



Ontario Influenza Bulletin | 2011-2012

SURVEILLANCE WEEK 9 (February 26, 2012 – March 3, 2012)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from February 26, 2012 to March 3, 2012 (week 9). **All data are for week 9** and data extraction and analysis for this issue of the Bulletin occurred on March 7, 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

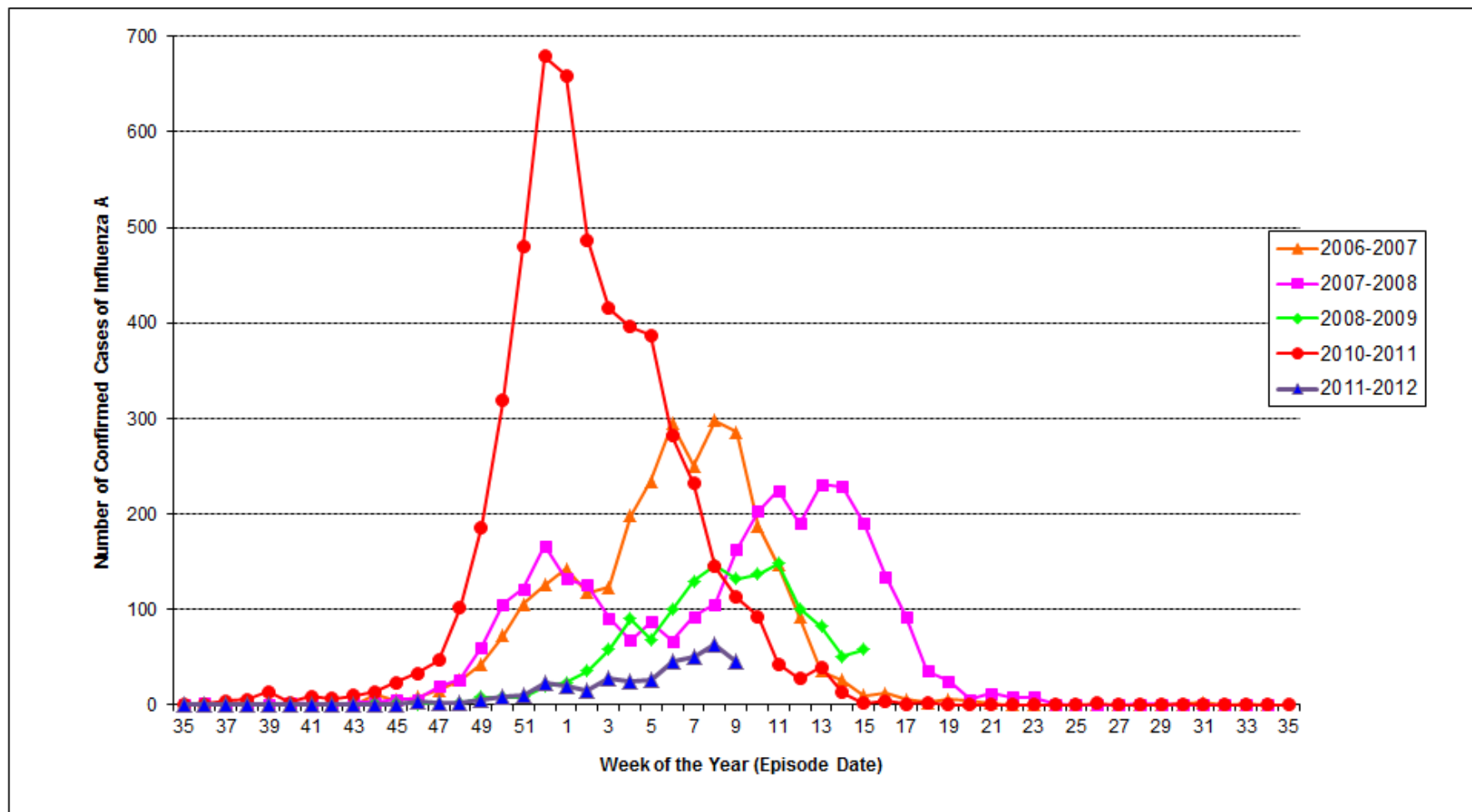
Measure of Activity	Assessment of measure compared to previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory Confirmed Influenza Cases	Higher	Three hundred and six (306) new influenza cases were reported* in week 9, which is higher than the number reported in week 8 (170). The percent positivity of laboratory tests for influenza in Ontario was 19.66% (6.08% for influenza A and 13.58% for influenza B) for week 9, which is higher than week 8 (12.75%) (Figure 3).
Respiratory virus activity	RSV activity is lower	Among other circulating respiratory viruses, respiratory syncytial virus (RSV) had the highest percent positivity in week 9 at 19.67% (Table 3), which is lower than week 8 (22.79%).
Institutional Respiratory Infection Outbreaks	Higher	Sixteen (16) new institutional respiratory outbreaks were reported for week 9, including two influenza A outbreaks and five influenza B outbreaks. Thirty-one (31) institutional influenza outbreaks have been reported to date this season.
Influenza Activity Levels Reported by Health Units	Similar	For week 9, Central East, Central West, Eastern, North East and Toronto regions reported 'localized' level influenza activity, while the South West and North West regions reported 'sporadic' level influenza activity.
Influenza-Like Illness (ILI) Consultation Rate reported by Sentinels	Higher	The provincial ILI consultation rate increased from 39.35/1,000 patient visits in week 8 to 55.41/1,000 patient visits in week 9. This rate is higher than the average rate for week 9 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 9 compared to week 8.
Measure of Severity for Influenza		
Hospitalizations Among Lab Confirmed Cases of Influenza	Higher	There were 103 hospitalizations reported among cases from February 26 to March 3, which is higher than the number (42) reported from February 19 to February 25*.
Deaths Among Lab Confirmed Cases of Influenza	Lower	No (0) deaths were reported from February 26 to March 3, which is lower than the number (2) reported from February 19 to February 25*.

