



Ontario Influenza Bulletin | 2011-2012

SURVEILLANCE WEEK 11 (March 11, 2012 – March 17, 2012)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from March 11, 2012 to March 17, 2012 (week 11). **All data are for week 11** and data extraction and analysis for this issue of the Bulletin occurred on March 21, 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

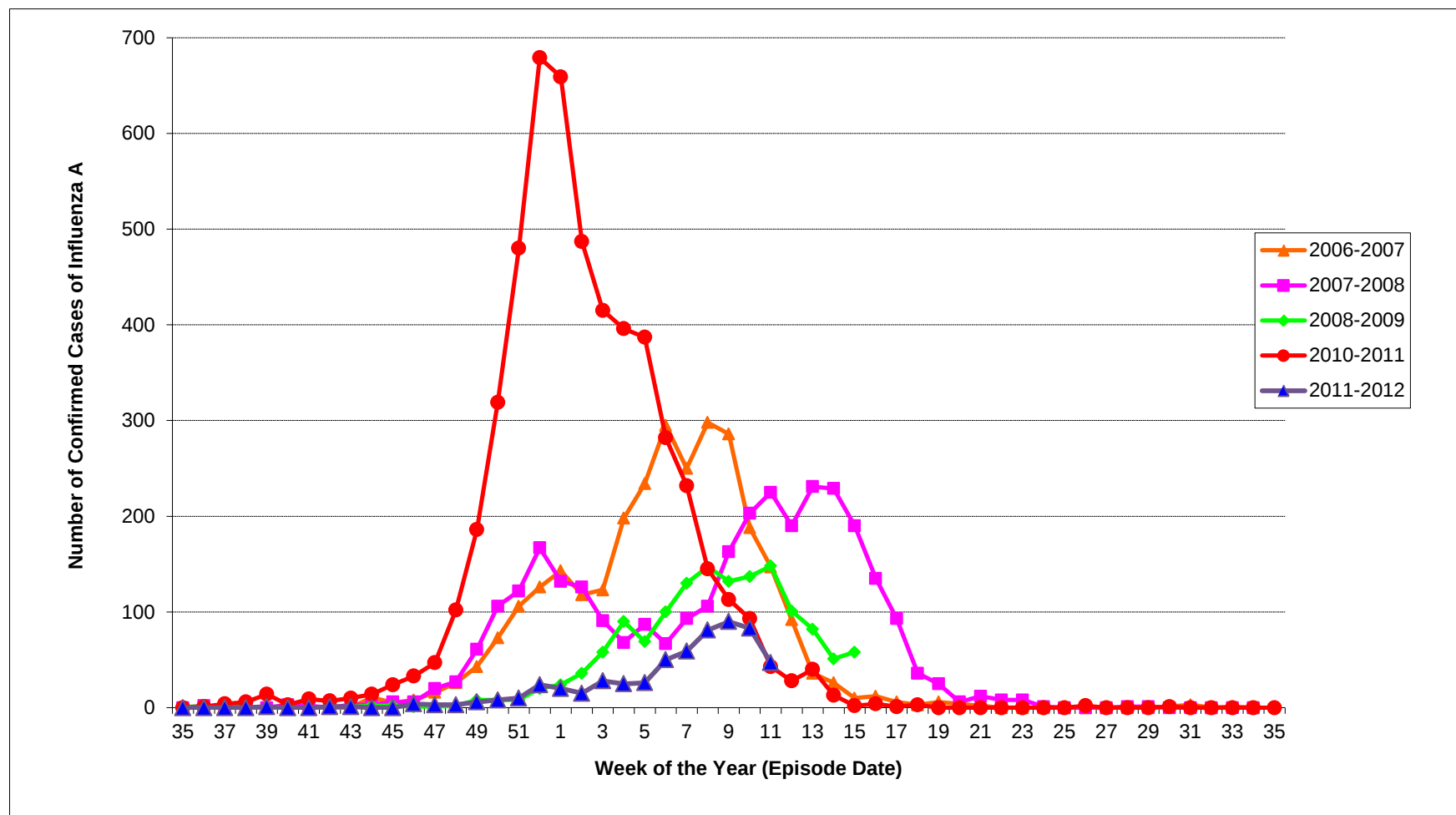
Measure of Activity	Assessment of measure compared to previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory Confirmed Influenza Cases	Higher	Five hundred and eleven (511) new influenza cases were reported* in week 11, which is higher than the number reported in week 10 (433). The percent positivity of laboratory tests for influenza in Ontario was 27.64% (6.16% for influenza A and 21.48% for influenza B) for week 11, which is higher than week 10 (23.34%) (Figure 3).
Respiratory virus activity	Influenza B activity is higher	Among all circulating respiratory viruses, influenza B had the highest percent positivity in week 11 at 21.48% (Table 3), which is higher than week 10 (17.17%).
Institutional Respiratory Infection Outbreaks	Similar	Twenty (20) new institutional respiratory outbreaks were reported for week 11, including five influenza A outbreaks. Fifty-six (56) institutional influenza outbreaks have been reported to date this season.
Influenza Activity Levels Reported by Health Units	Similar	For week 11, Central East, Central West, Eastern, South West and Toronto regions reported 'localized' level influenza activity, while the North East and North West regions reported 'sporadic' level and no influenza activity, respectively.
Influenza-Like Illness (ILI) Consultation Rate reported by Sentinels	Lower	The provincial ILI consultation rate decreased from 49.59/1,000 patient visits in week 10 to 42.37/1,000 patient visits in week 11. 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 11 compared to week 10.
Measure of Severity for Influenza		
Hospitalizations Among Lab Confirmed Cases of Influenza	Higher	There were 76 hospitalizations reported among cases from March 11 to March 17, which is higher than the number (61) reported from March 4 to March 10*.
Deaths Among Lab Confirmed Cases of Influenza	Similar	Six (6) deaths were reported from March 11 to March 17, which is lower than the number (7) reported from March 4 to March 10*.

