

SURVEILLANCE WEEK 15 (April 6, 2008– April 12, 2008)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from April 6, 2008-April 12, 2008, (Week 15). The analysis for this issue occurred on Thursday April 17, 2008, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during week 15, 2008 was lower than week 14, 2008. There were 129 confirmed cases of influenza A and 132 confirmed cases of influenza B reported through iPHIS from health units. There were 9 new reports of institutional influenza outbreaks. For week 15, the highest level of influenza activity was 'widespread' reported from Toronto, while the remaining health regions reported 'localized' activity with the exception of North East, which reported 'sporadic' activity.

In Canada for week 14, influenza activity increased with the majority of provinces having reported localized or widespread activity in at least one of their surveillance regions this week (with the exception of the Territories and NL). Widespread influenza activity was reported by 2 regions (in BC and QC) and localized influenza activity by 25 regions (the highest number reported this season to date). Six regions reported no activity and 20 reported sporadic activity. Note: No data was received from the Toronto region in Ontario this week.[†]

Outbreak Data Entry Reminder:

Please ensure when entering confirmed institutional outbreaks using the iPHIS summary outbreak functionality, that the number of cases is entered along with the aetiologic agent (if known). This is particularly important for influenza outbreaks. This enables us to provide you with the most accurate and timely description of influenza activity in Ontario.

Please note that the GIS map for influenza activity levels by health unit has been replaced for this week by a table (Table 5, page 8). We apologize for the inconvenience.

For a definition of influenza-like illness (ILI) activity levels and links to websites providing current influenza information from other sources, please refer to the attached Appendix- I. If you would like to provide feedback on the Bulletin, please contact Christine D'Souza (christine.dsouza1@ontario.ca, 416-212-5323) or Anne-Luise Winter (anne-luise.winter@ontario.ca, 416-327-7301).

Table 1: Summary of confirmed influenza cases and institutional influenza outbreaks by health region (Week 15, 2008).

Confirmed influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	7	12	38	39	10	23	129
Influenza B	0	5	11	40	45	5	26	132
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	0	12	23	78	84	15	49	261
Institutional influenza outbreaks‡	0	0	1	3	1	2	2	9

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [17/04/2008].

* Includes reports of confirmed influenza through iPHIS, as well as cases in institutional outbreaks, with dates of onset in the surveillance period.

† These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Week 14, 2008.

‡ Confirmed outbreaks in institutions with onset date of symptoms during the surveillance period.

Table 2: Confirmed cases of influenza by health unit & health region, with an episode date[†] during Week 15, 2008

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	0	0	0
	Thunder Bay District	0	0	0
	TOTAL NORTH WEST	0	0	0
North East	Algoma	1	1	2
	North Bay Parry Sound District	5	0	5
	Porcupine	0	0	0
	Sudbury & District	1	3	4
	Timiskaming	0	1	1
	TOTAL NORTH EAST	7	5	12
Eastern	City of Ottawa	4	6	10
	Eastern Ontario	3	2	5
	Hastings & Prince Edward Counties	2	0	2
	Kingston, Frontenac, Lennox & Addington	0	0	0
	Leeds, Grenville And Lanark District	3	3	6
	Renfrew County And District	0	0	0
	TOTAL EASTERN	12	11	23
Central East	Durham Region	3	0	3
	Haliburton, Kawartha, Pine Ridge	0	4	4
	Peel Region	10	13	23
	Peterborough County-City	6	5	11
	Simcoe Muskoka District	15	13	28
	York Region	4	5	9
	TOTAL CENTRAL EAST	38	40	78
Toronto	Toronto	39	45	84
	TOTAL TORONTO	39	45	84
South West	Chatham-Kent	0	0	0
	Elgin-St. Thomas	0	0	0
	Grey Bruce	2	0	2
	Huron County	5	1	6
	Lambton County	0	1	1
	Middlesex-London	1	1	2
	Oxford County	1	0	1
	Perth District	1	1	2
	Windsor-Essex County	0	1	1
	TOTAL SOUTHWEST	10	5	15
Central West	Brant County	0	1	1
	City Of Hamilton	12	9	21
	Haldimand-Norfolk	0	0	0
	Halton Region	3	6	9
	Niagara Region	3	0	3
	Waterloo Region	3	6	9
	Wellington-Dufferin-Guelph	2	4	6
	TOTAL CENTRAL WEST	23	26	49
	TOTAL ONTARIO	129	132	261

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [17/04/2008].