*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 992 influenza cases have been reported for the 2011-2012 surveillance season to date, of which 306 were reported during week 9.
 - The majority of influenza cases reported for the 2011-2012 season to date were subtyped as influenza A(H1N1)pdm09 (165 cases) or influenza B (607 cases), which together account for 77.8% (772/992) of cases this season.
 - The majority of influenza cases this season have been children under 5 years old (279 cases) and adults 65 years of age and older (195 cases), which together account for 47.8% (474/992) of cases reported to date. The highest number of cases (193) has occurred in the 1 to 4 year old age group, which represents 19.5% of cases.
 - Among influenza cases that have been hospitalized, 33.7% (97/288) were children under 5 years old and 25.0% (72/288) were in adults over the age of 65 (Table 2).
 - 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 3, 2012. While influenza A activity is the lowest it has been over five seasons, more influenza B activity is being observed this season compared to the 2010-2011 season.
- The cause(s) of ILI in Ontario from September 1, 2011 to March 3, 2012 has changed as the season progressed:
 - Since week 5, influenza B has been the dominant circulating influenza virus. Of the 181 influenza B isolates that have been characterized at the National Microbiology Laboratory, 102 (56.4%) are a different strain (B/Wisconsin/01/2010-like) and lineage and is not contained in this season's trivalent influenza 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.
 - Since week 1, 31 institutional influenza outbreaks have been reported: 10 influenza A, 20 influenza B, and one combined A and B outbreak.
 - RSV had the highest percent positivity among laboratory tests of respiratory samples during week 9 at 19.67% (Table 3). RSV also has had the highest percent positivity among isolates submitted for testing for the season to date at 13.83%.
 - Coronavirus has had a percent positivity above 5% every week since week 52. For week 9, coronavirus had a percent positivity of 9.42%.

Figure 1: Confirmed cases of influenza A in Ontario by episode date reported from Sep. 1, 2006 to Mar. 3, 2012[†]



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/08].

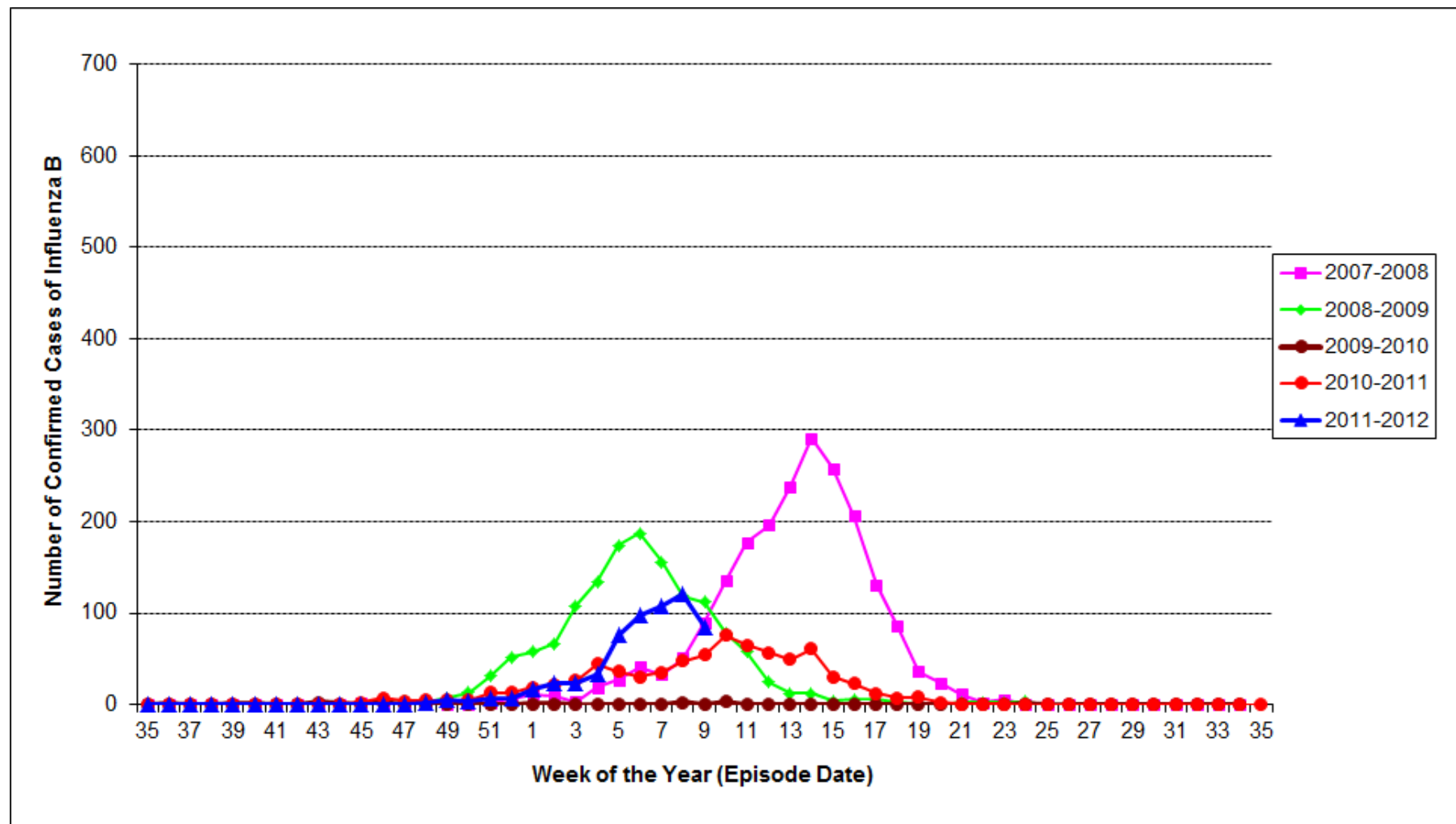
[†] Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