*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 1,942 influenza cases have been reported for the 2011-2012 surveillance season to date, of which 511 were reported during week 11.
 - The majority of influenza cases reported for the 2011-2012 season to date were influenza B, which accounts for 69.6% (1352/1942) 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 17, 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 (489 cases) and adults 65 years of age and older (411 cases) account for 46.3% (900/1942) of influenza cases reported to date. The highest number of cases (365) has occurred in the 1 to 4 year old age group, which represents 18.8% of cases.
 - Among influenza cases that have been hospitalized, 32.7% (139/425) were children under 5 years old and 24.7% (105/425) were adults over the age of 65 (Table 2).
 - Since week 1, 56 institutional influenza outbreaks have been reported: 17 influenza A, 36 influenza B, and three combined A and B outbreaks.
 - For the 2011-2012 season to date, 33 cases of influenza B with myositis (muscular inflammation causing severe pain in the legs) have been reported. Thirty-one cases occurred between January 31, 2012 and March 18, 2012. Cases have been observed in eleven health units: Chatham-Kent (1), Grey Bruce (1), Eastern Ontario (2), Hastings & Prince Edward Counties (2), Halton Region (4), Peel Region (13), Simcoe-Muskoka (4), Sudbury and District (1), Toronto (3), Wellington-Dufferin-Guelph (1) and York Region (1).
 - Of the 33 influenza B cases with myositis, 23 were reported as having been hospitalized and no deaths among these cases were reported. One case reported receiving the current season's influenza vaccine.
- The cause(s) of ILI in Ontario from September 1, 2011 to March 17, 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. The World Health Organization has recommended the inclusion of this strain in the vaccine for the 2012-2013 influenza season for the Northern Hemisphere.
 - Higher than expected ILI consultation rates for week 11 were driven by ILI in individuals less than 20 years of age.

Figure 1: Confirmed cases of influenza A in Ontario by episode date reported from Sep. 1, 2006 to Mar. 17, 2012[†]



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/22].

