



Ontario Influenza Bulletin | 2011-2012

SURVEILLANCE WEEK 20 (May 13, 2012 – May 19, 2012)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from May 13, 2012 to May 19, 2012 (week 20). **All data are for week 20** and data extraction and analysis for this issue of the Bulletin occurred on May 23, 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. ***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

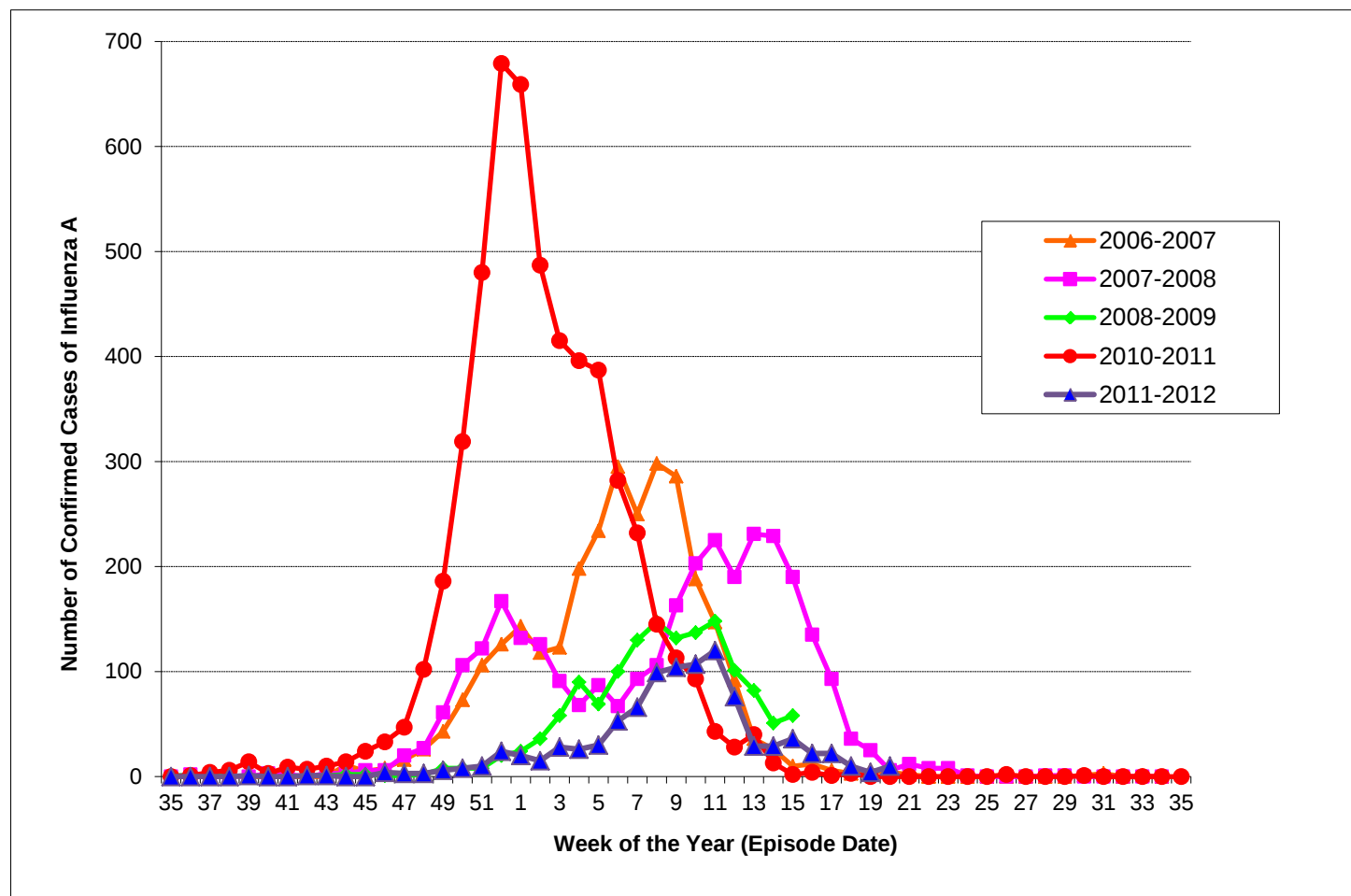
Measure of Activity	Assessment of measure compared to previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory Confirmed Influenza Cases	Lower	Fifty-seven (57) new influenza cases were reported* in week 20, which is lower than the number reported in week 19 (76). The percent positivity for influenza in Ontario was 3.79% (0.76% for influenza A and 3.03% for influenza B) for week 20, which is lower than week 19 (9.69%).
Respiratory virus activity	Enterovirus/rhinovirus activity is lower	Among all circulating respiratory viruses, enterovirus/rhinovirus had the highest percent positivity in week 20 at 5.22%, which is lower than week 19 at 5.84%. This has changed from previous weeks where influenza B has had the highest percent positivity.
Institutional Respiratory Infection Outbreaks	Similar	Five (5) new institutional respiratory outbreaks were reported for week 20, including one influenza A outbreak which is the same as the number new institutional respiratory outbreaks reported for week 19 (5). One hundred and twenty-seven (127) institutional influenza outbreaks have been reported to date this season.
Influenza Activity Levels Reported by Health Units	Lower	For week 20, Central East, Toronto, South West and Central West regions reported 'localized' level influenza activity, while North West and Eastern regions reported 'sporadic' level activity. North East region reported no activity.
Influenza-Like Illness (ILI) Consultation Rate reported by Sentinels	Lower	The provincial ILI consultation rate decreased from 24.69/1,000 patient visits in week 19 to 21.03/1,000 patient visits in week 20. This rate is higher than the average rate for week 20 from previous years. Please note that the ILI rates for weeks 19 and 20 should be interpreted with caution because the number of reporting sentinels was much 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 20 compared to week 19.
Measure of Severity for Influenza		
Hospitalizations Among Lab Confirmed Cases of Influenza	Lower	There were 36 hospitalizations reported among cases from May 13 to May 19, which is lower than the number (66) reported from May 6 to May 12*.
Deaths Among Lab Confirmed Cases of Influenza	Lower	Two (2) deaths were reported from May 13 to May 19, which is lower than the number (4) reported from May 6 to May 12*.