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. 3, 2012[†]



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/08].

[†] 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 9 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 (0)	0 (0)	0 (0)	0 (0)
	Thunder Bay District	0 (0)	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)	0 (1)
	TOTAL NORTH WEST	0 (0)	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)	0 (1)
North East	Algoma	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)	0 (0)	1 (1)
	North Bay Parry Sound District	0 (2)	1 (3)	0 (0)	0 (1)	0 (0)	4 (10)	5 (16)
	Porcupine	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Sudbury & District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (6)	1 (6)
	Timiskaming	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)
	TOTAL NORTH EAST	0 (3)	1 (3)	0 (0)	1 (2)	0 (0)	5 (16)	7 (24)
Eastern	City of Ottawa	1 (1)	2 (8)	0 (0)	0 (1)	0 (0)	6 (15)	9 (25)
	Eastern Ontario	0 (1)	1 (1)	0 (0)	1 (2)	0 (0)	3 (4)	5 (8)
	Hastings & Prince Edward Counties	0 (1)	0 (0)	0 (0)	0 (3)	0 (0)	1 (3)	1 (7)
	Kingston, Frontenac, Lennox & Addington	0 (2)	1 (2)	0 (0)	0 (0)	0 (0)	0 (2)	1 (6)
	Leeds, Grenville And Lanark District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)	1 (1)
	Renfrew County And District	0 (3)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (3)
	TOTAL EASTERN	1 (8)	4 (11)	0 (0)	1 (6)	0 (0)	11 (25)	17 (50)
Central East	Durham Region	2 (7)	1 (2)	0 (0)	0 (5)	0 (0)	3 (11)	6 (25)
	Haliburton, Kawartha, Pine Ridge	2 (2)	0 (3)	0 (0)	1 (2)	0 (0)	0 (4)	3 (11)
	Peel Region	6 (32)	6 (26)	0 (3)	1 (9)	1 (1)	39 (124)	53 (195)
	Peterborough County-City	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)
	Simcoe Muskoka District	0 (2)	1 (4)	0 (0)	2 (4)	0 (0)	23 (50)	26 (60)
	York Region	2 (7)	3 (10)	0 (0)	1 (4)	1 (1)	8 (15)	15 (37)
	TOTAL CENTRAL EAST	12 (50)	11 (46)	0 (3)	5 (24)	2 (2)	73 (204)	103 (329)
Toronto	Toronto	26 (88)	7 (34)	0 (0)	3 (17)	1 (3)	61 (174)	98 (316)
	TOTAL TORONTO	26 (88)	7 (34)	0 (0)	3 (17)	1 (3)	61 (174)	98 (316)
South West	Chatham-Kent	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Elgin-St. Thomas	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Grey Bruce	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)	0 (1)
	Huron County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (2)	0 (2)
	Lambton County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Middlesex-London	0 (0)	1 (4)	0 (0)	0 (6)	0 (0)	3 (8)	4 (18)
	Oxford County	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	1 (5)	1 (6)
	Perth District	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	3 (6)	3 (7)
	TOTAL SOUTH WEST	0 (0)	1 (6)	0 (0)	0 (7)	0 (0)	8 (23)	9 (36)
Central West	Brant County	0 (0)	0 (2)	0 (0)	0 (0)	0 (0)	1 (5)	1 (7)
	City Of Hamilton	2 (5)	6 (23)	0 (0)	0 (1)	0 (0)	19 (58)	27 (87)
	Haldimand-Norfolk	0 (0)	1 (1)	0 (0)	0 (0)	0 (0)	1 (2)	2 (3)
	Halton Region	0 (5)	3 (5)	0 (0)	0 (2)	0 (0)	14 (53)	17 (65)
	Niagara Region	1 (2)	0 (1)	0 (0)	1 (2)	0 (0)	8 (17)	10 (22)
	Waterloo Region	1 (3)	4 (8)	0 (0)	1 (1)	0 (0)	5 (23)	11 (35)
	Wellington-Dufferin-Guelph	0 (1)	0 (1)	0 (0)	0 (8)	0 (0)	4 (7)	4 (17)
	TOTAL CENTRAL WEST	4 (16)	14 (41)	0 (0)	2 (14)	0 (0)	52 (165)	72 (236)
	TOTAL ONTARIO	43 (165)	38 (141)	0 (3)	12 (71)	3 (5)	210 (607)	306 (992)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/07].

