



Ontario Influenza Bulletin | 2011-2012

SURVEILLANCE WEEK 21 (May 20, 2012 – May 26, 2012)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from May 20, 2012 to May 26, 2012 (week 21). **All data are for week 21** and data extraction and analysis for this issue of the Bulletin occurred on May 30, 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.

Please note that beginning with week 22, Public Health Ontario will be publishing activity level reports and abbreviated versions of the Ontario Influenza Bulletin on alternating weeks. Full weekly versions of the Ontario Influenza Bulletin will resume in November 2012.

Assessment of Influenza and Other Respiratory Virus Activity in Ontario

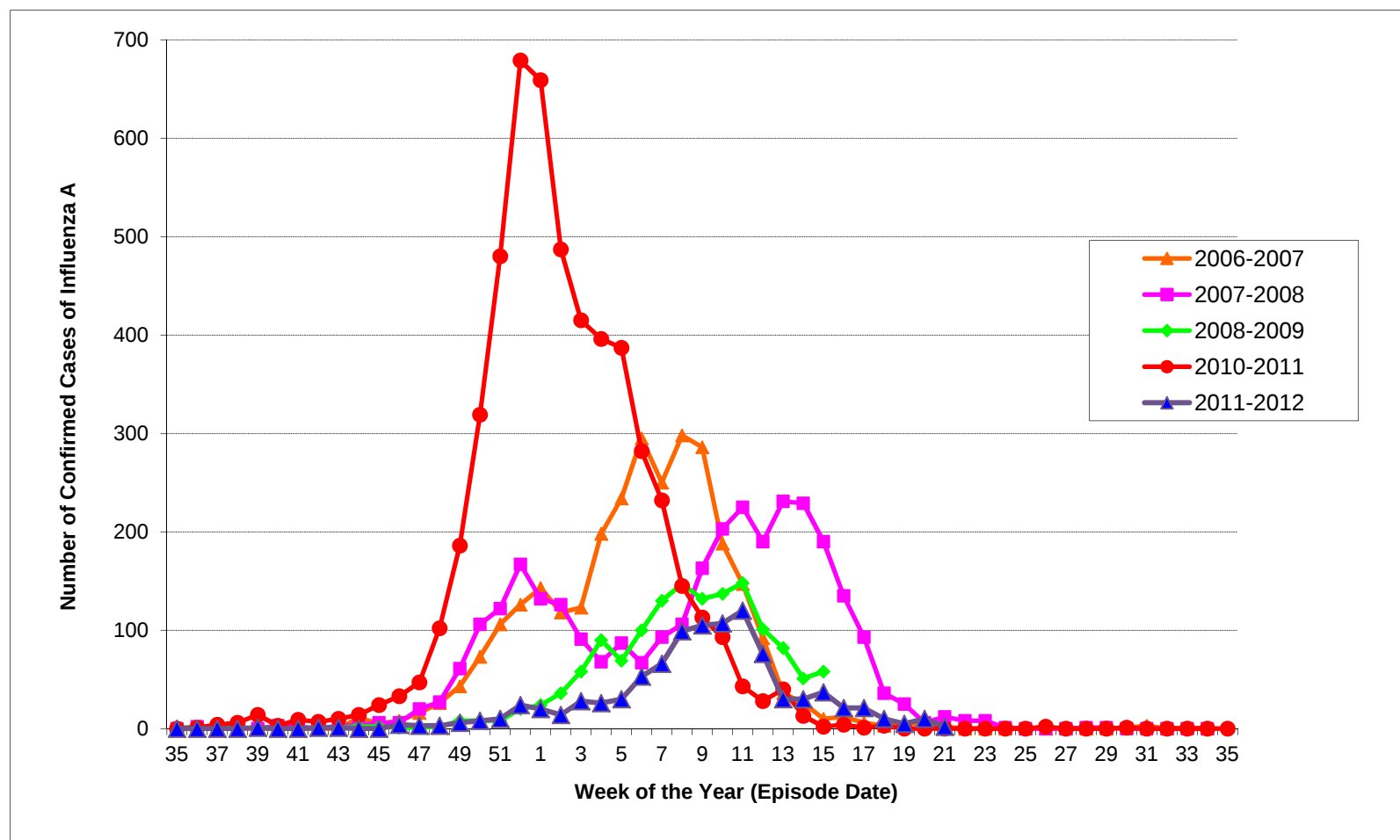
Measure of Activity	Assessment of measure compared to previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory Confirmed Influenza Cases	Lower	Thirty-three (33) new influenza cases were reported* in week 21, which is lower than the number reported in week 20 (57). The percent positivity for influenza in Ontario was 2.76% (0.39% for influenza A and 2.36% for influenza B) for week 21, which is lower than week 20 (3.79%).
Respiratory virus activity	Enterovirus/rhinovirus activity is higher	Among all circulating respiratory viruses, enterovirus/rhinovirus had the highest percent positivity in week 21 at 15.27%, which is higher than week 20 at 5.22%.
Institutional Respiratory Infection Outbreaks	Lower	Three (3) new institutional respiratory outbreaks were reported for week 21, which is lower than the five new institutional respiratory outbreaks reported for week 20. One hundred and thirty-three (133) institutional influenza outbreaks have been reported to date this season.
Influenza Activity Levels Reported by Health Units	Higher	For week 21, Eastern, Central East, Toronto, and Central West regions reported 'localized' level influenza activity, while North West, North East, and South West regions reported 'sporadic' level activity.
Influenza-Like Illness (ILI) Consultation Rate reported by Sentinels	Lower	The provincial ILI consultation rate decreased from 21.03/1,000 patient visits in week 20 to 13.53/1,000 patient visits in week 21. This rate is higher than the average rate for week 21 from previous years. Please note that the ILI rates for weeks 20 and 21 should be interpreted with caution because the number of reporting sentinels was lower than usual.
OVERALL ASSESSMENT FOR VIRUS ACTIVITY	Influenza activity in Ontario was <i>lower</i> compared to the previous week.	Overall, the indicators show that influenza activity was lower during week 21 compared to week 20.
Measure of Severity for Influenza		
Hospitalizations Among Lab Confirmed Cases of Influenza	Lower	There were 27 hospitalizations reported among cases from May 20 to May 26, which is lower than the number (36) reported from May 13 to May 19*.
Deaths Among Lab Confirmed Cases of Influenza	Higher	Three (3) deaths were reported from May 20 to May 26, which is higher than the number (2) reported from May 13 to May 19*.