*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 3836 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 74.7% (2864/3836) 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 19, 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 3826 cases for which age is known, children under 5 years old (851 cases) and adults 65 years of age and older (932 cases) account for 46.6% (1783/3826) of influenza cases reported to date. The highest number of cases (631) occurred in the 1 to 4 year old age group, which represents 16.5% of cases.
 - Among influenza cases that have been hospitalized, 24.9% (279/1122) were children under 5 years old and 34.5% (387/1122) were adults over the age of 65 years (Table 2).
 - No institutional influenza outbreaks were reported prior to week 1 of 2012; since then, 127 have been reported, including 26 outbreaks of influenza A, 98 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 19, 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 548 influenza B isolates characterized at the National Microbiology Laboratory, 350 (63.9%) 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 increased from 1.6% in week 19 to 3.6% in week 20. Parainfluenza virus had the second highest percent positivity among specimens submitted for testing in week 20; enterovirus had the highest percent positivity at 5.2%.

Figure 1: Confirmed cases of influenza A in Ontario by episode date reported from Sep. 1, 2006 to May 19, 2012[†]



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/05/23].

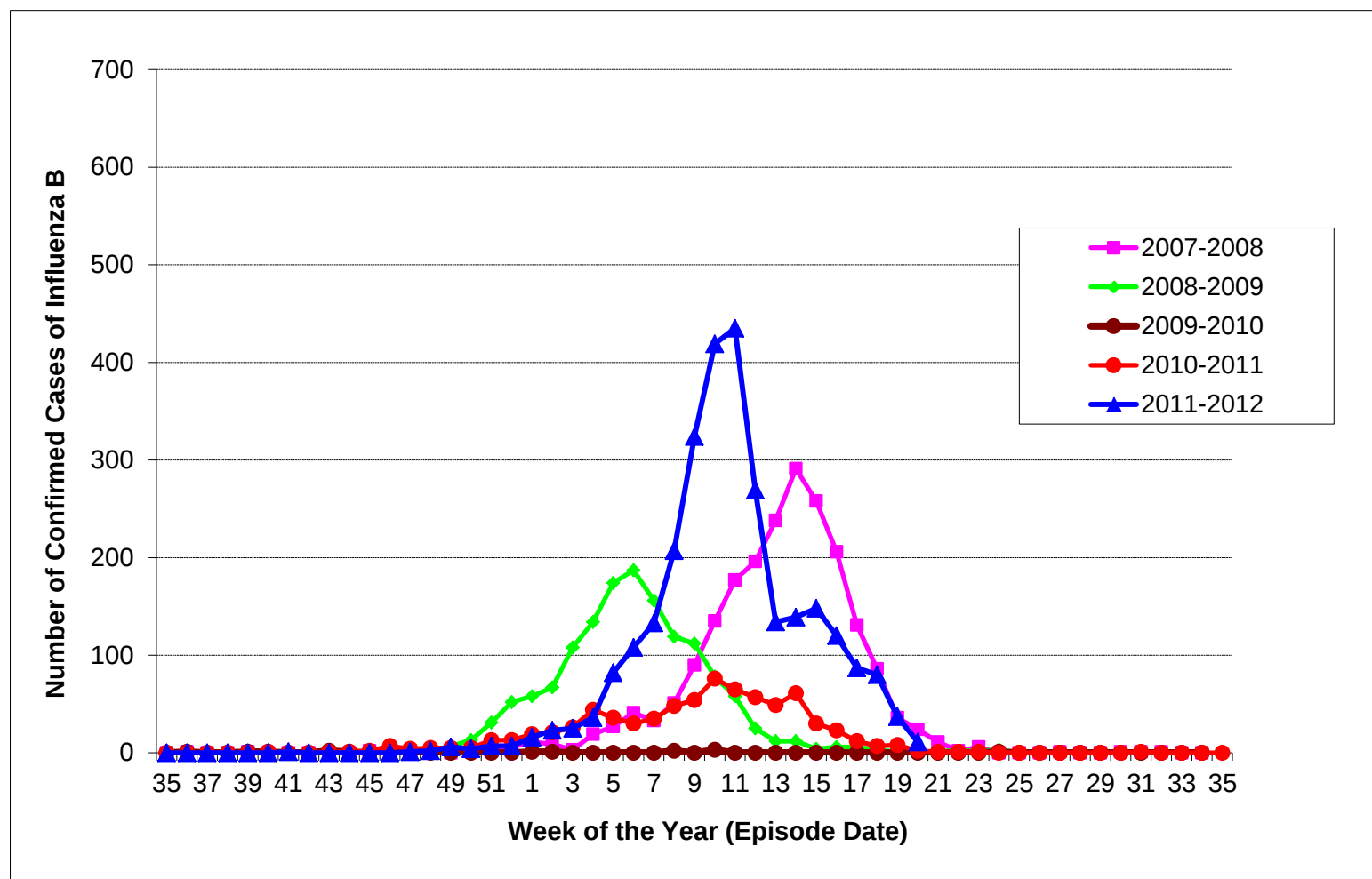
[†] Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date). Case counts based on episode dates may not be the same as case counts based on reported 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 19, 2012[†]