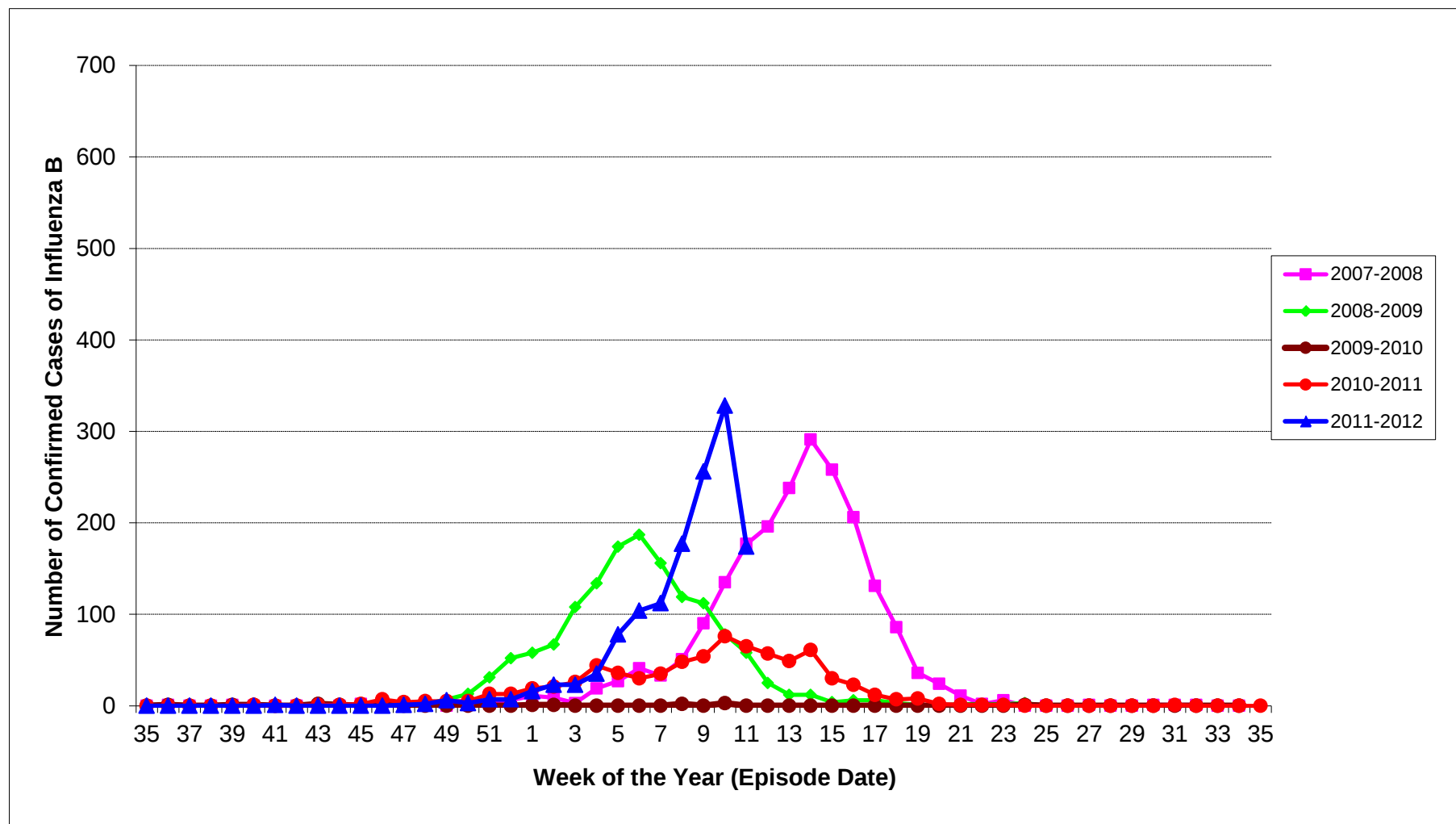
[†] Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

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. 17, 2012[†]



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/22].

[†] 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.

Ontario Influenza Bulletin, 2011-2012 (September 1, 2011 – March 17, 2012)