*Includes indeterminate, untypeable and other subtypes

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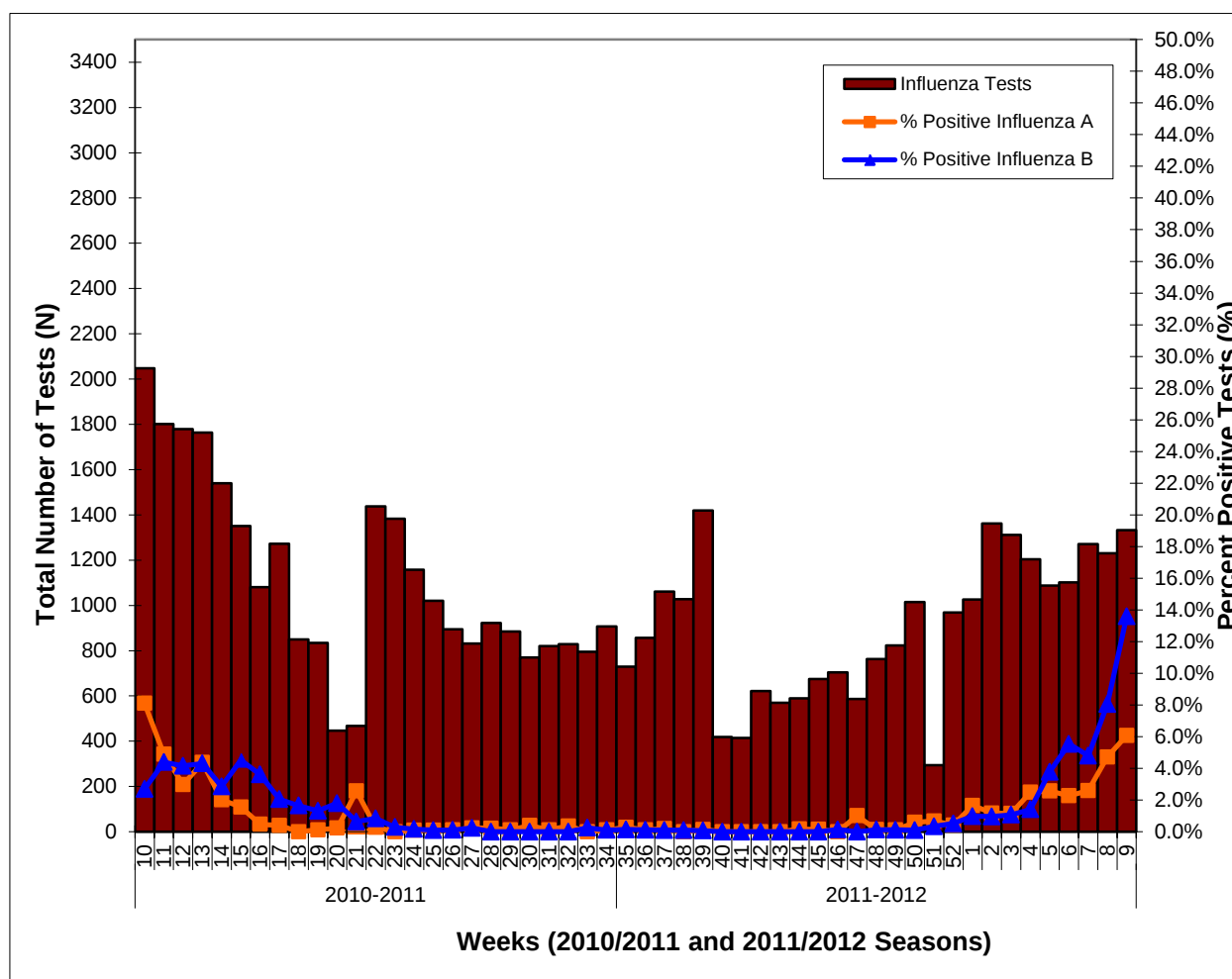
Table 2. Number of hospitalizations and deaths among influenza cases during week 9 and cumulative (in brackets) for the season by age group since September 1, 2011