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/05/23].

[†] 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 20 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/No t 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 (8)	1 (10)
	TOTAL NORTH WEST	0 (0)	0 (0)	0 (0)	0 (5)	0 (0)	1 (13)	1 (18)
North East	Algoma	0 (1)	0 (0)	0 (0)	0 (2)	0 (0)	6 (22)	6 (25)
	North Bay Parry Sound District	0 (2)	0 (5)	0 (0)	0 (1)	0 (0)	0 (54)	0 (62)
	Porcupine	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (28)	0 (28)
	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)	6 (142)	6 (156)
Eastern	City of Ottawa	0 (5)	0 (43)	0 (0)	0 (3)	0 (0)	0 (95)	0 (146)
	Eastern Ontario	0 (1)	0 (4)	0 (0)	0 (5)	0 (0)	1 (45)	1 (55)
	Hastings & Prince Edward Counties	0 (7)	0 (2)	0 (0)	0 (9)	0 (0)	1 (32)	1 (50)
	Kingston, Frontenac, Lennox & Addington	0 (4)	0 (5)	0 (0)	0 (1)	0 (0)	1 (31)	1 (41)
	Leeds, Grenville And Lanark District	0 (0)	0 (1)	0 (0)	0 (2)	0 (0)	1 (13)	1 (16)
	Renfrew County And District	0 (3)	0 (1)	0 (0)	0 (0)	0 (0)	0 (5)	0 (9)
	TOTAL EASTERN	0 (20)	0 (56)	0 (0)	0 (20)	0 (0)	4 (221)	4 (317)
Central East	Durham Region	1 (16)	0 (11)	0 (0)	0 (6)	0 (0)	0 (73)	1 (106)
	Haliburton, Kawartha, Pine Ridge	0 (8)	0 (9)	0 (1)	0 (6)	0 (0)	2 (47)	2 (71)
	Peel Region	0 (76)	1 (39)	0 (4)	0 (18)	0 (1)	3 (402)	4 (540)
	Peterborough County-City	0 (2)	0 (2)	0 (0)	0 (0)	0 (0)	0 (24)	0 (28)
	Simcoe Muskoka District	0 (17)	0 (9)	0 (0)	3 (15)	0 (0)	2 (198)	5 (239)
	York Region	0 (22)	1 (22)	0 (0)	0 (11)	0 (0)	1 (112)	2 (167)
	TOTAL CENTRAL EAST	1 (141)	2 (92)	0 (5)	3 (56)	0 (1)	8 (856)	14 (1151)
Toronto	Toronto	1 (170)	0 (57)	0 (1)	2 (70)	0 (3)	8 (698)	11 (999)
	TOTAL TORONTO	1 (170)	0 (57)	0 (1)	2 (70)	0 (3)	8 (698)	11 (999)
South West	Chatham-Kent	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	1 (10)
	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)	1 (44)	1 (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)	1 (19)	0 (0)	0 (9)	0 (0)	5 (70)	6 (104)
	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)	2 (17)	2 (26)
	TOTAL SOUTH WEST	0 (18)	1 (27)	0 (0)	0 (19)	0 (0)	9 (258)	10 (322)
Central West	Brant County	0 (0)	0 (5)	0 (0)	0 (1)	0 (0)	0 (20)	0 (26)
	City Of Hamilton	0 (19)	2 (42)	0 (0)	0 (5)	0 (0)	1 (202)	3 (268)
	Haldimand-Norfolk	0 (0)	0 (2)	0 (0)	0 (1)	0 (0)	0 (22)	0 (25)
	Halton Region	0 (19)	0 (19)	0 (0)	0 (5)	0 (0)	1 (132)	1 (175)
	Niagara Region	0 (9)	0 (2)	0 (0)	0 (4)	0 (0)	2 (122)	2 (137)
	Waterloo Region	0 (20)	2 (13)	0 (0)	1 (8)	0 (0)	1 (117)	4 (158)
	Wellington-Dufferin-Guelph	0 (8)	0 (4)	0 (0)	0 (11)	0 (0)	1 (61)	1 (84)
	TOTAL CENTRAL WEST	0 (75)	4 (87)	0 (0)	1 (35)	0 (0)	6 (676)	11 (873)
	TOTAL ONTARIO	2 (430)	7 (324)	0 (6)	6 (208)	0 (4)	42 (2864)	57 (3836)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/05/23].