Table 1: Confirmed cases with a reported date during week 11 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 (1)	0 (0)	0 (1)	0 (0)	0 (1)	0 (3)
	TOTAL NORTH WEST	0 (0)	0 (1)	0 (0)	0 (1)	0 (0)	0 (1)	0 (3)
North East	Algoma	0 (0)	0 (0)	0 (0)	1 (2)	0 (0)	1 (2)	2 (4)
	North Bay Parry Sound District	0 (2)	0 (4)	0 (0)	0 (1)	0 (0)	5 (21)	5 (28)
	Porcupine	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (4)	2 (4)
	Sudbury & District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	6 (12)	6 (12)
	Timiskaming	0 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)	0 (3)
	TOTAL NORTH EAST	0 (4)	0 (4)	0 (0)	1 (3)	0 (0)	14 (40)	15 (51)
Eastern	City of Ottawa	0 (3)	8 (26)	0 (0)	0 (1)	0 (0)	8 (34)	16 (64)
	Eastern Ontario	0 (1)	1 (3)	0 (0)	2 (4)	0 (0)	3 (14)	6 (22)
	Hastings & Prince Edward Counties	0 (1)	1 (1)	0 (0)	5 (8)	0 (0)	6 (11)	12 (21)
	Kingston, Frontenac, Lennox & Addington	0 (3)	0 (2)	0 (0)	0 (0)	0 (0)	4 (6)	4 (11)
	Leeds, Grenville And Lanark District	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (4)	1 (4)
	Renfrew County And District	0 (3)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)	1 (4)
	TOTAL EASTERN	0 (11)	10 (32)	0 (0)	7 (13)	0 (0)	23 (70)	40 (126)
Central East	Durham Region	2 (10)	1 (4)	0 (0)	0 (5)	0 (0)	5 (19)	8 (38)
	Haliburton, Kawartha, Pine Ridge	0 (2)	0 (4)	0 (1)	0 (2)	0 (0)	5 (14)	5 (23)
	Peel Region	6 (52)	9 (28)	0 (3)	0 (12)	0 (1)	45 (220)	60 (316)
	Peterborough County-City	1 (1)	0 (1)	0 (0)	0 (0)	0 (0)	15 (20)	16 (22)
	Simcoe Muskoka District	2 (6)	1 (6)	0 (0)	0 (8)	0 (0)	34 (124)	37 (144)
	York Region	0 (9)	1 (11)	0 (0)	1 (6)	0 (0)	19 (43)	21 (69)
	TOTAL CENTRAL EAST	11 (80)	12 (54)	0 (4)	1 (33)	0 (1)	123 (440)	147 (612)
Toronto	Toronto	21 (128)	4 (45)	0 (0)	4 (35)	1 (4)	96 (358)	126 (570)
	TOTAL TORONTO	21 (128)	4 (45)	0 (0)	4 (35)	1 (4)	96 (358)	126 (570)
South West	Chatham-Kent	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (2)	1 (2)
	Elgin-St. Thomas	0 (1)	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)	0 (2)
	Grey Bruce	3 (4)	0 (0)	0 (0)	0 (0)	0 (0)	6 (7)	9 (11)
	Huron County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (4)	2 (4)
	Lambton County	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (6)	1 (6)
	Middlesex-London	0 (1)	2 (9)	0 (0)	1 (9)	0 (0)	7 (18)	10 (37)
	Oxford County	0 (0)	2 (4)	0 (0)	0 (0)	0 (0)	4 (11)	6 (15)
	Perth District	2 (2)	0 (1)	0 (0)	1 (2)	0 (0)	11 (22)	14 (27)
	TOTAL SOUTH WEST	5 (8)	4 (14)	0 (0)	3 (13)	0 (0)	32 (71)	44 (106)
Central West	Brant County	0 (0)	1 (3)	0 (0)	0 (0)	0 (0)	3 (8)	4 (11)
	City Of Hamilton	2 (9)	1 (27)	0 (0)	0 (1)	0 (0)	39 (129)	42 (166)
	Haldimand-Norfolk	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	5 (11)	5 (12)
	Halton Region	1 (10)	2 (11)	0 (0)	0 (2)	0 (0)	25 (92)	28 (115)
	Niagara Region	1 (4)	0 (1)	0 (0)	0 (2)	0 (0)	27 (58)	28 (65)
	Waterloo Region	5 (9)	1 (9)	0 (0)	0 (2)	0 (0)	20 (57)	26 (77)
	Wellington-Dufferin-Guelph	0 (1)	0 (1)	0 (0)	0 (9)	0 (0)	6 (17)	6 (28)
	TOTAL CENTRAL WEST	9 (33)	5 (53)	0 (0)	0 (16)	0 (0)	125 (372)	139 (474)
	TOTAL ONTARIO	46 (264)	35 (203)	0 (4)	16 (114)	1 (5)	413 (1352)	511 (1942)

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/22].

*Includes indeterminate, untypeable and other subtypes

Ontario Influenza Bulletin, 2011-2012 (September 1, 2011 – March 17, 2012)