[†] 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)

Table 3: Cumulative* confirmed cases of influenza by health unit & health region with an episode date[†] between September 1, 2007 – April 12, 2008

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	30	0	30
	Thunder Bay District	19	1	20
	TOTAL NORTH WEST	49	1	50
North East	Algoma	25	9	34
	North Bay Parry Sound District	46	25	71
	Porcupine	9	1	10
	Sudbury & District	15	13	28
	Timiskaming	9	11	20
	TOTAL NORTH EAST	104	59	163
Eastern	City Of Ottawa	55	84	139
	Eastern Ontario	16	23	39
	Hastings & Prince Edward Counties	17	12	29
	Kingston, Frontenac, Lennox & Addington	25	15	40
	Leeds, Grenville And Lanark District	9	9	18
	Renfrew County And District	5	10	15
	TOTAL EASTERN	127	153	280
Central East	Durham Region	68	32	100
	Haliburton, Kawartha, Pine Ridge	57	48	105
	Peel Region	309	133	442
	Peterborough County-City	48	49	97
	Simcoe Muskoka District	120	54	174
	York Region	102	61	163
	TOTAL CENTRAL EAST	704	377	1,081
Toronto	Toronto	726	421	1,147
	TOTAL TORONTO	726	421	1,147
South West	Chatham-Kent	11	6	17
	Elgin-St. Thomas	1	0	1
	Grey Bruce	47	17	64
	Huron County	65	12	77
	Lambton County	24	8	32
	Middlesex-London	42	9	51
	Oxford County	24	4	28
	Perth District	23	20	43
	Windsor-Essex County	22	10	32
	TOTAL SOUTHWEST	259	86	345
Central West	Brant County	6	10	16
	City Of Hamilton	193	81	274
	Haldimand-Norfolk	16	4	20
	Halton Region	96	39	135
	Niagara Region	71	12	83
	Waterloo Region	116	50	166
	Wellington-Dufferin-Guelph	60	26	86
	TOTAL CENTRAL WEST	558	222	780
	TOTAL ONTARIO	2,527	1,319	3,846

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [17/04/2008].

* Cumulative case counts include late reports and records that are otherwise reconciled. Therefore, cumulative counts may not equal new cases plus previous cumulative value.

[†] 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 that one of the cases of influenza reported from Simcoe Muskoka District represents a case co-infected with Influenza A & B

Influenza Subtype(s):

During week 15, 4822 isolates were received by the Public Health Agency of Canada, with 418 testing positive for influenza A and 462 for influenza B. Among the reported influenza A isolates, 213 were from Ontario (51.0%), 101 from Quebec (24.2%), and 37 from Alberta (8.9%), and Nova Scotia reporting 18 (4.3%). Among the reported influenza B isolates, 231 were from Ontario (50.0%), 121 from Quebec (26.2%), 38 (8.2%) from New Brunswick and 20 from Alberta (4.3%).*

Antigenic Characterization:

The National Microbiology Laboratory (NML) has characterized 1,022 influenza viruses for the 2007-2008 influenza season: 432 (42%) A(H1N1), 135 (13%) A(H3N2) and 455 (45%) B viruses. Of the 432 influenza A(H1N1) viruses characterized, 416 (96%) were antigenically similar to A/Solomon Islands/3/2006 and 16 (4%) were antigenically similar to A/Brisbane/59/2007. Of the 135 influenza A(H3N2) viruses characterized, 5 (4%) were antigenically similar to A/Wisconsin/67/2005 and 130 (96%) were antigenically similar to A/Brisbane/10/2007. One of the 5 A/Wisconsin-like viruses had reduced titer to A/Wisconsin/67/2005 reference antiserum. Of the 455 influenza B isolates characterized, 7 (2%) were antigenically similar to B/Malaysia/2506/2004 and 448 (98%) were antigenically similar to B/Florida/4/2006 (belonging to the B/Yamagata lineage).**

Antiviral Resistance:

Since the start of the season, the NML has tested 762 influenza A isolates (500 H1N1 and 262 H3N2) for amantadine resistance and found that 260 (99%) of the 262 H3N2 isolates were resistant to amantadine and 5 (1%) of 500 H1N1 isolates were resistant.