Age Group	Number of Hospitalizations	Cumulative Rate per 100,000	Number of Deaths	Cumulative Rate per 100,000
<1	11 (32)	22.60	0 (0)	0.00
1-4	19 (65)	11.40	0 (1)	0.18
5-14	20 (46)	3.08	0 (0)	0.00
15-24	2 (5)	0.28	0 (0)	0.00
25-44	12 (31)	0.84	0 (0)	0.00
45-64	13 (37)	1.00	0 (0)	0.00
65+	26 (72)	3.93	0 (6)	0.33
Total	103 (288)	2.18	0 (7)	0.05

Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/08]. 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 9, 2012. Please note that the last version received from PHAC as of 11:00AM on March 7, 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 9

Detected viruses	Number and percent positive specimens		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza A (all)	81 (6.08)	346 (1.53)	1333	22563
Influenza B	181 (13.58)	546 (2.42)	1333	22563
Parainfluenza virus	7 (0.7)	635 (3.36)	1005	18900
Adenovirus	14 (1.39)	329 (1.74)	1005	18900
Respiratory syncytial virus	200 (19.67)	2659 (13.83)	1017	19228
Enterovirus	16 (1.86)	844 (5.17)	858	16311
Human metapneumovirus	18 (4.81)	149 (1.69)	374	8808
Coronavirus	21 (9.42)	302 (4.85)	223	6225

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 9, 2012. Please note that the last version received from PHAC as of 11:00AM on March 7, 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 9 and total outbreaks for the season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A (All subtypes)	2	12.5
Influenza B	5	31.3
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	3	18.8
Entero/rhinovirus	0	0.0
No organism identified/reported	6	37.5
TOTAL	16	100.0
Total Respiratory Infection Outbreaks of the Season to date**	N	% (of outbreaks)
Influenza A (All subtypes)	10	2.7
Influenza B	20	5.3
Influenza A and B	1	0.3
Parainfluenza (All types)	28	7.4
RSV	33	8.8
Combined Outbreaks [†]	36	9.6
Other organisms ^α	49	13.0
Entero/rhinovirus	100	26.6
No organism identified/reported	99	26.3
TOTAL	376	100.0
Types of Institutions – All Outbreaks **	N	% (of outbreaks)
Long-Term Care Homes	233	62.0
Hospitals	21	5.6
Retirement Homes	42	11.2
Other	2	0.5
Not Reported	78	20.7
TOTAL	376	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/07]

* 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. February 26, 2012 – March 3, 2012

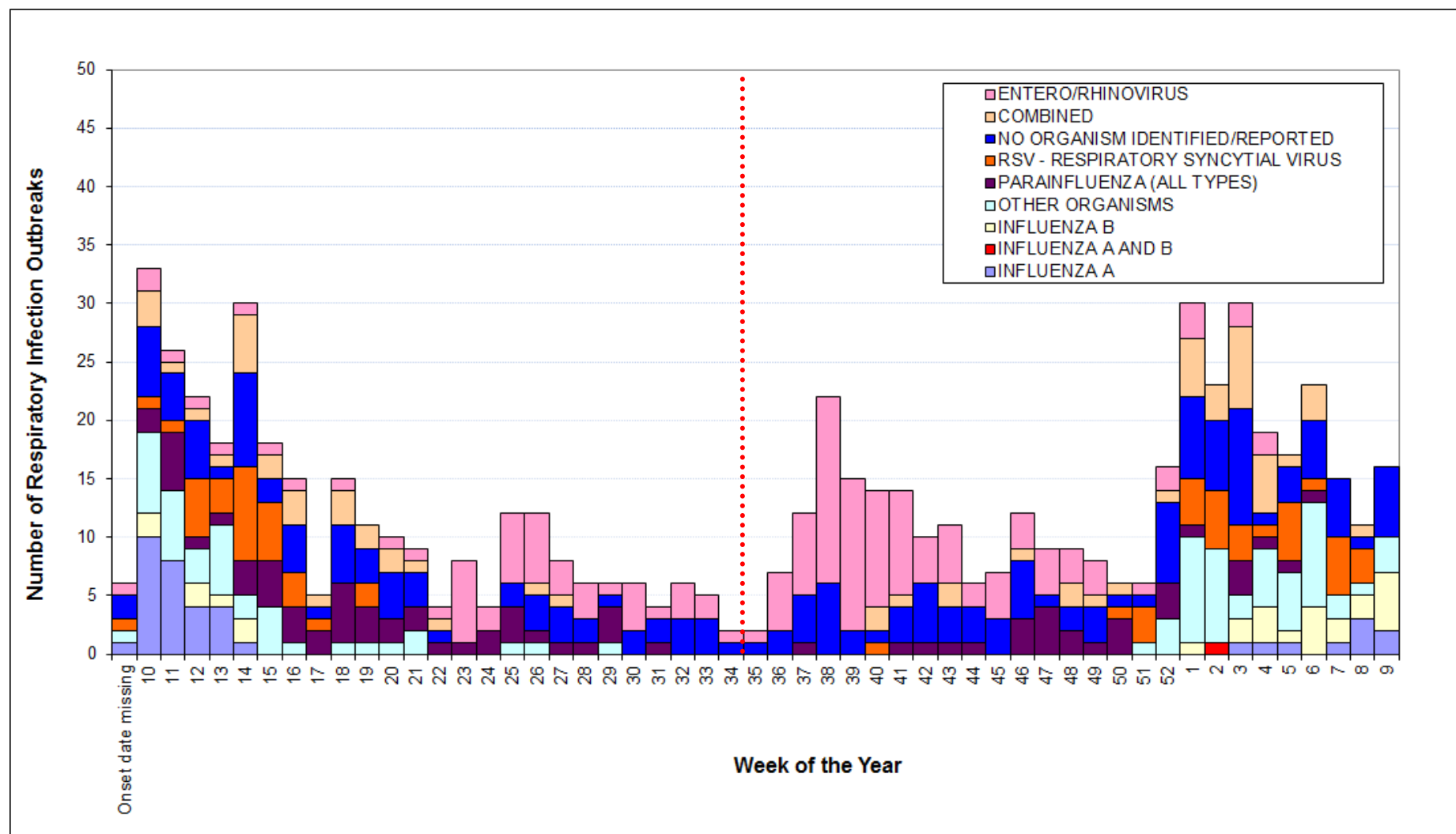
** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to week 9, 2012.