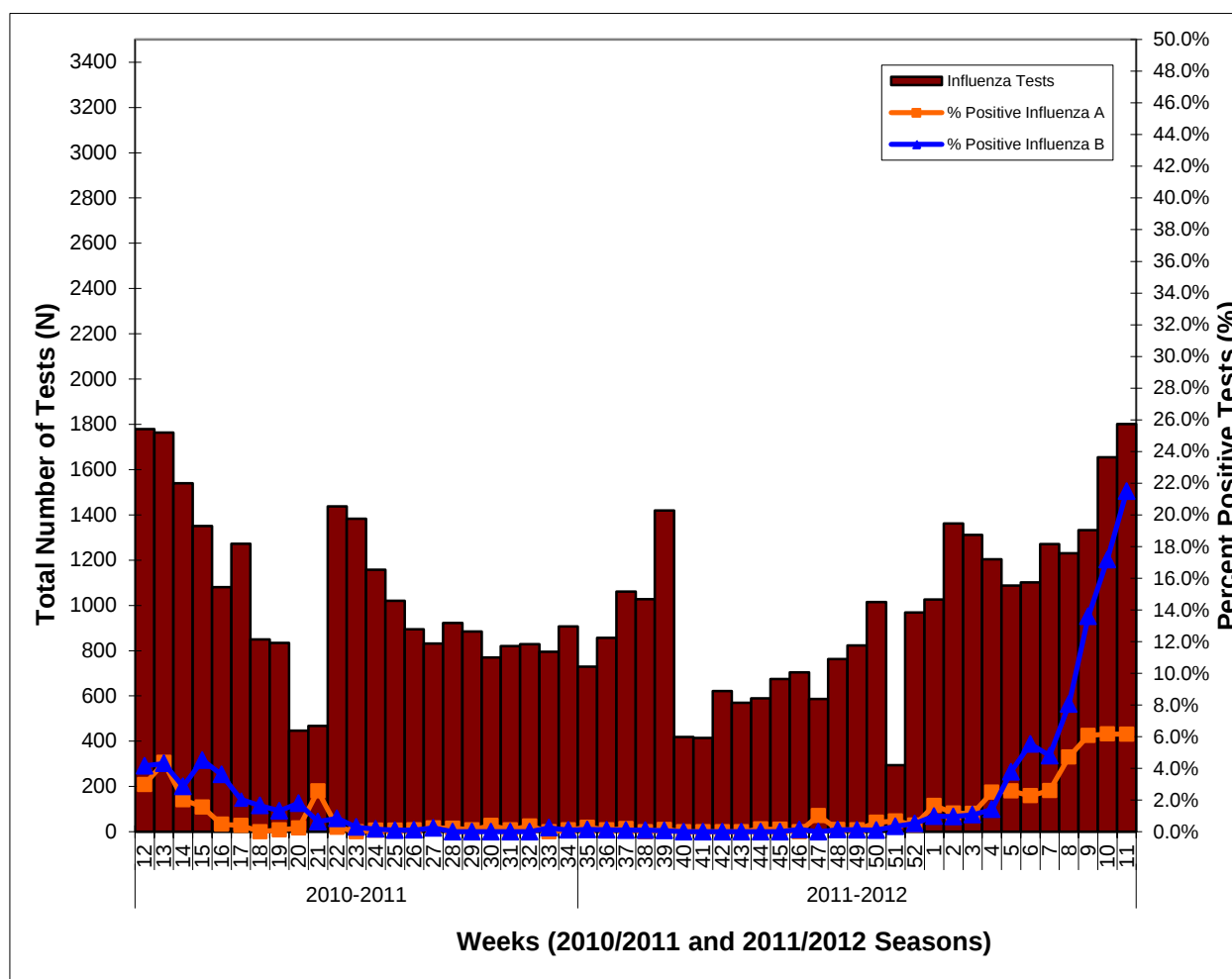
Table 2. Number of hospitalizations and deaths among influenza cases during week 11 and cumulative (in brackets) for the season by age group since September 1, 2011

Age Group	Number of Hospitalizations	Cumulative Rate per 100,000	Number of Deaths	Cumulative Rate per 100,000
<1	6 (45)	31.78	1 (1)	0.71
1-4	18 (94)	16.49	0 (1)	0.18
5-14	12 (72)	4.82	0 (0)	0.00
15-24	0 (6)	0.33	0 (0)	0.00
25-44	10 (45)	1.22	0 (0)	0.00
45-64	13 (58)	1.57	2 (3)	0.08
65+	17 (105)	5.73	3 (15)	0.82
Total	76 (425)	3.22	6 (20)	0.15

Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/21]. Population data obtained from IntelliHEALTH Ontario, retrieved by Public Health Ontario [2012/01/13].

Ontario Influenza Bulletin, 2011-2012 (September 1, 2011 – March 17, 2012)

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 11, 2012. Please note that the last version received from PHAC as of 11:00AM on March 21, 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/>

Ontario Influenza Bulletin, 2011-2012 (September 1, 2011 – March 17, 2012)

Table 3. Number of respiratory specimens tested by all methods for influenza and other respiratory viruses and percent positivity, week 11

Detected viruses	Number and percent positive specimens		Total number of specimens tested	
	Current n (%)	Cumulative n (%)	Current n	Cumulative n
Influenza A (all)	111 (6.16)	568 (2.16)	1802	26248
Influenza B	387 (21.48)	1231 (4.69)	1802	26248
Parainfluenza virus	12 (0.81)	657 (3.01)	1481	21837
Adenovirus	23 (1.55)	369 (1.69)	1481	21837
Respiratory syncytial virus	145 (9.65)	3021 (13.6)	1503	22206
Enterovirus	15 (1.14)	880 (4.65)	1313	18929
Human metapneumovirus	55 (8.63)	234 (2.32)	637	10090
Coronavirus	31 (10.03)	352 (4.9)	309	7188

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 11, 2012. Please note that the last version received from PHAC as of 11:00AM on March 21, 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/>

Ontario Influenza Bulletin, 2011-2012 (September 1, 2011 – March 17, 2012)