*Includes indeterminate, untypeable and other subtypes

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Table 2. Number of hospitalizations and deaths among influenza cases during week 20 and cumulative (in brackets) for the season by age group since September 1, 2011

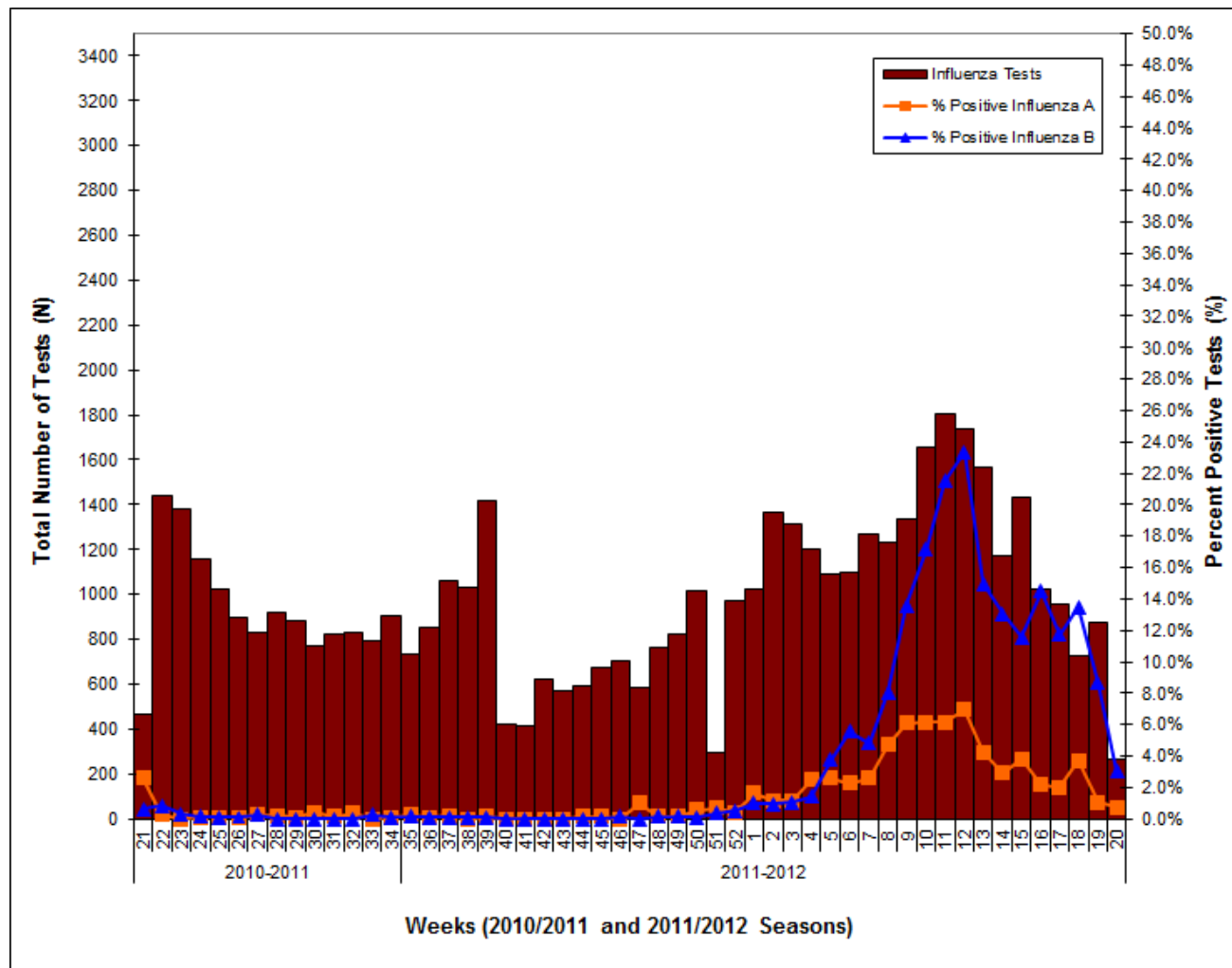
Age Group	Number of Hospitalizations	Cumulative Rate per 100,000	Number of Deaths	Cumulative Rate per 100,000
<1	6 (94)	66.39	0 (1)	0.71
1-4	5 (185)	32.45	0 (1)	0.18
5-14	6 (152)	10.17	0 (1)	0.07
15-24	1 (19)	1.05	0 (0)	0.00
25-44	0 (97)	2.64	0 (1)	0.03
45-64	8 (187)	5.07	0 (9)	0.24
65+	10 (387)	21.10	2 (54)	2.94
Total	36 (1122*)	8.49	2 (68*)	0.51

Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/05/23]. 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 20, 2012. Please note that the last version received from PHAC as of 12:00PM on May 23, 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 20

Detected viruses	Number and percent positive specimens		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza A (all)	2 (0.76)	929 (2.54)	264	36572
Influenza B	8 (3.03)	2657 (7.27)	264	36572
Parainfluenza virus	7 (3.59)	707 (2.32)	195	30426
Adenovirus	1 (0.51)	463 (1.52)	197	30401
Respiratory syncytial virus	3 (1.53)	3445 (11.16)	196	30861
Enterovirus	6 (5.22)	1129 (4.25)	115	26575
Human metapneumovirus	2 (1.03)	458 (3.34)	195	13701
Coronavirus	2 (3.45)	465 (4.71)	58	9883

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 20, 2012. Please note that the last version received from PHAC as of 12:00 PM on May 23, 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 20 and total outbreaks for the season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A (All subtypes)	1	20.0
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Combined Outbreaks [†]	1	20.0
Other organisms ^α	0	0.0
Entero/rhinovirus	0	0.0
No organism identified/reported	3	60.0
TOTAL	5	100.0
Total Respiratory Infection Outbreaks of the Season to date**		
Influenza A (All subtypes)	26	4.3
Influenza B	98	16.4
Influenza A and B	3	0.5
Parainfluenza (All types)	30	5.0
RSV	58	9.7
Combined Outbreaks [†]	61	10.2
Other organisms ^α	92	15.4
Entero/rhinovirus	112	18.7
No organism identified/reported	119	19.9
TOTAL	599	100.0
Types of Institutions – All Outbreaks **		
Long-Term Care Homes	391	65.3
Hospitals	29	4.8
Retirement Homes	71	11.9
Other	3	0.5
Not Reported	105	17.5
TOTAL	599	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/05/23]

* 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 13, 2012 – May 19, 2012

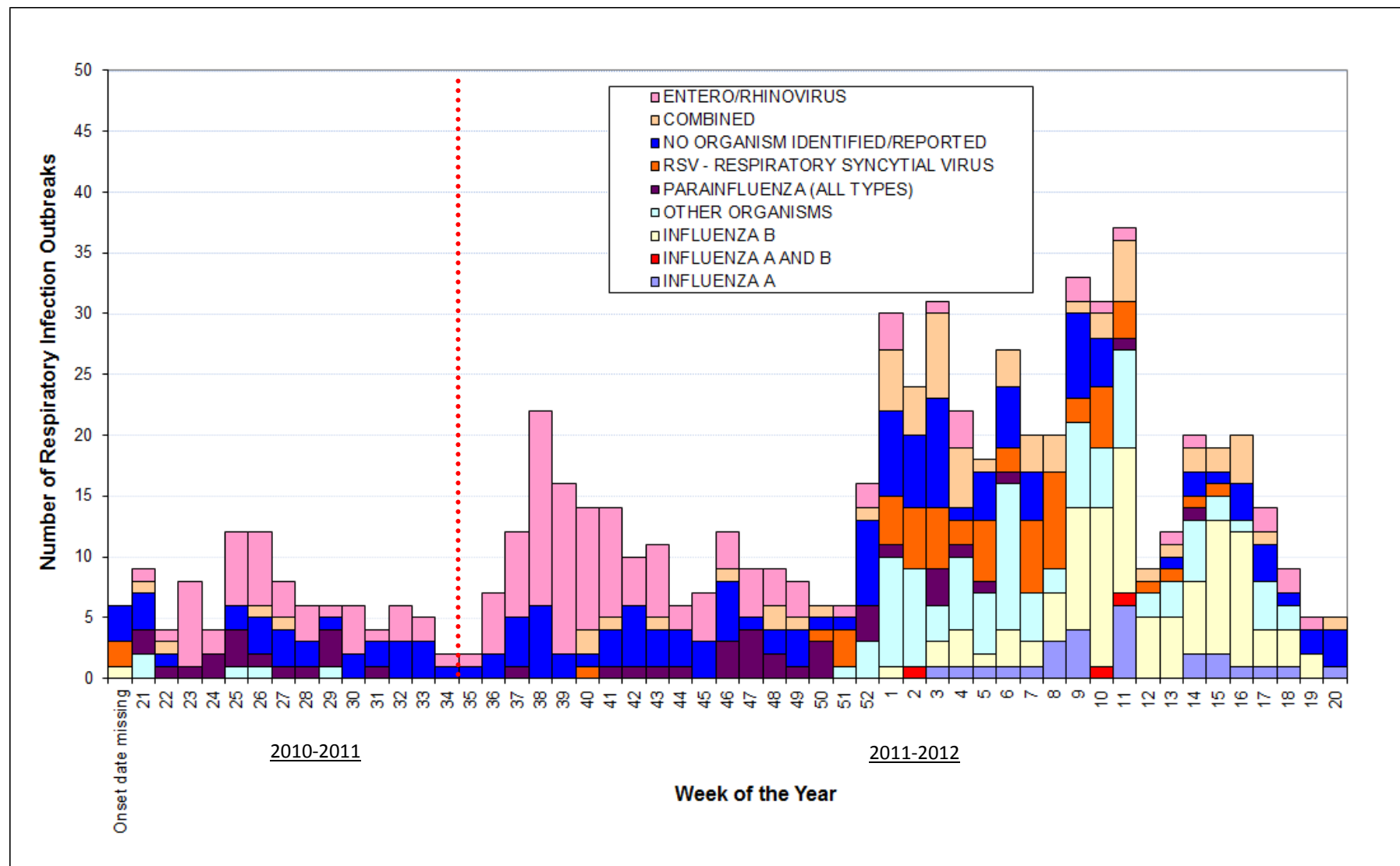
** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to week 20, 2012.