*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 3877 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 74.8% (2900/3877) 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 May 26, 2012. This season, influenza B activity reached the highest level of activity seen in over five seasons. Influenza B activity has been decreasing since week 12.
 - For the 3867 cases for which age is known, children under 5 years old (858 cases) and adults 65 years of age and older (949 cases) account for 46.7% (1807/3867) of influenza cases reported to date. The highest number of cases (636) occurred in the 1 to 4 year old age group, which represents 16.4% of cases.
 - Among influenza cases that have been hospitalized, 24.9% (286/1149) were children under 5 years old and 34.6% (398/1149) were adults over the age of 65 years (Table 2).
 - No institutional influenza outbreaks were reported prior to week 1 of 2012; since then, 133 have been reported, including 27 outbreaks of influenza A, 103 outbreaks of influenza B, and three combined influenza A and B outbreaks.
- The cause(s) of ILI in Ontario from September 1, 2011 to May 26, 2012 changed as the season progressed:
 - Since week 5, influenza B has been the dominant circulating influenza virus although the incidence has been decreasing since week 12. Of the 558 influenza B isolates characterized at the National Microbiology Laboratory, 356 (63.8%) 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 parainfluenza virus decreased from 3.6% in week 20 to 2.9% in week 21. Parainfluenza virus had the second highest percent positivity among specimens submitted for testing in week 21; enterovirus/rhinovirus had the highest percent positivity at 15.3%.

Figure 1: Confirmed cases of influenza A in Ontario by episode date reported from Sep. 1, 2006 to May 26, 2012[†]



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/05/30].

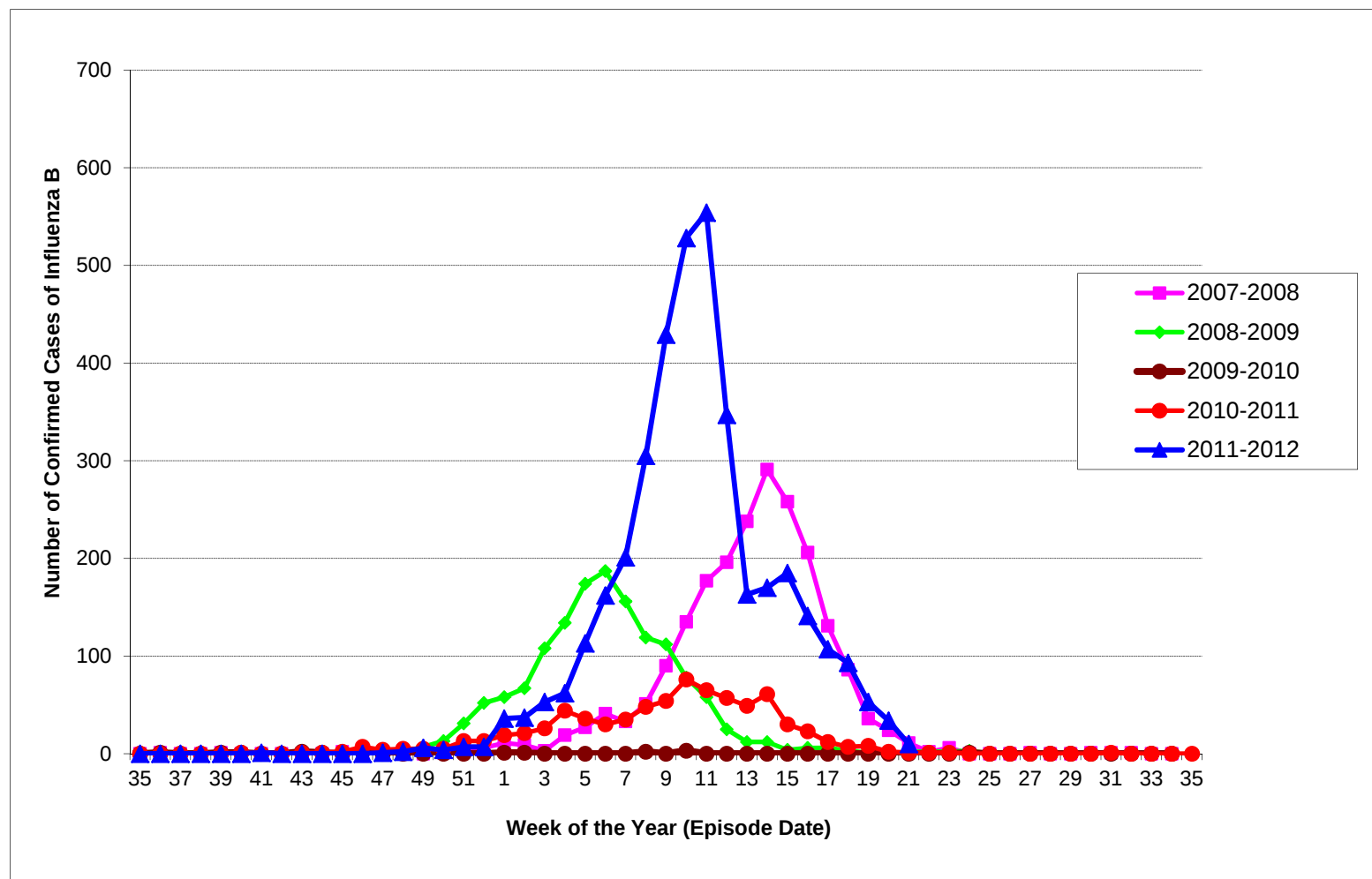
[†] Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date). Case counts based on episode dates may not be the same as case counts based on reported dates.