Table 4: Institutional respiratory infection outbreaks in Ontario: new outbreaks* in week 11 and total outbreaks for the season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A (All subtypes)	5	25.0
Influenza B	1	5.0
Influenza A and B	1	5.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Combined Outbreaks [†]	2	10.0
Other organisms ^α	0	0.0
Entero/rhinovirus	0	0.0
No organism identified/reported	11	55.0
TOTAL	20	100.0
Total Respiratory Infection Outbreaks of the Season to date**	N	
Influenza A (All subtypes)	17	3.9
Influenza B	36	8.2
Influenza A and B	3	0.7
Parainfluenza (All types)	28	6.3
RSV	42	9.5
Combined Outbreaks [†]	40	9.1
Other organisms ^α	56	12.7
Entero/rhinovirus	102	23.1
No organism identified/reported	117	26.5
TOTAL	441	100.0
Types of Institutions – All Outbreaks **		
Long-Term Care Homes	273	61.9
Hospitals	25	5.7
Retirement Homes	49	11.1
Other	1	0.2
Not Reported	93	21.1
TOTAL	441	100.0

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2012/03/21]

* 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 11, 2012 – March 17, 2012

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to week 11, 2012.

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

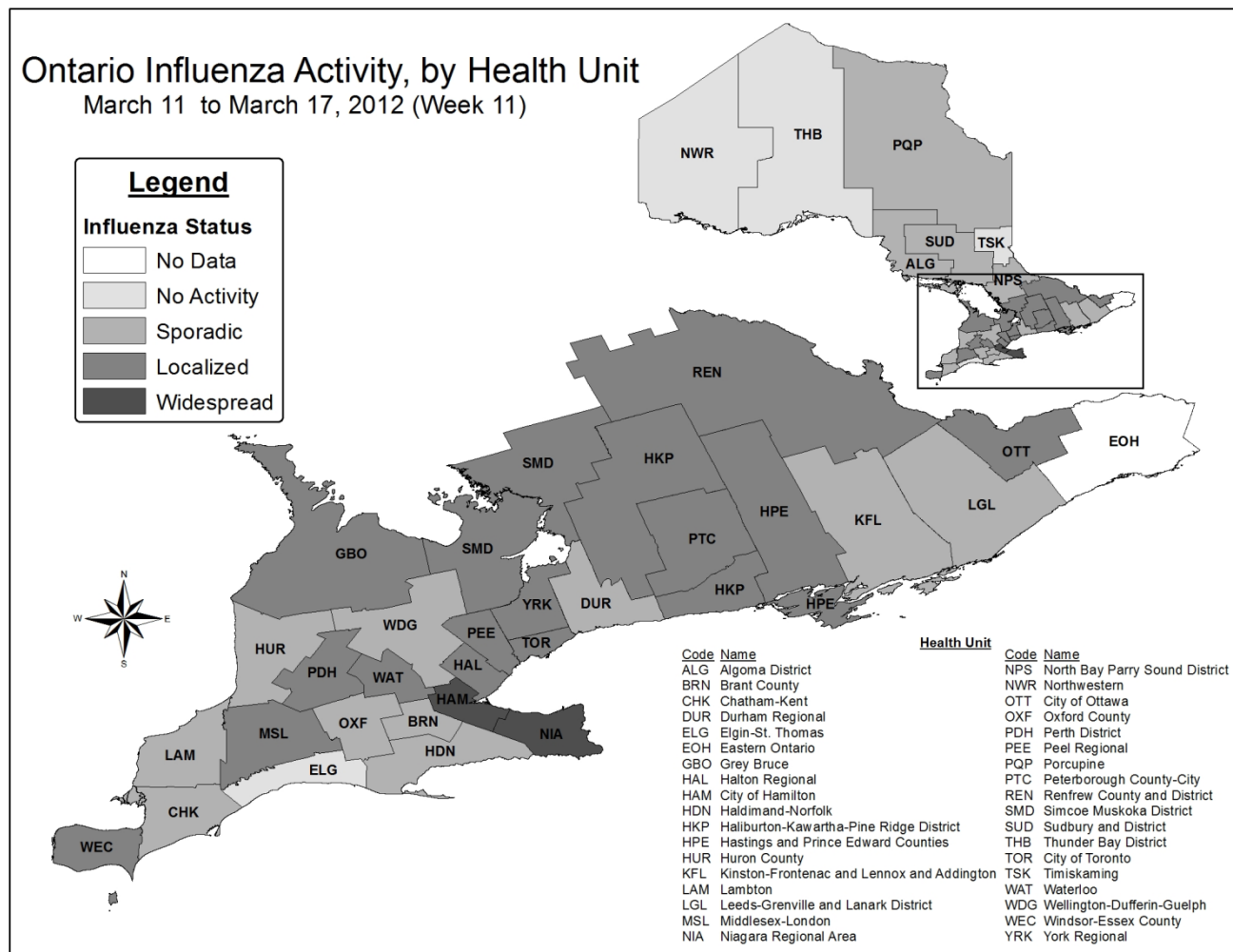
^α Other organisms include outbreaks involving other aetiological agents, such as human metapneumovirus, adenovirus and coronavirus.