[†] 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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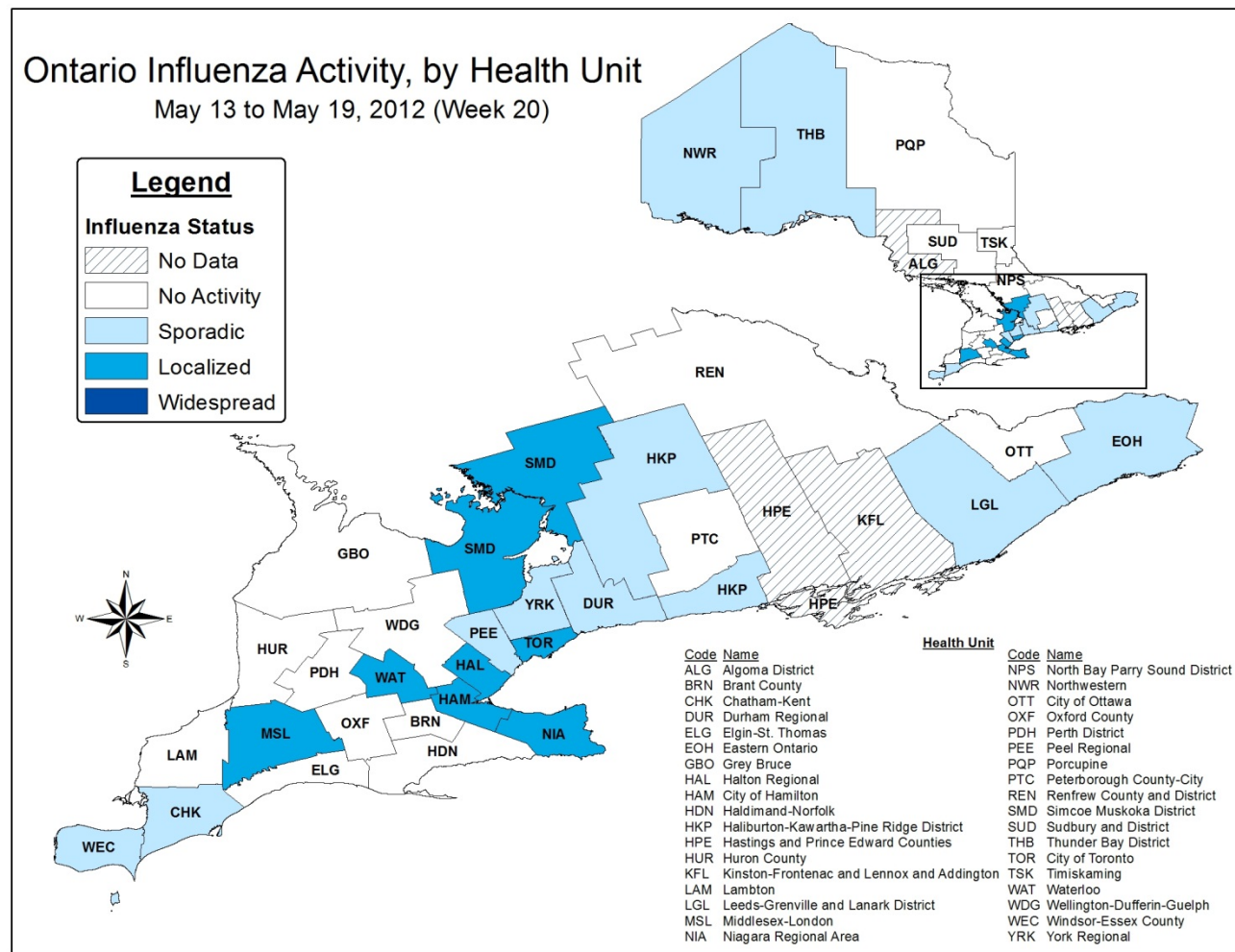
Figure 4: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including week 20 of the 2011-2012 season by causative organism