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 May 26, 2012[†]



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/05/30].

[†] 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.

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 21 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 (3)	0 (0)	0 (5)	0 (8)
	Thunder Bay District	0 (0)	0 (0)	0 (0)	0 (2)	0 (0)	1 (9)	1 (11)
	TOTAL NORTH WEST	0 (0)	0 (0)	0 (0)	0 (5)	0 (0)	1 (14)	1 (19)
North East	Algoma	0 (1)	0 (0)	0 (0)	0 (2)	0 (0)	5 (34)	5 (37)
	North Bay Parry Sound District	0 (2)	0 (5)	0 (0)	0 (1)	0 (0)	1 (55)	1 (63)
	Porcupine	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (29)	1 (29)
	Sudbury & District	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (35)	0 (36)
	Timiskaming	0 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (3)	0 (5)
	TOTAL NORTH EAST	0 (6)	0 (5)	0 (0)	0 (3)	0 (0)	7 (156)	7 (170)
Eastern	City of Ottawa	0 (5)	1 (44)	0 (0)	0 (3)	0 (0)	0 (95)	1 (147)
	Eastern Ontario	0 (2)	0 (4)	0 (0)	0 (5)	0 (0)	0 (45)	0 (56)
	Hastings & Prince Edward Counties	0 (7)	0 (2)	0 (0)	0 (9)	0 (0)	2 (34)	2 (52)
	Kingston, Frontenac, Lennox & Addington	0 (4)	0 (5)	0 (0)	0 (1)	0 (0)	1 (32)	1 (42)
	Leeds, Grenville And Lanark District	0 (0)	0 (1)	0 (0)	0 (2)	0 (0)	0 (13)	0 (16)
	Renfrew County And District	0 (3)	0 (1)	0 (0)	0 (0)	0 (0)	3 (8)	3 (12)
	TOTAL EASTERN	0 (21)	1 (57)	0 (0)	0 (20)	0 (0)	6 (227)	7 (325)
Central East	Durham Region	0 (16)	1 (12)	0 (0)	0 (6)	0 (0)	0 (73)	1 (107)
	Haliburton, Kawartha, Pine Ridge	0 (8)	0 (9)	0 (1)	0 (6)	0 (0)	0 (47)	0 (71)
	Peel Region	0 (76)	0 (39)	0 (4)	0 (18)	0 (1)	4 (406)	4 (544)
	Peterborough County-City	0 (2)	0 (2)	0 (0)	0 (0)	0 (0)	0 (24)	0 (28)
	Simcoe Muskoka District	0 (18)	0 (8)	0 (0)	0 (15)	0 (0)	1 (199)	1 (240)
	York Region	0 (22)	0 (22)	0 (0)	0 (11)	0 (0)	0 (112)	0 (167)
	TOTAL CENTRAL EAST	0 (142)	1 (92)	0 (5)	0 (56)	0 (1)	5 (861)	6 (1157)
Toronto	Toronto	0 (170)	0 (57)	0 (1)	0 (70)	0 (3)	5 (703)	5 (1004)
	TOTAL TORONTO	0 (170)	0 (57)	0 (1)	0 (70)	0 (3)	5 (703)	5 (1004)
South West	Chatham-Kent	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (11)	1 (11)
	Elgin-St. Thomas	0 (1)	0 (0)	0 (0)	0 (1)	0 (0)	0 (12)	0 (14)
	Grey Bruce	0 (5)	0 (1)	0 (0)	0 (1)	0 (0)	0 (44)	0 (51)
	Huron County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (29)	0 (29)
	Lambton County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (10)	0 (10)
	Middlesex-London	0 (6)	0 (19)	0 (0)	0 (9)	0 (0)	1 (71)	1 (105)
	Oxford County	0 (2)	0 (3)	0 (0)	0 (1)	0 (0)	0 (25)	0 (31)
	Perth District	0 (3)	0 (1)	0 (0)	0 (2)	0 (0)	0 (41)	0 (47)
	Windsor-Essex County	0 (1)	0 (3)	0 (0)	0 (5)	0 (0)	0 (17)	0 (26)
	TOTAL SOUTH WEST	0 (18)	0 (27)	0 (0)	0 (19)	0 (0)	2 (260)	2 (324)
Central West	Brant County	0 (0)	0 (5)	0 (0)	0 (1)	0 (0)	0 (20)	0 (26)
	City Of Hamilton	0 (19)	0 (42)	0 (0)	0 (5)	0 (0)	0 (202)	0 (268)
	Haldimand-Norfolk	0 (0)	0 (2)	0 (0)	0 (1)	0 (0)	0 (22)	0 (25)
	Halton Region	0 (19)	2 (21)	0 (0)	0 (5)	0 (0)	3 (135)	5 (180)
	Niagara Region	0 (9)	0 (2)	0 (0)	0 (4)	0 (0)	0 (122)	0 (137)
	Waterloo Region	0 (20)	0 (13)	0 (0)	0 (8)	0 (0)	0 (117)	0 (158)
	Wellington-Dufferin-Guelph	0 (8)	0 (4)	0 (0)	0 (11)	0 (0)	0 (61)	0 (84)
	TOTAL CENTRAL WEST	0 (75)	2 (89)	0 (0)	0 (35)	0 (0)	3 (679)	5 (878)
	TOTAL ONTARIO	0 (432)	4 (327)	0 (6)	0 (208)	0 (4)	29 (2900)	33 (3877)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/05/30].