Figure 4: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total outbreaks up to and including week 11 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 [2012/03/21]

Ontario Influenza Bulletin, 2011-2012 (September 1, 2011 – March 17, 2012)

Figure 5: Influenza activity* levels in Ontario by health unit for week 11, 2012

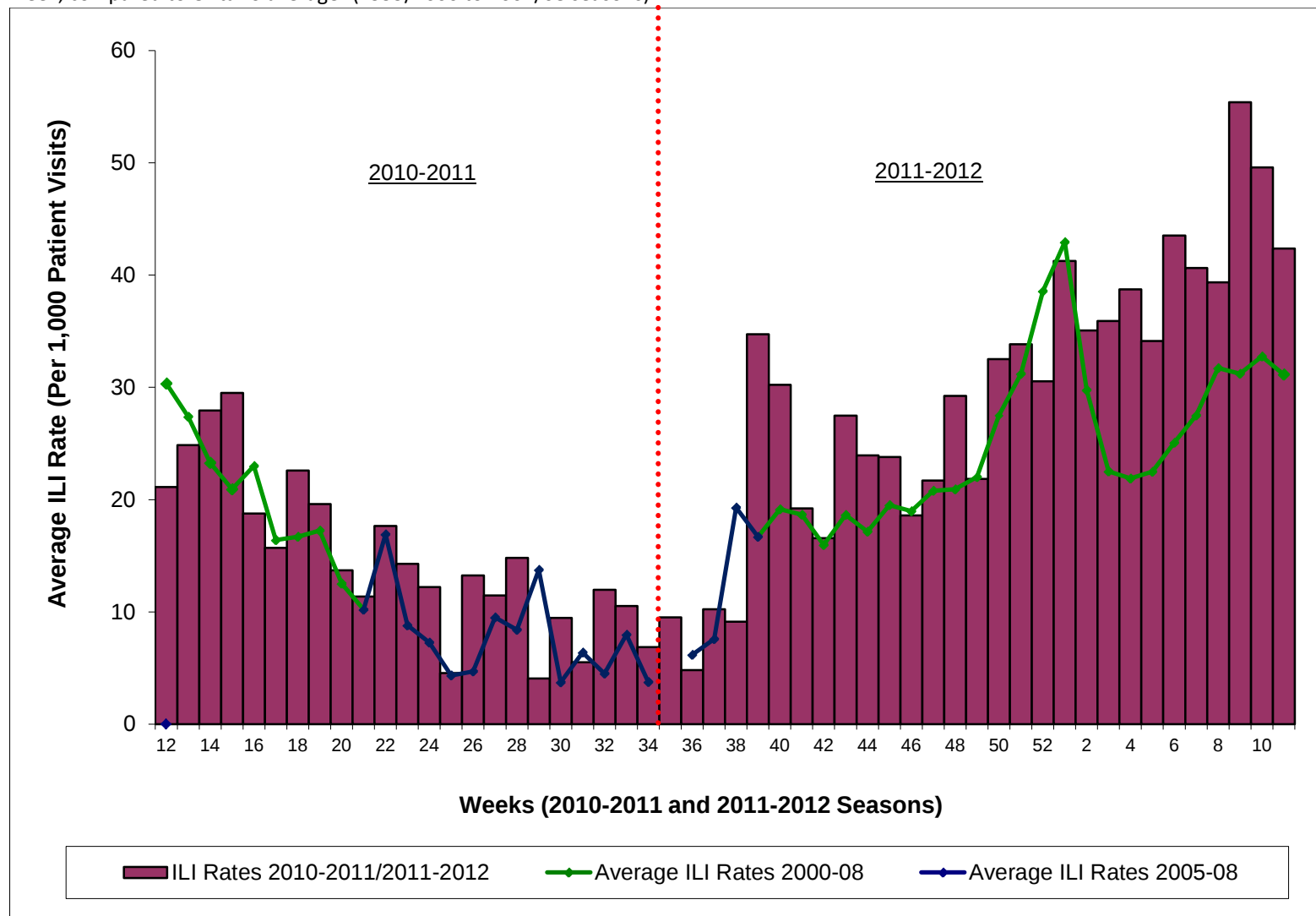


Source: PHO [Provincial Influenza Activity Report (Appendix C) Database]

* 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](#).

