

SURVEILLANCE WEEK 17 (April 20, 2008– April 26, 2008)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from April 20, 2008-April 26, 2008, (Week 17). The analysis for this issue occurred on Thursday May 2, 2008, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during week 17, 2008 was lower than week 16, 2008. There were 85 confirmed cases of influenza A and 93 confirmed cases of influenza B reported through iPHIS from health units. There were 9 new reports of institutional influenza outbreaks. For week 17, the highest level of influenza activity was 'widespread' reported from Toronto, while the remaining health regions reported 'localized' activity with the exception of North West, which reported 'no activity.'

In Canada for week 16, influenza activity continued to decline. Only 1 region reported widespread influenza activity (in ON). Localized influenza activity was reported by 16 regions, 8 regions reported no activity and 29 reported sporadic activity.[†]

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.

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 17, 2008).

Confirmed influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	2	10	28	28	2	15	85
Influenza B	0	2	12	26	41	1	11	93
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	0	4	22	54	69	3	26	178
Institutional influenza outbreaks‡	0	0	4	2	3	0	0	9

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [01/05/2008].

* 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 16, 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 17, 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	0	0	0
	Porcupine	0	0	0
	Sudbury & District	1	1	2
	Timiskaming	0	0	0
	TOTAL NORTH EAST	2	2	4
Eastern	City of Ottawa	5	4	9
	Eastern Ontario	2	0	2
	Hastings & Prince Edward Counties	0	1	1
	Kingston, Frontenac, Lennox & Addington	1	1	2
	Leeds, Grenville And Lanark District	1	4	5
	Renfrew County And District	1	2	3
	TOTAL EASTERN	10	12	22
Central East	Durham Region	0	4	4
	Haliburton, Kawartha, Pine Ridge	1	3	4
	Peel Region	11	11	22
	Peterborough County-City	3	0	3
	Simcoe Muskoka District	12	4	16
	York Region	1	4	5
	TOTAL CENTRAL EAST	28	26	54
Toronto	Toronto	28	41	69
	TOTAL TORONTO	28	41	69
South West	Chatham-Kent	0	1	1
	Elgin-St. Thomas	0	0	0
	Grey Bruce	0	0	0
	Huron County	2	0	2
	Lambton County	0	0	0
	Middlesex-London	0	0	0
	Oxford County	0	0	0
	Perth District	0	0	0
	Windsor-Essex County	0	0	0
	TOTAL SOUTHWEST	2	1	3
Central West	Brant County	0	0	0
	City Of Hamilton	4	4	8
	Haldimand-Norfolk	1	0	1
	Halton Region	0	2	2
	Niagara Region	2	0	2
	Waterloo Region	6	2	8
	TOTAL CENTRAL WEST	15	11	26
	TOTAL ONTARIO	85	93	178

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [01/05/2008].

[†] 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 26, 2008

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	30	0	30
	Thunder Bay District	19	2	21
	TOTAL NORTH WEST	49	2	51
North East	Algoma	26	13	39
	North Bay Parry Sound District	49	27	76
	Porcupine	9	1	10
	Sudbury & District	16	16	32
	Timiskaming	12	12	24
	TOTAL NORTH EAST	112	69	181
Eastern	City Of Ottawa	81	118	199
	Eastern Ontario	20	27	47
	Hastings & Prince Edward Counties	19	21	40
	Kingston, Frontenac, Lennox & Addington	26	26	52
	Leeds, Grenville And Lanark District	10	18	28
	Renfrew County And District	7	15	22
	TOTAL EASTERN	163	225	388
Central East	Durham Region	76	50	126
	Haliburton, Kawartha, Pine Ridge	59	65	124
	Peel Region	332	162	494
	Peterborough County-City	66	59	125
	Simcoe Muskoka District	160	84	244
	York Region	116	90	206
	TOTAL CENTRAL EAST	809	510	1,319
Toronto	Toronto	800	538	1,338
	TOTAL TORONTO	800	538	1,338
South West	Chatham-Kent	11	10	21
	Elgin-St. Thomas	2	2	4
	Grey Bruce	48	19	67
	Huron County	67	18	85
	Lambton County	24	8	32
	Middlesex-London	50	10	60
	Oxford County	24	5	29
	Perth District	23	25	48
	Windsor-Essex County	27	28	55
	TOTAL SOUTHWEST	276	125	401
Central West	Brant County	6	11	17
	City Of Hamilton	211	101	312
	Haldimand-Norfolk	18	6	24
	Halton Region	107	61	168
	Niagara Region	83	15	98
	Waterloo Region	140	70	210
	Wellington-Dufferin-Guelph	72	43	115
	TOTAL CENTRAL WEST	637	307	944
	TOTAL ONTARIO	2,846	1,776	4,622

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [01/052008].