*Includes indeterminate, untypeable and other subtypes

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Table 2. Number of hospitalizations and deaths among influenza cases during week 21 and cumulative (in brackets) for the season by age group since September 1, 2011

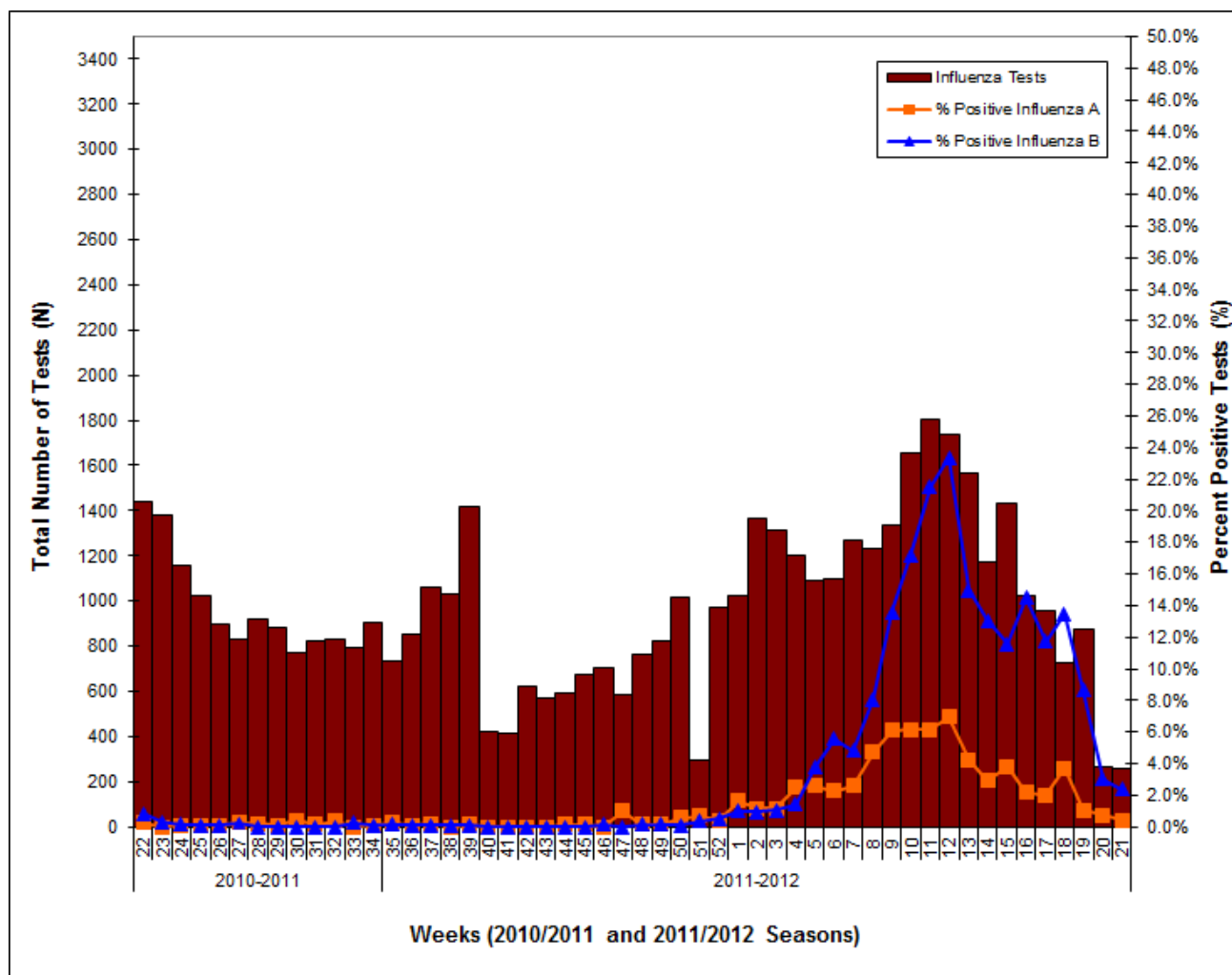
Age Group	Number of Hospitalizations	Cumulative Rate per 100,000	Number of Deaths	Cumulative Rate per 100,000
<1	2 (96)	67.80	0 (1)	0.71
1-4	5 (190)	33.33	0 (1)	0.18
5-14	3 (155)	10.37	0 (1)	0.07
15-24	0 (19)	1.05	0 (0)	0.00
25-44	2 (99)	2.69	0 (1)	0.03
45-64	4 (191)	5.18	0 (9)	0.24
65+	11 (398)	21.70	3 (57)	3.11
Total	27 (1149*)	8.70	3 (71*)	0.54

Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/05/30]. Population data obtained from IntelliHEALTH Ontario, retrieved by Public Health Ontario [2012/01/13].

* The total numbers and cumulative rates of hospitalizations and deaths each include one 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 21, 2012. Please note that the last version received from PHAC as of 12:00PM on May 30, 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 21

Detected viruses	Number and percent positive specimens		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza A (all)	1 (0.39)	930 (2.53)	254	36826
Influenza B	6 (2.36)	2663 (7.23)	254	36826
Parainfluenza virus	6 (2.94)	713 (2.33)	204	30630
Adenovirus	3 (1.47)	466 (1.52)	204	30605
Respiratory syncytial virus	2 (0.97)	3447 (11.1)	207	31068
Enterovirus	20 (15.27)	1149 (4.3)	131	26706
Human metapneumovirus	5 (2.45)	463 (3.33)	204	13905
Coronavirus	1 (1.28)	466 (4.65)	78	10014

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 21, 2012. Please note that the last version received from PHAC as of 12:00 PM on May 30, 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 21 and total outbreaks for the 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)	0	0.0
RSV	0	0.0
Combined Outbreaks [†]	0	0.0
Other organisms ^α	0	0.0
Entero/rhinovirus	0	0.0
No organism identified/reported	3	100.0
TOTAL	3	100.0
Total Respiratory Infection Outbreaks of the Season to date**		
Influenza A (All subtypes)	27	4.4
Influenza B	103	16.8
Influenza A and B	3	0.5
Parainfluenza (All types)	30	4.9
RSV	58	9.5
Combined Outbreaks [†]	60	9.8
Other organisms ^α	97	15.8
Entero/rhinovirus	116	18.9
No organism identified/reported	119	19.4
TOTAL	613	100.0
Types of Institutions – All Outbreaks **		
Long-Term Care Homes	400	65.3
Hospitals	31	5.1
Retirement Homes	73	11.9
Other	4	0.7
Not Reported	105	17.1
TOTAL	613	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/05/30]

* 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. May 20, 2012 – May 26, 2012