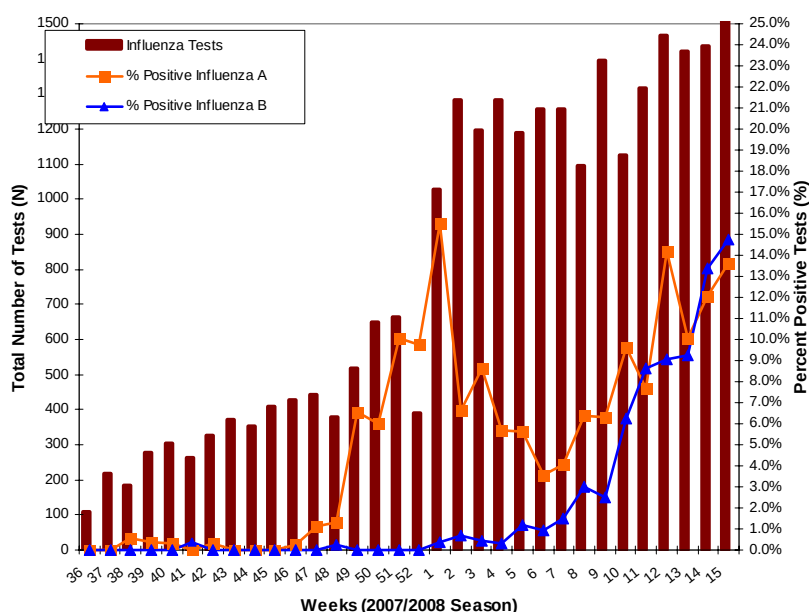
The NML has also tested 943 influenza isolates (428 A/H1N1, 123 A/H3N2 & 392 B) for oseltamivir (Tamiflu) resistance and found that 87 (20.3%) of the 428 H1N1 isolates tested were resistant to oseltamivir. The resistant isolates were from NL, NS, NB, QC, ON, MB, AB and BC. These oseltamivir resistant strains remain sensitive to the antiviral amantadine.

The WHO recommends that the influenza vaccine to be used in the 2008-2009 season for the northern hemisphere contain the following: an A/Brisbane/59/2007 (H1N1)-like virus; an A/Brisbane/10/2007 (H3N2)-like virus; and a B/Florida/4/2006-like virus. http://www.who.int/csr/disease/influenza/recommendations2008_9north/en/index.html

* These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada and do not include data from late reports to PHAC: Week 15, 2008

** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Week 14, 2008.

Figure 1: Total number of influenza tests performed and percent of positive tests in Ontario reported to the Centre for Immunization and Respiratory Infectious Diseases (CIRID), by report week*.



Source: Public Health Agency of Canada

* Total numbers reported include late reports; 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/>

Table 4a: Institutional respiratory infection outbreaks in Ontario: New Outbreaks* in Week 15 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A	4	21.1
Influenza B	5	26.3
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	4.8
Other organisms	0	0.0
No organism identified	10	52.6
TOTAL	19	100
Total Respiratory Infection Outbreaks of the Season to date**	N	% (of outbreaks)
Influenza A	105	17.3
Influenza B	87	14.4
Influenza A and B	8	1.3
Parainfluenza (All types)	32	5.3
RSV	36	5.9
Combined Outbreaks [†]	0	0.0
Other organisms	24	4.0
No organism identified	314	51.8
TOTAL	606	100
Types of Institutions (All Outbreaks) **	N	% (of outbreaks)
Long-Term Care Homes	339	55.9
Hospitals	28	4.6
Retirement Homes	58	9.6
Other	8	1.3
Unknown	173	28.6
TOTAL	606	100

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [17/04/2008]

* New outbreaks are those in which the date of onset of illness in the first case occurred and recorded through iPHIS in the current surveillance period; i.e. April 6, 2008 – April 12, 2008