* 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 17, 3974 isolates were received by the Public Health Agency of Canada, with 217 testing positive for influenza A and 303 for influenza B. Among the reported influenza A isolates, 94 were from Ontario (43.3%), 58 from Quebec (26.7%), and 27 from Alberta (12.4%). Among the reported influenza B isolates, 157 were from Ontario (51.8%), 105 from Quebec (34.7%), and 12 from British Columbia (4.0%).*

Antigenic Characterization:

The National Microbiology Laboratory (NML) has characterized 1,149 influenza viruses for the 2007-2008 influenza season: 449 (39%) A(H1N1), 164 (14%) A(H3N2) and 536 (47%) B viruses. Of the 449 influenza A(H1N1) viruses characterized, 429 (96%) were antigenically similar to A/Solomon Islands/3/2006 and 20 (4%) were antigenically similar to A/Brisbane/59/2007. Of the 164 influenza A(H3N2) viruses characterized, 7 (4%) were antigenically similar to A/Wisconsin/67/2005 and 157 (96%) were antigenically similar to A/Brisbane/10/2007. One of the 6 A/Wisconsin-like viruses had reduced titer to A/Wisconsin/67/2005 reference antiserum. Of the 536 influenza B isolates characterized, 8 (1%) were antigenically similar to B/Malaysia/2506/2004 and 528 (99%) 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 833 influenza A isolates (521 H1N1 and 312 H3N2) for amantadine resistance and found that 310 (99%) of the 312 H3N2 isolates were resistant to amantadine and 5 (1%) of 521 H1N1 isolates were resistant.

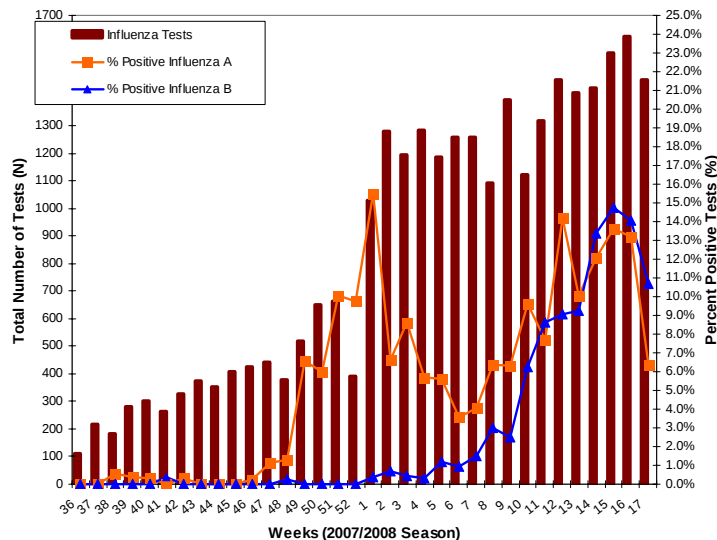
The NML has also tested 1,105 influenza isolates (460 A/H1N1, 157 A/H3N2 & 488 B) for oseltamivir (Tamiflu) resistance and found that 112 (24.3%) of the 460 H1N1 isolates tested were resistant to oseltamivir. The resistant isolates were from NL, NS, NB, QC, ON, MB, AB and BC. Fifty-four of 184 H1N1 influenza isolates from Ontario were resistant to oseltamivir. Of the 112 resistant viruses, 108 were A/Solomon Islands/3/06-like and 4 were A/Brisbane/59/07-like. 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 17, 2008

** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Week 16, 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 17 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A	2	14.3
Influenza B	7	50.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Other organisms	0	0.0
No organism identified	5	35.7
TOTAL	14	100
Total Respiratory Infection Outbreaks of the Season to date**	N	% (of outbreaks)
Influenza A	136	19.7
Influenza B	118	17.1
Influenza A and B	12	1.7
Parainfluenza (All types)	32	4.6
RSV	41	5.9
Combined Outbreaks [†]	0	0.0
Other organisms	23	3.3
No organism identified	330	47.7
TOTAL	692	100
Types of Institutions (All Outbreaks) **	N	% (of outbreaks)
Long-Term Care Homes	392	56.7
Hospitals	31	4.5
Retirement Homes	72	10.4
Other	9	1.3
Unknown	188	27.2
TOTAL	692	100

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [01/052008]