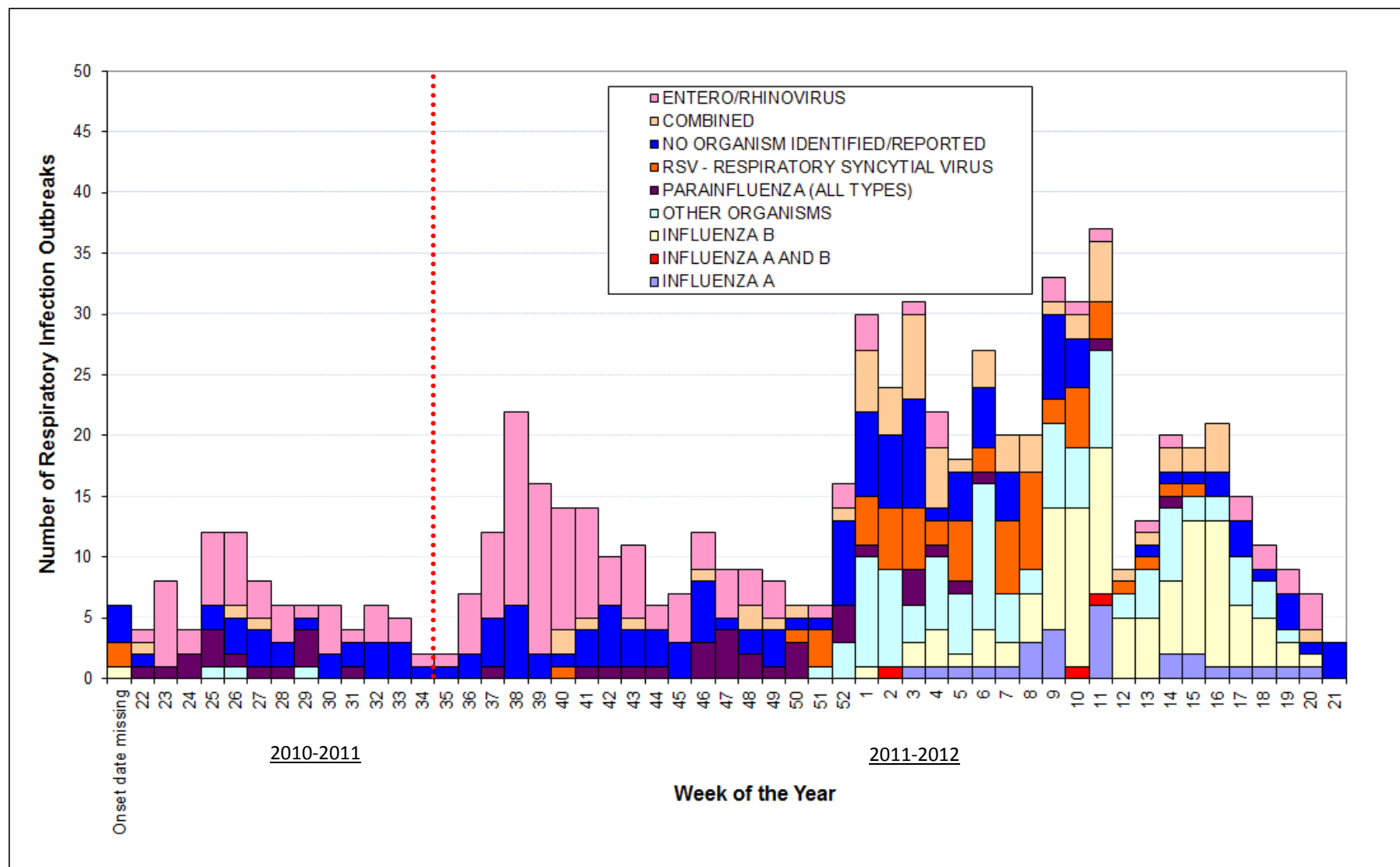
** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to week 21, 2012.

[†] 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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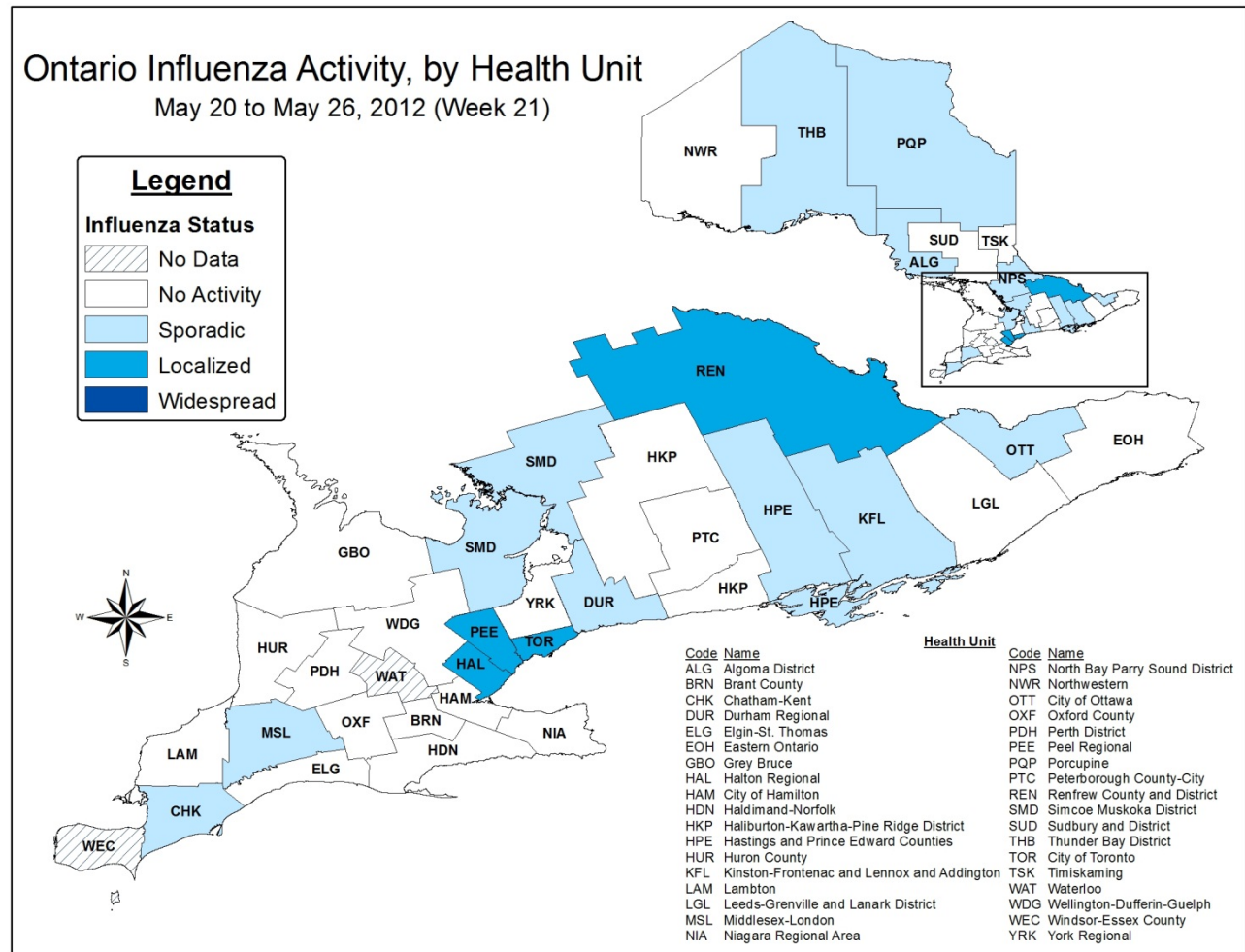
Figure 4: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including week 21 of the 2011-2012 season by causative organism



