada
Influenza A (H3N2) A/Perth/16/2009-like*	36	146
Influenza A(H1N1)pdm09 A/California/07/09-like*	80	111
Influenza B B/Brisbane/60/2008-like*	113	203
Influenza B B/Wisconsin/01/2010-like†	144	169

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

Please note that the last version received from PHAC as of 2:30PM on March 22, 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 March 22, 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)	44	1	184	1	0	28	0	128	0	28	0	127
Influenza A(H1N1)pdm09	101	0	146	0	0	87	0	118	0	86	0	117
Influenza B	NA	NA	NA	NA	0	245	0	345	0	245	0	345

(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 2:30PM on March 22, 2012 was used.