[†] 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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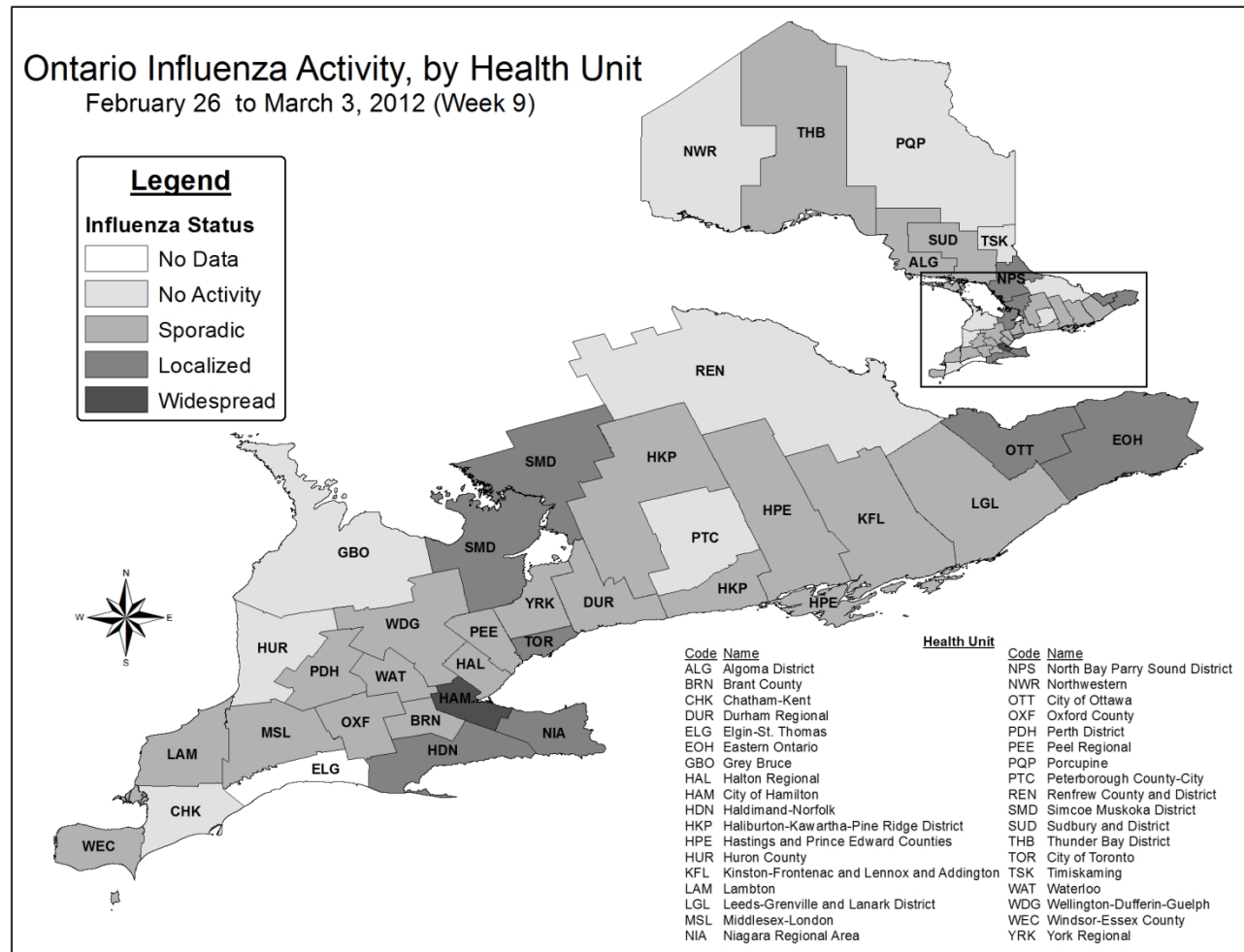
Figure 4: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including week 9 of the 2011-2012 season by causative organism