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/05/30]

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Figure 5: Influenza activity* levels in Ontario by health unit for week 21, 2012

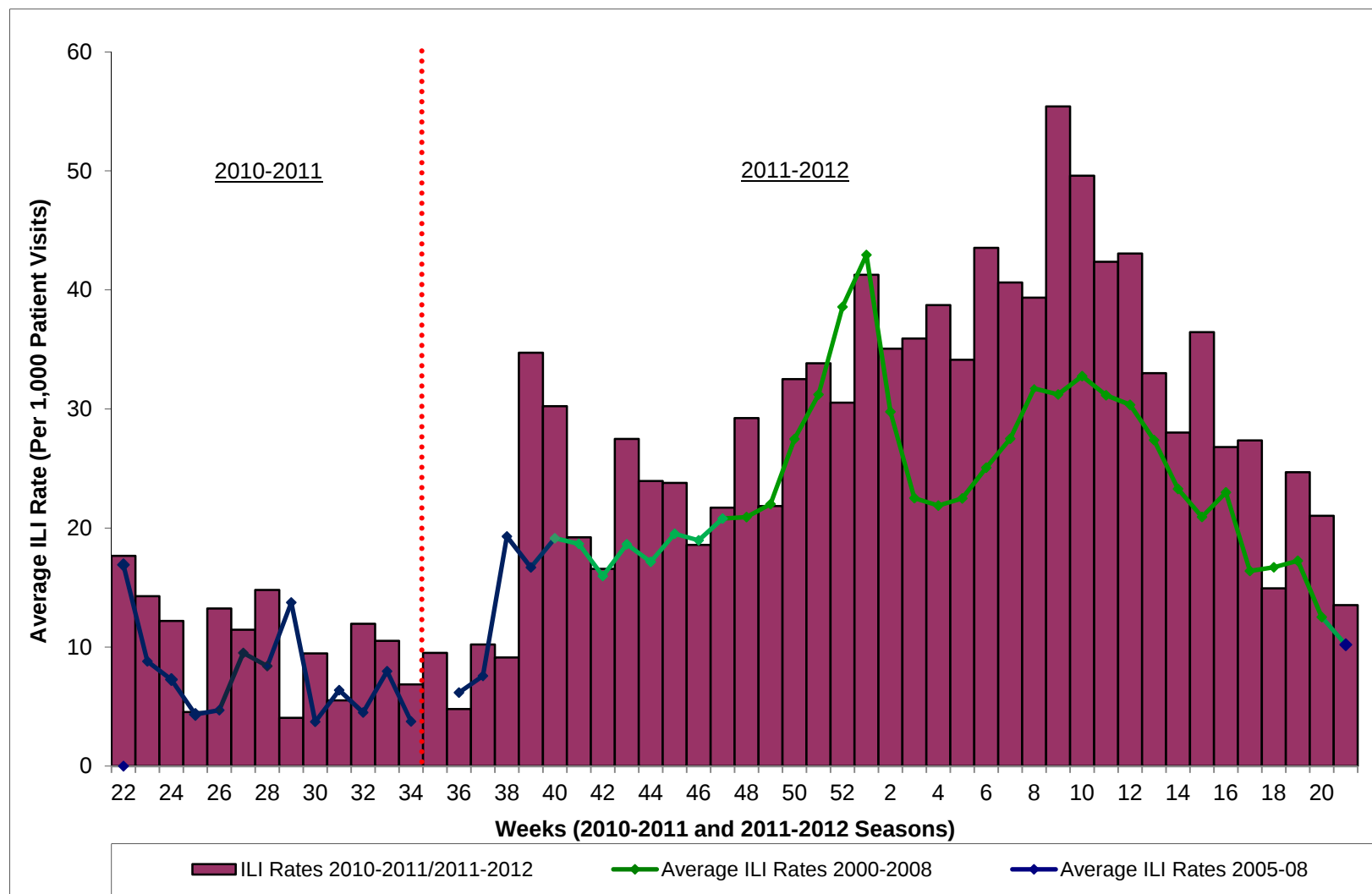


Source: PHO [Provincial Influenza Activity Report (Appendix C) Database]