* 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 20, 2008 – April 26, 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 26, 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	8441	72.4
Patients	439	3.8
Staff	2739	23.5
Total Cases	11661	100
Deaths		% (of cases per role)
Residents	234	2.8
Patients	13	3.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	335	4.0
Patients	13	3.0
Staff	12	0.4
Hospitalizations		% (of cases per role)
Residents	422	5.0
Staff	9	0.3
Outbreak Related Complications (Influenza Outbreaks)	N	% (of total cases)
Total Cases		
Residents	3157	71.8
Patients	128	2.9
Staff	1090	24.8
Total Cases	4395	100
Deaths		% (of cases per role)
Residents	128	4.1
Patients	4	3.1
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	158	5.0
Patients	6	4.7
Staff	9	0.8
Hospitalizations		% (of cases per role)
Residents	238	7.5
Staff	8	0.7

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [01/05/2008]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – April 26, 2008

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2007 – April 26, 2008 by causative organism

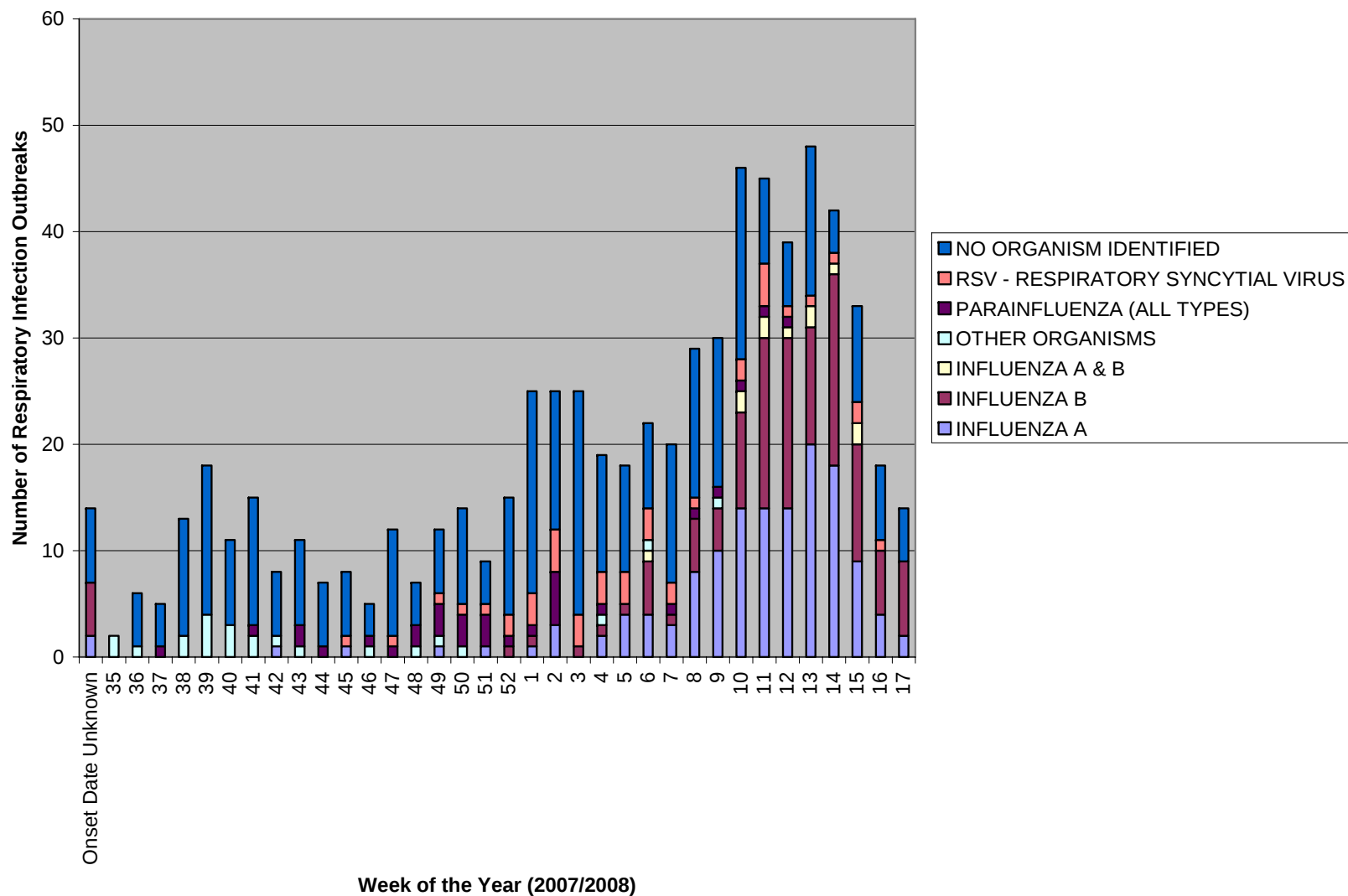
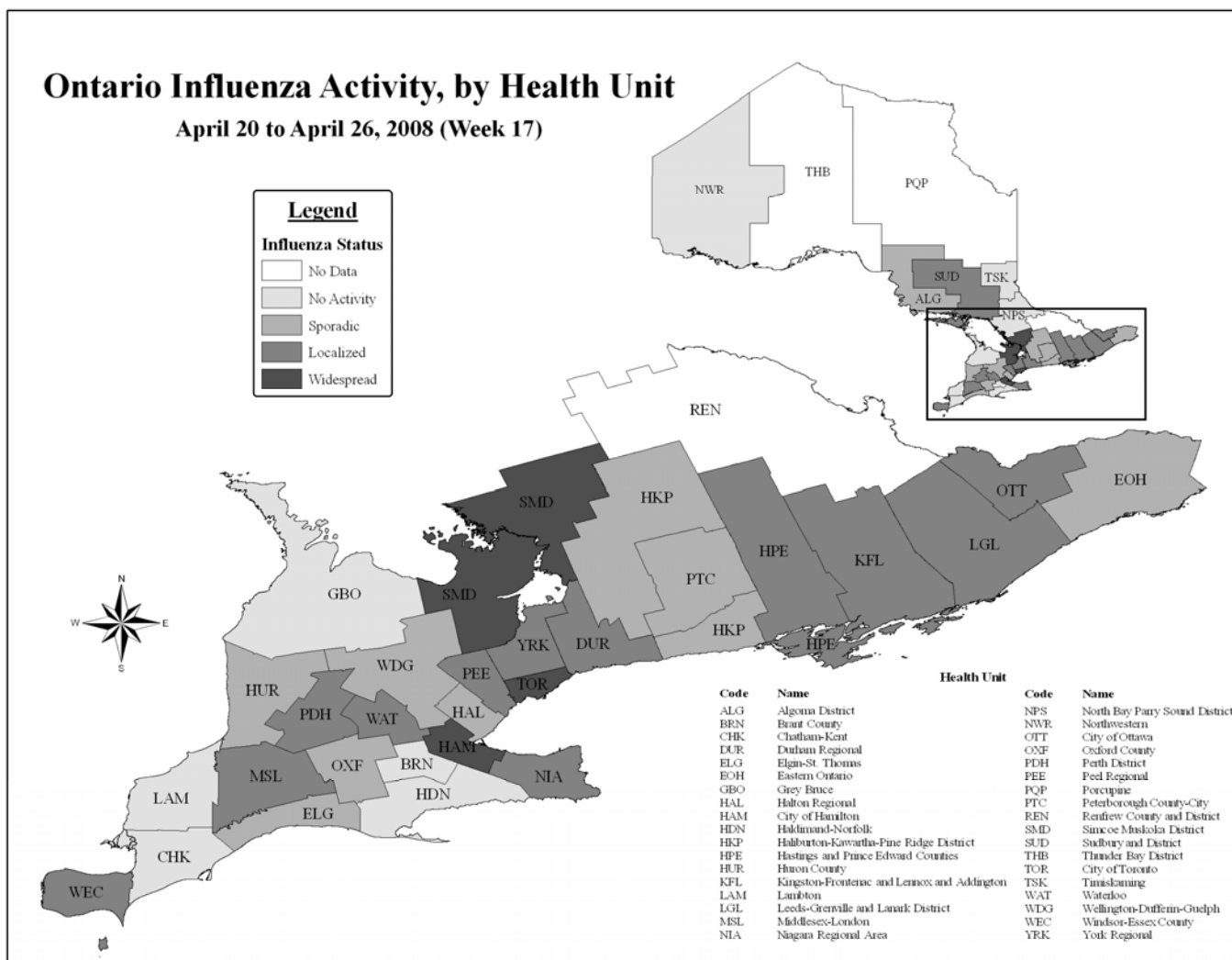