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/07]

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Figure 5: Influenza activity* levels in Ontario by health unit for week 9, 2012

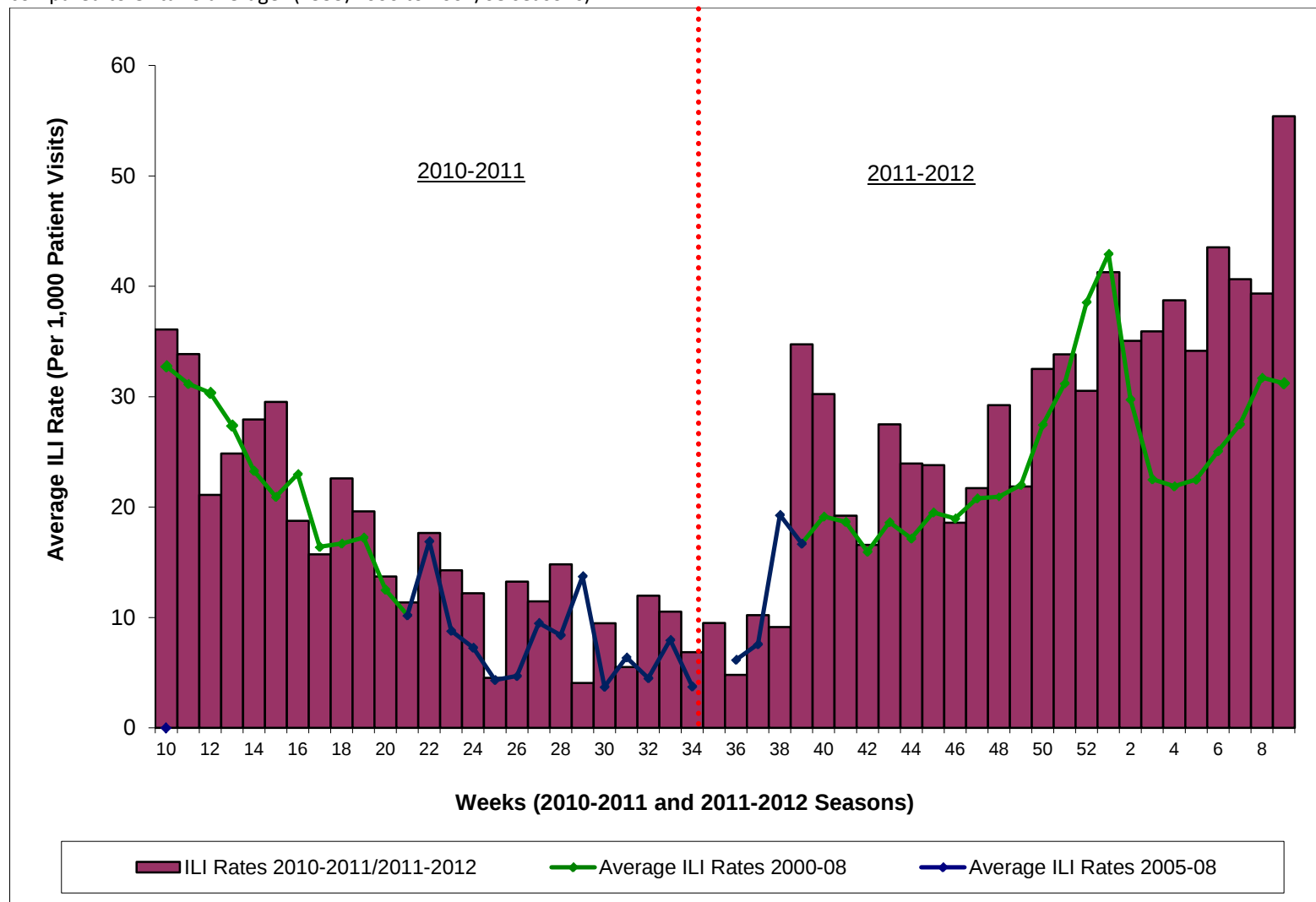


Source: PHO [Provincial Influenza Activity Report (Appendix C) Database]