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – April 12, 2008

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

Table 4b: Outbreak Related Complications in institutional respiratory infection outbreaks in Ontario during the Surveillance Season*

Outbreak Related Complications (All Outbreaks)	N	% (of total cases)
Total Cases		
Residents	7221	72.4
Patients	407	4.1
Staff	2314	23.2
Total Cases	9968	100
Deaths		% (of cases per role)
Residents	186	2.6
Patients	13	3.2
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	244	3.8
Patients	13	3.2
Staff	6	0.3
Hospitalizations		% (of cases per role)
Residents	330	4.6
Staff	3	0.1
Outbreak Related Complications (Influenza Outbreaks)	N	% (of total cases)
Total Cases		
Residents	2312	72.1
Patients	111	3.5
Staff	765	23.9
Total Cases	3208	100
Deaths		% (of cases per role)
Residents	82	3.6
Patients	4	3.6
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	90	3.9
Patients	6	5.4
Staff	3	0.4
Hospitalizations		% (of cases per role)
Residents	151	6.5
Staff	2	0.3

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [17/04/2008]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – April 12, 2008

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2007 – April 12, 2008 by causative organism

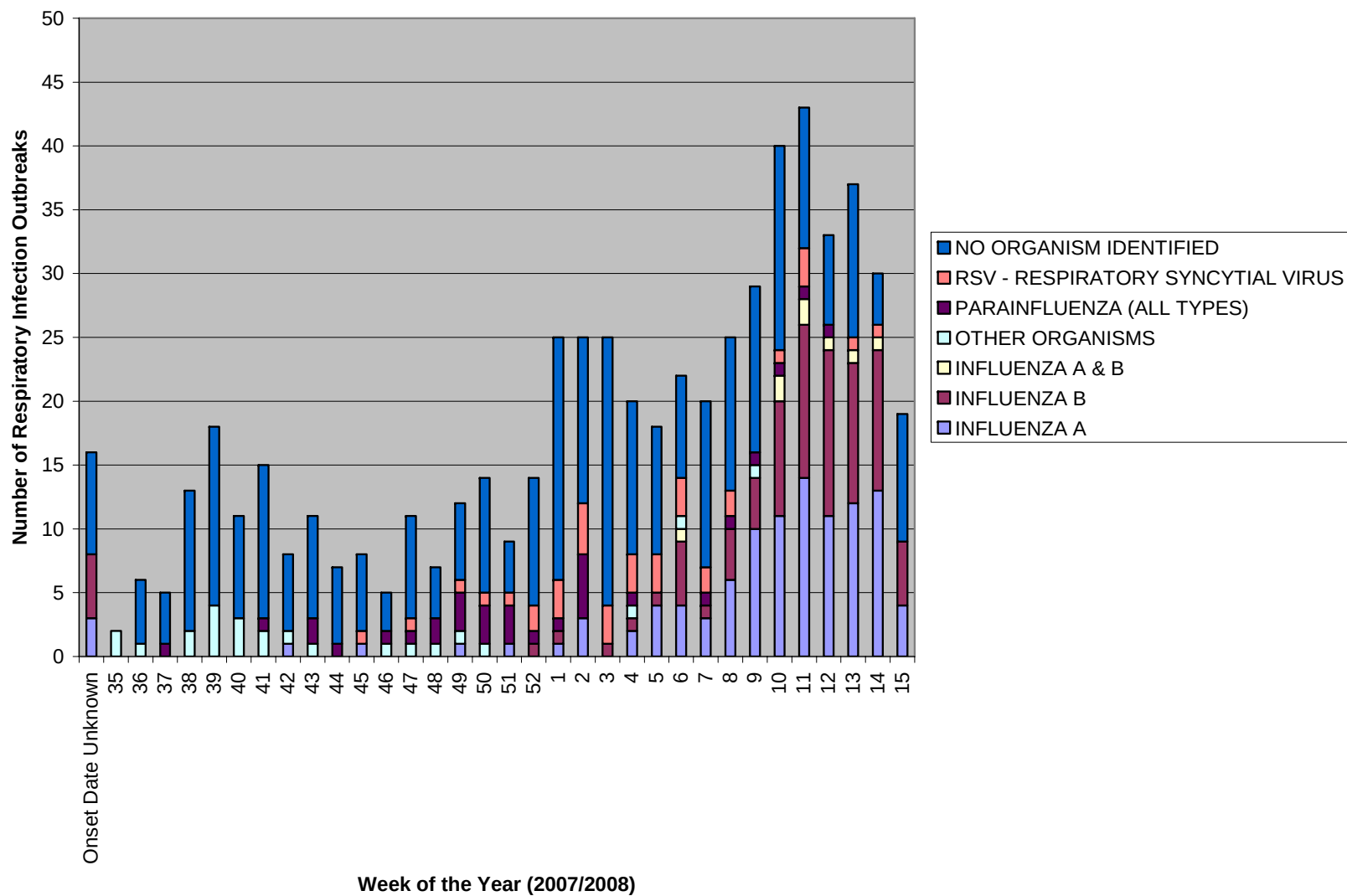


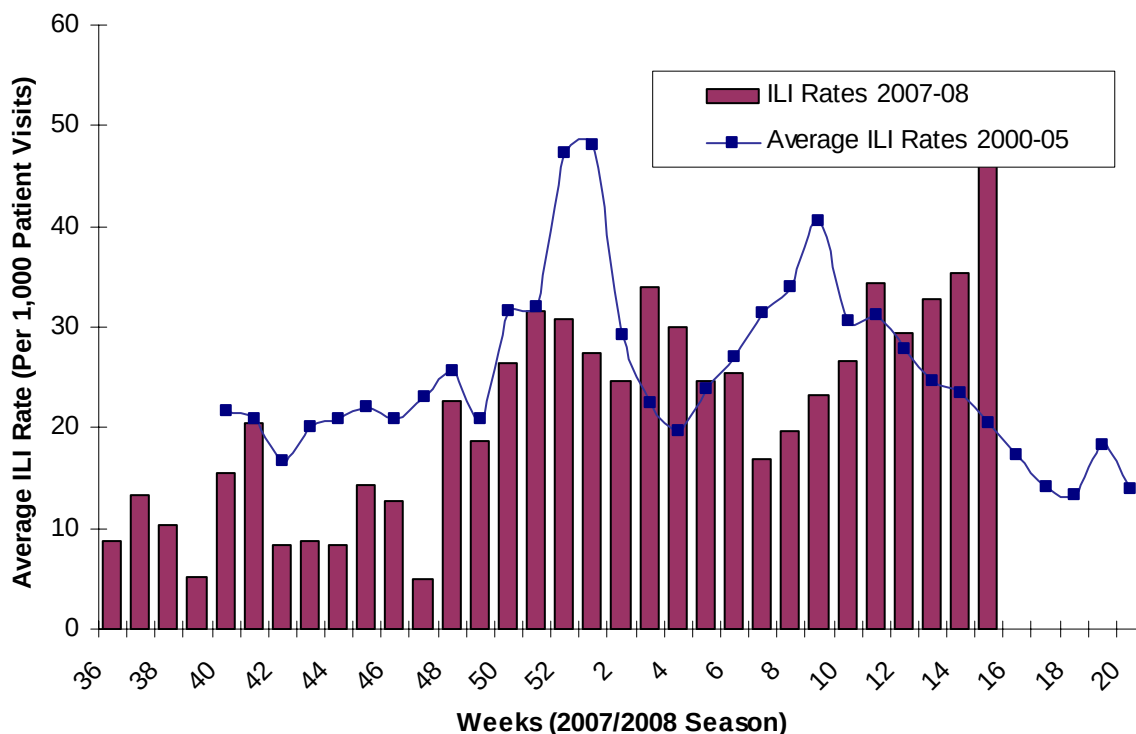
Table 5: Influenza Activity* levels in Ontario by health unit & health region for Week 15