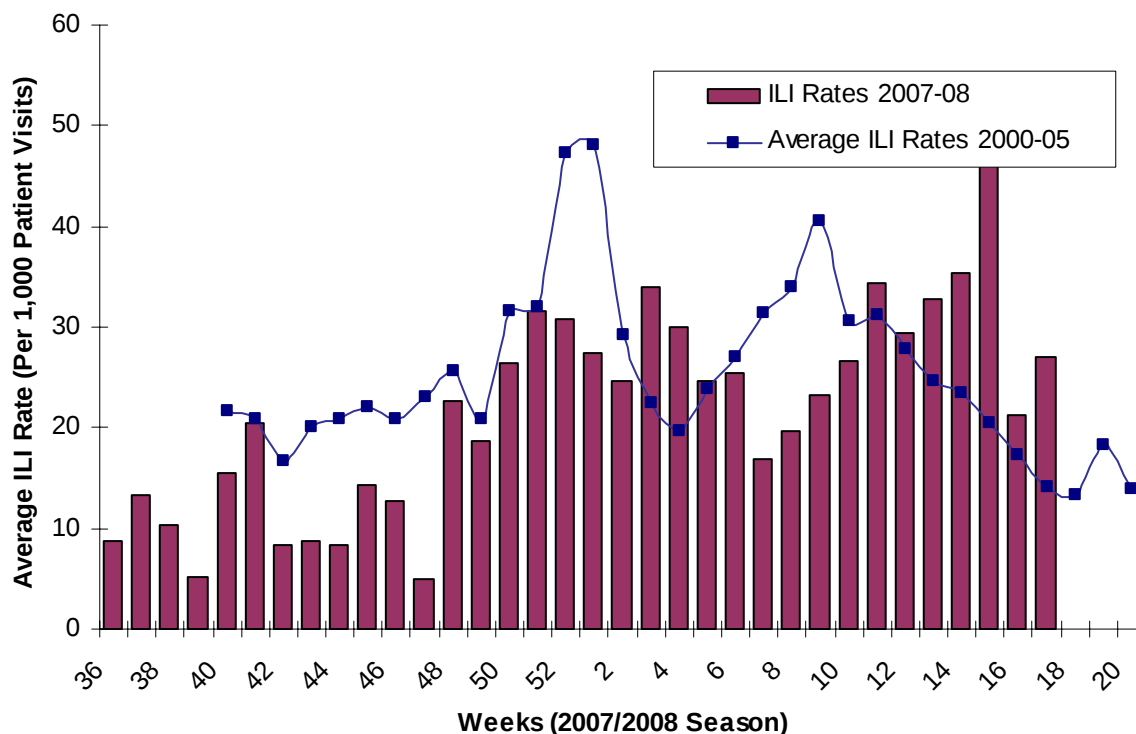
Figure 3: Influenza Activity* levels in Ontario by health unit for Week 17, 2008



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 17.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K1L8H2	0	0	0	0	0
K2P1V3	0	0	0	0	0
K1J9M2	0	0	3	0	0
K7H2W6	0	0	0	0	0
K0K2T0	0	0	3	0	0
K0K2T0	0	0	1	0	0
L1A3W4	0	1	0	0	0
K0M1A0	0	0	0	0	0
L1B1H8	0	0	0	0	0
L4J7Y3	0	0	2	0	0
L4C2N9	0	0	0	0	0
L4G7Y3	0	0	0	0	0
M4X1W4	0	0	0	0	0
M6G4A1	0	0	2	0	0
M4E1V8	0	0	1	0	0
M8Y1W3	0	0	0	0	0
M4M3P3	0	0	0	0	0
M2K1E1	0	0	1	0	0
M9W6N5	0	0	1	0	0
L4Y2N8	0	0	0	0	0
L6W2A4	1	1	0	0	0
L6V4H6	0	0	2	0	0
L9W1G2	0	0	0	0	0
L6J1X8	0	0	0	0	0
L7R1M6	0	0	0	0	0
L9H1V1	0	0	0	0	0
L0R1H0	0	0	1	0	0
L8W3J6	0	0	0	0	0
L2E7H1	0	0	0	0	0
N3R7K8	0	0	0	0	0
N1R2L7	0	3	4	0	0
N2M3B5	0	0	0	0	0
N5C1G5	0	0	0	0	0
N5H1K9	0	0	0	0	0
N0R1G0	0	0	0	0	0
N0M1T0	0	0	0	0	0
N0L1Z0	0	0	2	0	0
N6C2R5	0	0	0	0	0
N0M1L0	0	0	1	0	0
N0C1E0	0	0	0	0	0
L3V5S2	0	0	1	0	0
L4R4P4	2	0	0	0	0
P0H2H0	0	0	0	0	0
P0M2L0	0	0	0	0	0
P0M1Z0	0	0	0	0	0
P7E1H5	0	0	0	0	0
P0T2E0	0	0	0	0	0
P0W1E0	0	0	0	0	0
P9N3W7	0	0	0	0	0
ILI Sum	3	5	25	0	0
ILI Consultation Rate (per 1,000 patient visits)	36.59	43.48	36.18	0.00	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
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