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



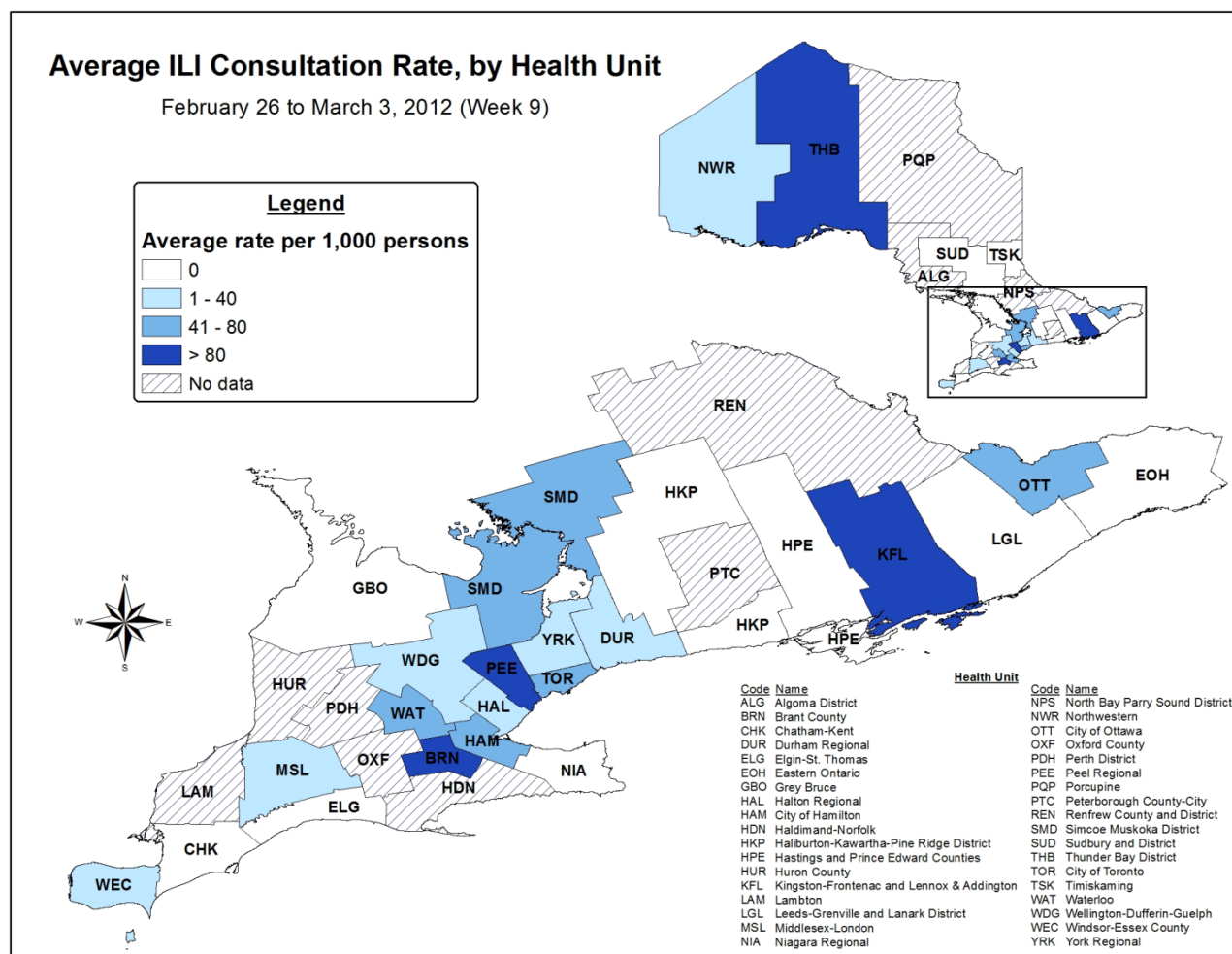
Source: Public Health Agency of Canada

* Sentinel information is reported to Public Health Agency of Canada, 73 sentinels reported in week 9.

[†] 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 9



Source: Public Health Agency of Canada

* Sentinels report ILI and patient data to the Public Health Agency of Canada; 73 sentinels reported in week 9, of which 70 were matched to a health unit and represented in the above map.

Note: The small numbers of sentinels reporting at the local level can make the ILI rates unstable. 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 9.

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	18	21	58	8	0	105
ILI Consultation Rate (per 1,000 patient visits)	145.16	103.96	51.19	18.35	0.00	55.41

Source: Public Health Agency of Canada

* Sentinel information is reported to the Public Health Agency of Canada; 73 sentinels reported in week 9.

APPENDIX - I

Table 1: NML strain characterization, influenza isolates in Ontario and Canada, September 1, 2011 to March 8, 2012.

	Ontario	Canada
Influenza A (H3N2) A/Perth/16/2009-like*	25	107
Influenza A(H1N1)pdm09 A/California/07/09-like*	65	87
Influenza B B/Brisbane/60/2008-like*	79	147
Influenza B B/Wisconsin/01/2010-like	102	119

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

Please note that the last version received from PHAC as of 1:00PM on March 8, 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.

Table 2: Amantadine, Oseltamivir and Zanamivir susceptibility assays completed on Canadian influenza isolates by NML, September 1, 2011 to March 8, 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)	36	1	149	1	0	23	0	106	0	23	0	106
Influenza A(H1N1)pdm09	78	0	108	0	0	69	0	91	0	69	0	91
Influenza B	NA	NA	NA	NA	0	181	0	254	0	180	0	253

(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 1:00PM on March 8, 2012 was used.