Ontario Influenza Bulletin, 2011-2012 (September 1, 2011 – March 17, 2012)

Figure 6: Average ILI consultation rate (per 1,000 patient visits) reported by sentinels* in Ontario up to week 11 of the 2011-2012 surveillance season, by report week, compared to Ontario average[†] (1999/2000 to 2007/08 seasons)



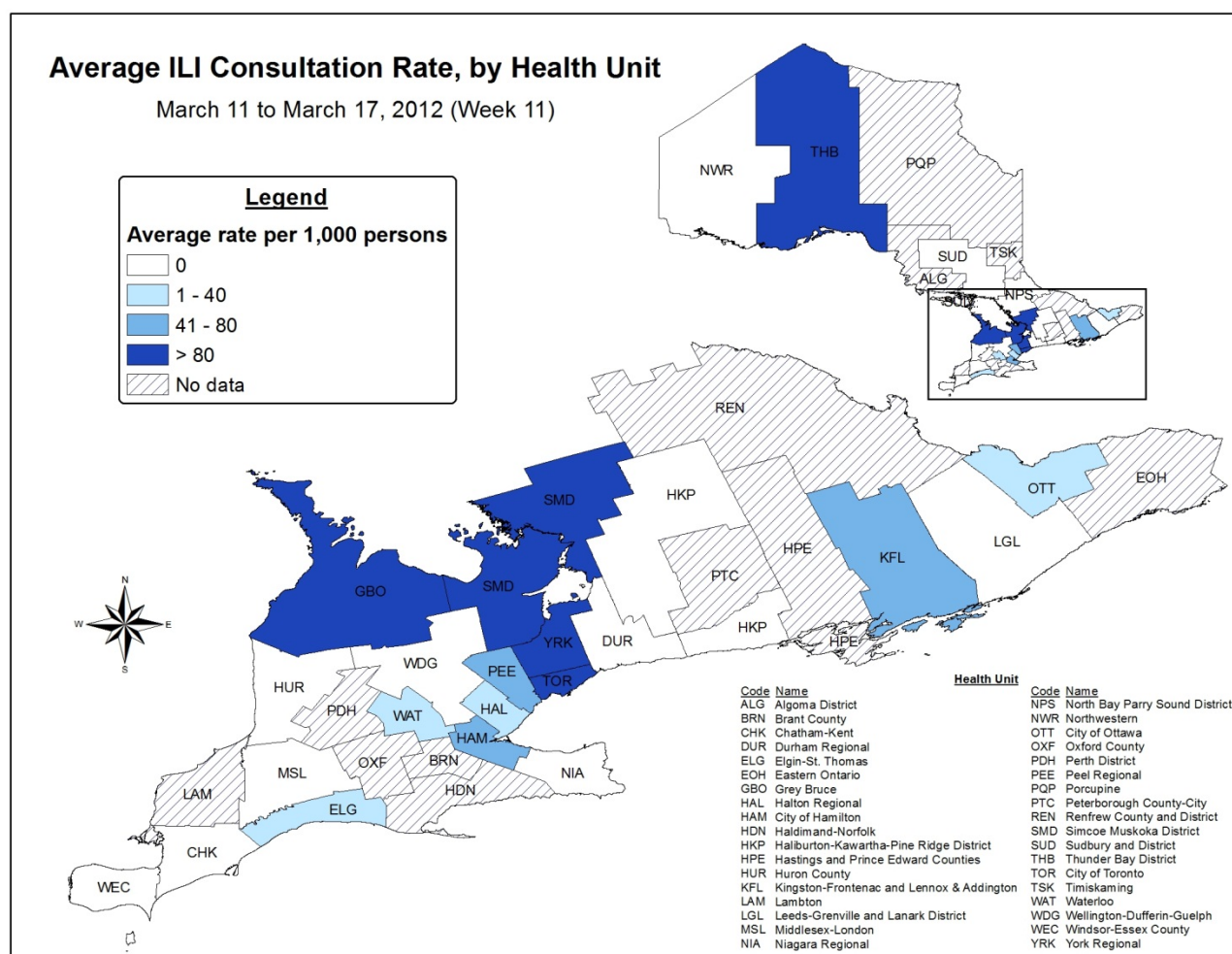
Source: Public Health Agency of Canada

* Sentinel information is reported to Public Health Agency of Canada, 70 sentinels reported in week 11.

[†] 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.

Ontario Influenza Bulletin, 2011-2012 (September 1, 2011 – March 17, 2012)

Figure 7: Average ILI consultation rate (per 1,000 patient visits) by health unit as reported by sentinels * in Ontario, for week 11



Source: Public Health Agency of Canada

* Sentinels report ILI and patient data to the Public Health Agency of Canada; 70 sentinels reported in week 11, of which 67 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 11

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
Number of ILI Consultations	14	20	28	11	0	73
ILI Consultation Rate (per 1,000 patient visits)	128.44	123.46	28.00	24.34	0.00	42.37

Source: Public Health Agency of Canada

* Sentinel information is reported to the Public Health Agency of Canada; 70 sentinels reported in week 11.

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.

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.