Region	Health Unit	Influenza Activity* Level				
		No Report Received	No Activity	Sporadic	Localized	Widespread
North West	Northwestern		X			
	Thunder Bay District			X		
North East	Algoma			X		
	North Bay Parry Sound District				X	
	Porcupine		X			
	Sudbury & District			X		
	Timiskaming			X		
Eastern	Eastern Ontario				X	
	Hastings & Prince Edward Counties				X	
	Kingston, Frontenac, Lennox & Addington				X	
	Leeds, Grenville & Lanark			X		
	Ottawa					X
	Renfrew				X	
Central East	Durham Region				X	
	Haliburton, Kawartha, Pine Ridge District		X			
	Peterborough County-City	X				
	Simcoe Muskoka District					X
	York Region				X	
	Peel Region				X	
Toronto	Toronto					X
South West	Grey-Bruce			X		
	Elgin-St. Thomas		X			
	Huron County				X	
	Chatham-Kent				X	
	Lambton		X			
	Middlesex-London			X		
	Oxford			X		
	Perth District					X
	Windsor-Essex County				X	
Central West	Brant		X			
	Haldimand-Norfolk		X			
	Hamilton					X
	Niagara Region				X	
	Halton Region	X				
	Waterloo Region					X
	Wellington-Dufferin-Guelph			X		
TOTAL ONTARIO-----36 Health Units		2	7	9	12	6

SOURCE: MOHLTC [Provincial Influenza Activity Report (Appendix C) Database]

* Influenza activity levels are assigned by local public health units and reported to the MOHLTC 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 outbreaks. Please refer to detailed definitions for the 2007-2008 season included in the Appendix-1]

Figure 4: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario in 2007- 2008 season, by report week, Compared to Ontario average[†] (1999/2000 to 2004/05 seasons).



Source: Public Health Agency of Canada

* Sentinel physician information is reported to Public Health Agency of Canada.

[†] No data available for mean rate in previous years for weeks 21 to 39 (1999-2000 through 2004-2005 seasons). During weeks 20-39, 2002-2003/2004-2005 seasons, ILI is reported once every two weeks, on even weeks only.

Table 6: Average Influenza-like illness consultation rate (per 1,000 patient visits) by age group and postal code as reported by Sentinel Physicians* in Ontario, for Week 15.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0C1A0	0	0	2	0	0
K1L8H2	0	0	0	0	0
K2P1V3	0	0	0	0	0
K1J9M2	0	0	0	0	0
K7H2W6	0	1	0	0	0
K0K2T0	0	0	0	0	0
K0K2T0	0	0	0	0	0
L1A3W4	0	0	0	0	0
K0L1H0	4	0	0	0	0
K0M1A0	0	0	0	0	0
L1S2H6	1	0	11	1	0
L1B1H8	1	0	3	4	0
L4J7Y3	0	0	0	0	0
L4G7Y3	0	0	0	0	0
M5M1B2	0	0		0	0
M4X1W4	0	0	0	0	0
M6G4A1	0	0	0	0	0
M4E1V8	0	0	0	1	0
M4M3P3	0	1	0	0	0
M2J2Z1	0	0	0	0	0
M8V2Z5	0	0	0	1	0
L5J2W4	0	0	0	1	0
L4Y2N8	0	0	0	1	0
L6W2A4	1	4	2	0	0
L6V4H6	0	0	2	0	0
N1H4G2	0	0	0	0	0
L6L2X4	0	0	0	0	0
L6J1X8	1	0	0	0	0
L7R1M6	0	0	0	0	0
L9H1V1	1	0	0	0	0
L0R0H2	0	0	0	0	0
L8W3J6	0	0	0	0	0
L2E7H1	0	0	0	0	0
N3R7K8	0	0	0	0	0
N1R2L7	0	2	1	0	0
N2G1P2	0	0		0	0
N2M3B5	0	0	0	0	0
N0L1Z0	1	0	2	2	0
N6C2R5	0	0	0	0	0
N0M1L0	4	0	3	0	0
N0C1E0	1	0	0	1	0
L3V5W5	0	0	0	0	0
L4R4P4	0	0	0	0	0
P0H2H0	0	0	0	0	0
P0A1C0	0	2	0	0	0
P0M2L0	0	0		0	0
P0S1K0	0	0	0	0	0
P0M1Z0	0	0	0	0	0
P7E1H5	0	0	0	0	0
P0W1E0	0	0	0	0	0
P9N3W7	0	0	0	0	0
ILI Sum	15	10	26	12	0
ILI Consultation Rate (per 1,000 patient visits)	194.80	90.09	39.10	33.80	0.00

Source: Public Health Agency of Canada

* Sentinel physician information is reported to the Public Health Agency of Canada

Note: The small numbers of sentinel physicians reporting at the local level make the ILI rates unstable. Please interpret these data correspondingly.

