

SURVEILLANCE WEEK 14 (March 30, 2008– April 5, 2008)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from March 30, 2008-April 5, 2008, (Week 14). The analysis for this issue occurred on Thursday April 10, 2008, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during week 14, 2008 was higher than week 13, 2008. There were 126 confirmed cases of influenza A and 163 confirmed cases of influenza B reported through iPHIS from health units. There were 15 new reports of institutional influenza outbreaks. For week 14, the highest level of influenza activity was 'localized' reported the majority of health regions, with the exception of North East and North West, which reported 'sporadic' activity. Toronto did not report influenza activity data for Week 14.

In Canada for week 13, influenza activity remained fairly similar to the previous week and moderate overall. Widespread influenza activity was reported by 4 regions (in BC, AB, ON and QC) and localized influenza activity by 17 regions (in BC, AB, SK, ON, QC, NB & NS). Three regions reported no activity and 30 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 14, 2008).

Confirmed influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	2	10	62	27	12	13	126
Influenza B	0	4	12	55	62	4	26	163
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	0	6	22	117	89	16	39	289
Institutional influenza outbreaks‡	0	0	4	6	1	2	2	15

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [10/04/2008].

* 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 13, 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 14, 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	0	1	1
	North Bay Parry Sound District	0	2	2
	Porcupine	0	0	0
	Sudbury & District	1	0	1
	Timiskaming	1	1	2
	TOTAL NORTH EAST	2	4	6
Eastern	City of Ottawa	4	3	7
	Eastern Ontario	0	1	1
	Hastings & Prince Edward Counties	3	1	4
	Kingston, Frontenac, Lennox & Addington	2	4	6
	Leeds, Grenville And Lanark District	1	1	2
	Renfrew County And District	0	2	2
	TOTAL EASTERN	10	12	22
Central East	Durham Region	1	4	5
	Haliburton, Kawartha, Pine Ridge	6	3	9
	Peel Region	13	22	35
	Peterborough County-City	13	17	30
	Simcoe Muskoka District	24	7	31
	York Region	5	2	7
	TOTAL CENTRAL EAST	62	55	117
Toronto	Toronto	27	62	89
	TOTAL TORONTO	27	62	89
South West	Chatham-Kent	0	0	0
	Elgin-St. Thomas	0	0	0
	Grey Bruce	2	2	4
	Huron County	6	1	7
	Lambton County	0	0	0
	Middlesex-London	2	0	2
	Oxford County	0	1	1
	Perth District	2	0	2
	Windsor-Essex County	0	0	0
	TOTAL SOUTHWEST	12	4	16
Central West	Brant County	0	0	0
	City Of Hamilton	7	15	22
	Haldimand-Norfolk	0	1	1
	Halton Region	1	2	3
	Niagara Region	2	1	3
	Waterloo Region	1	2	3
	TOTAL CENTRAL WEST	13	26	39
	TOTAL ONTARIO	126	163	289

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [10/04/2008].

[†] 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 5, 2008

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	30	0	30
	Thunder Bay District	17	1	18
	TOTAL NORTH WEST	47	1	48
North East	Algoma	24	8	32
	North Bay Parry Sound District	41	23	64
	Porcupine	9	1	10
	Sudbury & District	13	9	22
	Timiskaming	9	10	19
	TOTAL NORTH EAST	96	51	147
Eastern	City Of Ottawa	41	70	111
	Eastern Ontario	11	21	32
	Hastings & Prince Edward Counties	12	11	23
	Kingston, Frontenac, Lennox & Addington	21	15	36
	Leeds, Grenville And Lanark District	7	5	12
	Renfrew County And District	3	5	8
	TOTAL EASTERN	95	127	222
Central East	Durham Region	63	29	92
	Haliburton, Kawartha, Pine Ridge	52	37	89
	Peel Region	293	115	408
	Peterborough County-City	38	38	76
	Simcoe Muskoka District	104	41	145
	York Region	87	30	117
	TOTAL CENTRAL EAST	637	290	927
Toronto	Toronto	671	354	1,025
	TOTAL TORONTO	671	354	1,025
South West	Chatham-Kent	11	6	17
	Elgin-St. Thomas	1	0	1
	Grey Bruce	45	16	61
	Huron County	60	11	71
	Lambton County	16	3	19
	Middlesex-London	34	6	40
	Oxford County	23	4	27
	Perth District	19	19	38
	Windsor-Essex County	17	4	21
	TOTAL SOUTHWEST	226	69	295
Central West	Brant County	5	6	11
	City Of Hamilton	174	67	241
	Haldimand-Norfolk	16	4	20
	Halton Region	88	29	117
	Niagara Region	64	8	72
	Waterloo Region	97	36	133
	Wellington-Dufferin-Guelph	55	16	71
	TOTAL CENTRAL WEST	499	166	665
	TOTAL ONTARIO	2,271	1,058	3,329

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [10/04/2008].