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/05/23]

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Figure 5: Influenza activity* levels in Ontario by health unit for week 20, 2012

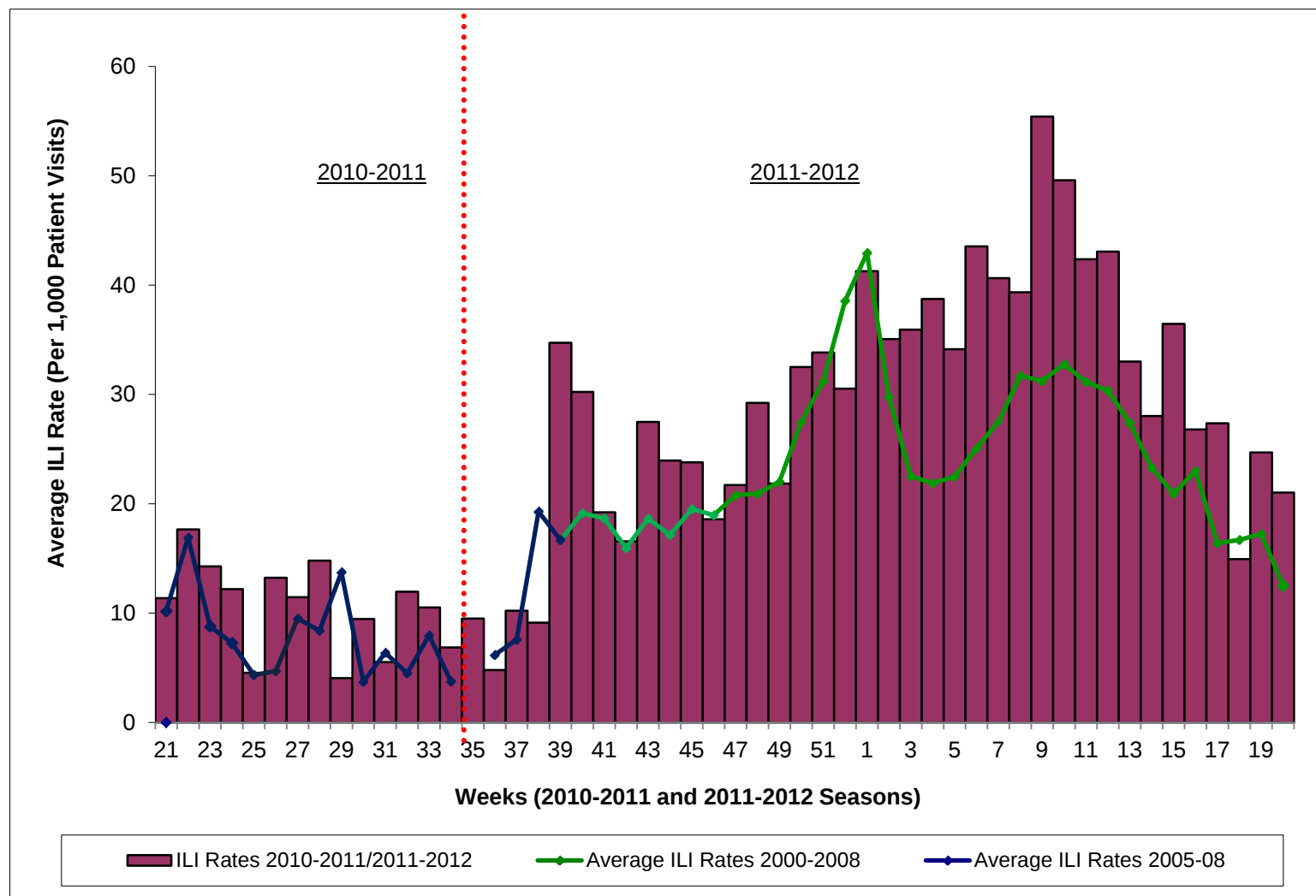


Source: PHO [Provincial Influenza Activity Report (Appendix C) Database]