FURTHER INFORMATION

1. Ontario Ministry of Health and Long-Term Care
Previous issues of the *Ontario Influenza Bulletin* can be accessed at:
http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_07/flubul_mn.html
2. Health Agency of Canada
Issues of FluWatch can be accessed at:
www.phac-aspc.gc.ca/fluwatch/
3. United States Centers for Disease Control and Prevention
<http://www.cdc.gov/flu/weekly/fluactivity.htm>
4. European Influenza Surveillance Scheme
http://www.eiss.org/cgi-files/bulletin_v2.cgi

INFORMATION ABOUT AVIAN INFLUENZA

For latest information on the status of avian influenza worldwide please use the following link:

Public Health Agency of Canada

<http://www.phac-aspc.gc.ca/h5n1/index.html>

APPENDIX - I

Definitions for influenza activity levels:

No Data: No activity report corresponding to the surveillance week was received at the Ministry of Health and Long-Term Care Call Centre by the Tuesday (at 4 p.m.) following the end of the surveillance period.

No Activity: **No laboratory confirmed* influenza and NO outbreaks detected** within the health unit/ influenza surveillance area, within the prior week, although sporadically occurring ILI may or may not be present.†

Sporadic: Sporadically (infrequently) occurring **ILI and at least one lab-confirmed influenza* case with NO outbreaks** detected within the health unit area.†

Localized: sporadically occurring **ILI and lab-confirmed influenza* together with outbreaks of ILI** in schools and work sites, or laboratory-confirmed influenza in residential institutions occurring in < 50% of the health unit . Outbreaks affect a single and/or adjacent geographic area within the health unit jurisdiction, e.g. outbreaks in a nursing home and a school in close proximity to each other.†

Widespread: sporadically occurring **ILI and lab-confirmed influenza* together with outbreaks of ILI** in schools and work sites, or laboratory-confirmed influenza in residential institutions occurring in > 50% of the health unit. Outbreaks affect multiple and non-adjacent geographic areas within the health unit jurisdiction, such as two or more regions of the health unit, two or more municipalities, two or more electoral wards, etc.†

* Confirmation of influenza within the surveillance region at any time within the prior week

† Sub-regions within the province or territory as defined by the provincial/territorial epidemiologist

Influenza-Like Illness (ILI) Definitions:

A) ILI in the general population:

Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which could be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

B) ILI/Influenza outbreaks:

Schools and work sites: greater than 10% absenteeism on any day, most likely due to ILI.

Residential institutions: two or more cases of ILI within a seven-day period, **including at least one laboratory confirmed case.**

Influenza Surveillance Weeks 2008 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
WK16	13-Apr-08	19-Apr-08	22-Apr-08
WK17	20-Apr-08	26-Apr-08	29-Apr-08
WK18	27-Apr-08	3-May-08	6-May-08
WK19	4-May-08	10-May-08	13-May-08
WK20	11-May-08	17-May-08	20-May-08
WK21	18-May-08	24-May-08	27-May-08
WK22	25-May-08	31-May-08	3-Jun-08
WK23	1-Jun-08	7-Jun-08	10-Jun-08
WK24	8-Jun-08	14-Jun-08	17-Jun-08
WK25	15-Jun-08	21-Jun-08	24-Jun-08
WK26	22-Jun-08	28-Jun-08	1-Jul-08
WK27	29-Jun-08	5-Jul-08	8-Jul-08
WK28	6-Jul-08	12-Jul-08	15-Jul-08
WK29	13-Jul-08	19-Jul-08	22-Jul-08
WK30	20-Jul-08	26-Jul-08	29-Jul-08
WK31	27-Jul-08	2-Aug-08	5-Aug-08
WK32	3-Aug-08	9-Aug-08	12-Aug-08
WK33	10-Aug-08	16-Aug-08	19-Aug-08
WK34	17-Aug-08	23-Aug-08	26-Aug-08
WK35	24-Aug-08	30-Aug-08	2-Sep-08