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



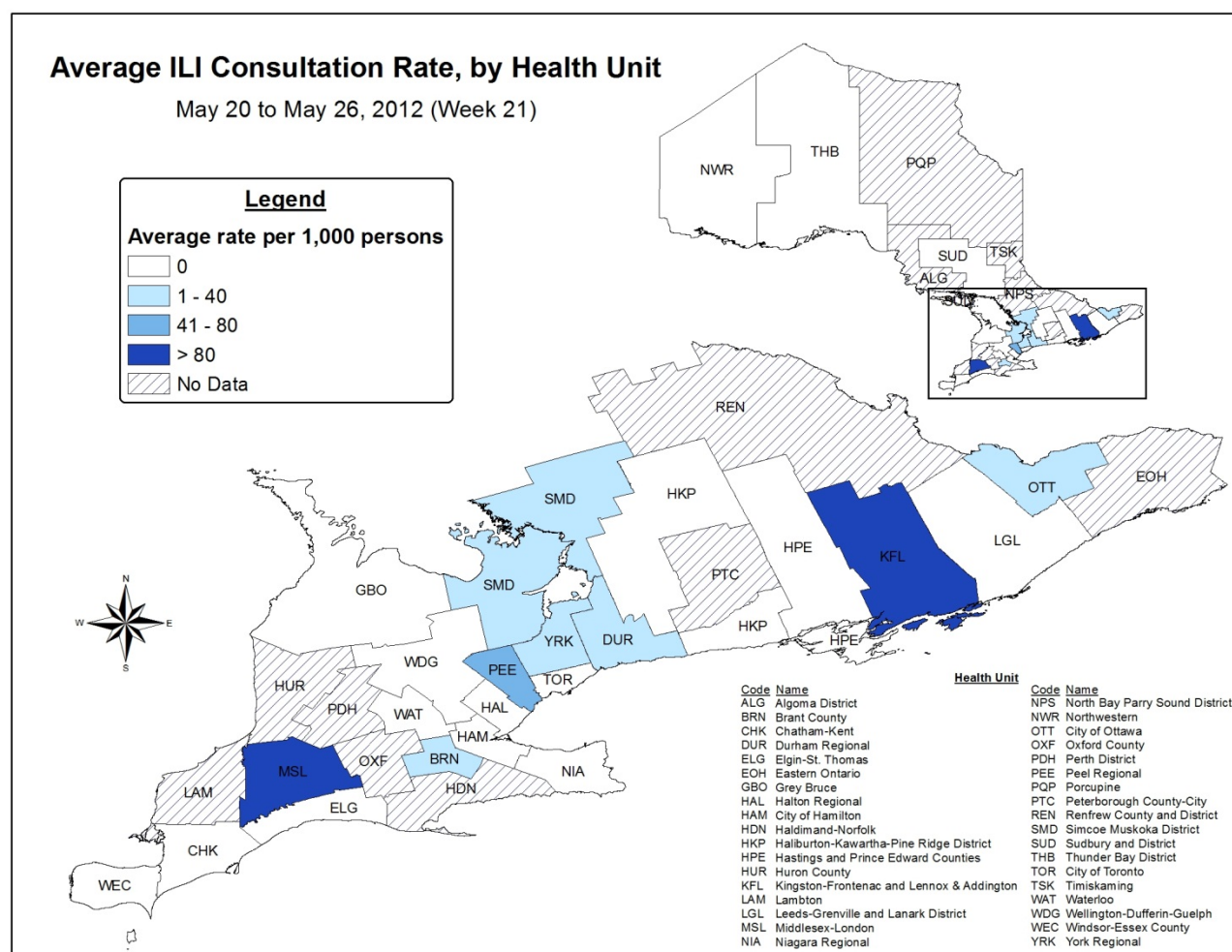
Source: Public Health Agency of Canada

* Sentinel information is reported to Public Health Agency of Canada, 50 sentinels reported in week 21.

[†] 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 21



Source: Public Health Agency of Canada

* Sentinels report ILI and patient data to the Public Health Agency of Canada; 50 sentinels reported in week 21, of which 48 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 21

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	2	4	9	3	0	18
ILI Consultation Rate (per 1,000 patient visits)	20.83	25.81	11.81	9.46	0.00	13.53

Source: Public Health Agency of Canada

* Sentinel information is reported to the Public Health Agency of Canada; 50 sentinels reported in week 21.

APPENDIX - I

Table 1: NML strain characterization of influenza isolates in Ontario and Canada, September 1, 2011 to May 30, 2012

	Ontario	Canada
Influenza A (H3N2) A/Perth/16/2009-like*	62	239
Influenza A(H1N1)pdm09 A/California/07/09-like*	137	208
Influenza B B/Brisbane/60/2008-like*	202	417
Influenza B B/Wisconsin/01/2010-like†	356	447

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

Please note that the last version received from PHAC as of 9:00AM on May 31, 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 May 30, 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)	105	1	383	1	0	56	0	225	0	54	0	207
Influenza A(H1N1)pdm09	215	0	327	0	0	164	0	235	0	164	0	229
Influenza B	NA	NA	NA	NA	0	554	0	838	0	529	0	787

(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 9:00AM on May 31, 2012 was used.