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



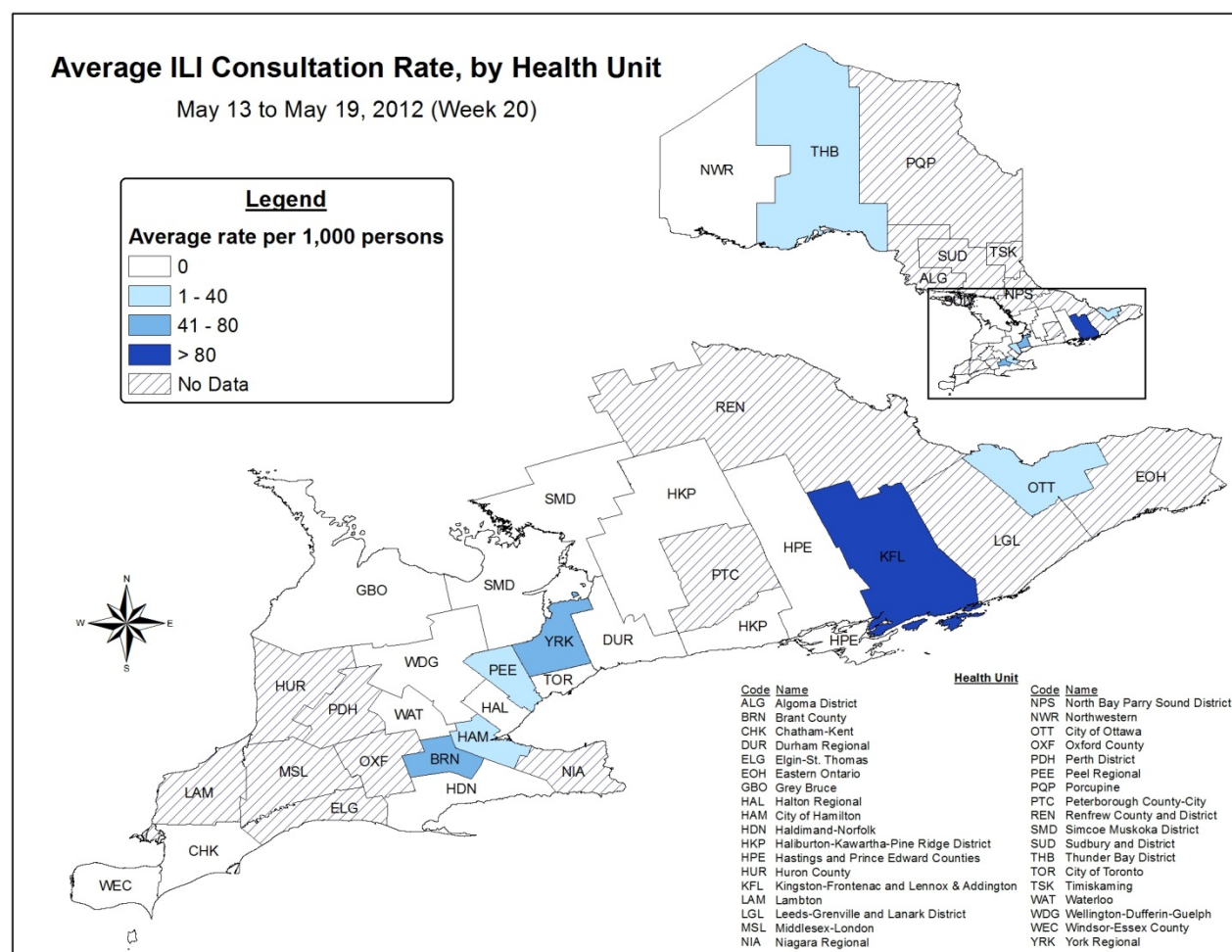
Source: Public Health Agency of Canada

* Sentinel information is reported to Public Health Agency of Canada, 41 sentinels reported in week 20.

[†] 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 20



Source: Public Health Agency of Canada

* Sentinels report ILI and patient data to the Public Health Agency of Canada; 41 sentinels reported in week 20, of which 39 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 20

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	1	5	15	4	0	25
ILI Consultation Rate (per 1,000 patient visits)	14.71	47.17	22.62	11.36	0.00	21.03

Source: Public Health Agency of Canada

* Sentinel information is reported to the Public Health Agency of Canada; 41 sentinels reported in week 20.

APPENDIX - I

Table 1: NML strain characterization of influenza isolates in Ontario and Canada, September 1, 2011 to May 23, 2012

	Ontario	Canada
Influenza A (H3N2) A/Perth/16/2009-like*	61	224
Influenza A(H1N1)pdm09 A/California/07/09-like*	137	199
Influenza B B/Brisbane/60/2008-like*	198	400
Influenza B B/Wisconsin/01/2010-like†	350	428

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

Please note that the last version received from PHAC as of 3:00PM on May 24, 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 24, 2012

	Amantadine				Oseltamivir				Zanamivir			
	Ontario		Canada		Ontario		Canada		Ontario		Canada	
Influenza strains	R	S	R	S	R	S	R	S	R	S	R	S
Influenza A (H3N2)	103	1	375	1	0	53	0	202	0	53	0	200
Influenza A(H1N1)pdm09	213	0	321	0	0	160	0	223	0	160	0	223
Influenza B	NA	NA	NA	NA	0	524	0	762	0	524	0	762

(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 3:00PM on May 24, 2012 was used.