* 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 14, 4726 isolates were received by the Public Health Agency of Canada, with 414 testing positive for influenza A and 413 for influenza B. Among the reported influenza A isolates, 173 were from Ontario (41.8%), 137 from Quebec (33.1%), and 33 from Alberta (8.0%), and British Columbia reporting 22 (5.3%). Among the reported influenza B isolates, 192 were from Ontario (46.5%), 113 from Quebec (27.4%), 31 (7.5%) from New Brunswick and 25 from British Columbia (6.1%).*

Antigenic Characterization:

The National Microbiology Laboratory (NML) has characterized 952 influenza viruses for the 2007-2008 influenza season: 425 (45%) A(H1N1), 111 (12%) A(H3N2) and 416 (44%) B viruses. Of the 425 influenza A(H1N1) viruses characterized, 407 (96%) were antigenically similar to A/Solomon Islands/3/2006 and 18 (4%) were antigenically similar to A/Brisbane/59/2007. Of the 111 influenza A(H3N2) viruses characterized, 5 (5%) were antigenically similar to A/Wisconsin/67/2005 and 106 (95%) 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 416 influenza B isolates characterized, 7 (2%) were antigenically similar to B/Malaysia/2506/2004 and 409 (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 672 influenza A isolates (473 H1N1 and 199 H3N2) for amantadine resistance and found that 197 (99%) of the 199 H3N2 isolates were resistant to amantadine and 5 (1%) of 473 H1N1 isolates were resistant.

The NML has also tested 852 influenza isolates (418 A/H1N1, 101 A/H3N2 & 333 B) for oseltamivir (Tamiflu) resistance and found that 81 (19.4%) of the 418 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.**

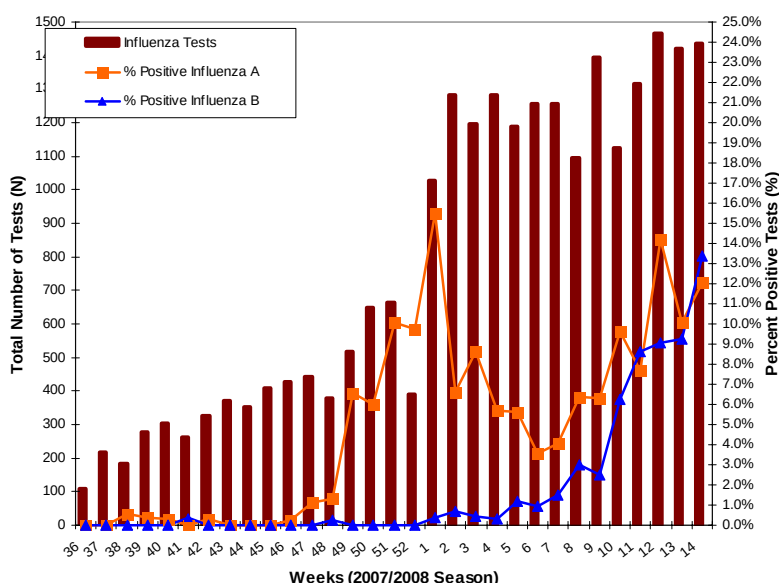
Note: The WHO recommends that the trivalent vaccine for the 2007-2008 season in the northern hemisphere (which includes Canada) contain an A/Solomon Islands (H1N1)-like virus; an A/Wisconsin (H3N2)-like virus; and a B/Malaysia-like virus.

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 14, 2008

** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Week 13, 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 14 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A	8	38.1
Influenza B	7	33.3
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	1	4.8
Other organisms	0	0.0
No organism identified	5	23.8
TOTAL	21	100
Total Respiratory Infection Outbreaks of the Season to date**	N	% (of outbreaks)
Influenza A	91	17.0
Influenza B	64	11.7
Influenza A and B	5	0.2
Parainfluenza (All types)	31	5.6
RSV	36	6.5
Combined Outbreaks [†]	0	0.0
Other organisms	23	4.2
No organism identified	304	54.9
TOTAL	554	100
Types of Institutions (All Outbreaks) **	N	% (of outbreaks)
Long-Term Care Homes	315	56.9
Hospitals	23	4.2
Retirement Homes	50	9.0
Other	7	1.3
Unknown	159	28.7
TOTAL	554	100

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [10/04/2008]

* 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. March 30, 2008 – April 5, 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 5, 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	6616	72.3
Patients	395	4.3
Staff	2114	23.1
Total Cases	9151	100
Deaths		% (of cases per role)
Residents	167	2.5
Patients	13	3.3
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	212	3.2
Patients	11	2.8
Staff	4	0.2
Hospitalizations		% (of cases per role)
Residents	288	4.4
Staff	3	0.1
Outbreak Related Complications (Influenza Outbreaks)	N	% (of total cases)
Total Cases		
Residents	1892	73.0
Patients	99	3.8
Staff	582	22.5
Total Cases	2593	100
Deaths		% (of cases per role)
Residents	73	3.9
Patients	4	4.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	66	3.5
Patients	4	4.0
Staff	2	0.3
Hospitalizations		% (of cases per role)
Residents	120	6.3
Staff	2	0.3

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [10/04/2008]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – April 5, 2008

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2007 – April 5, 2008 by causative organism

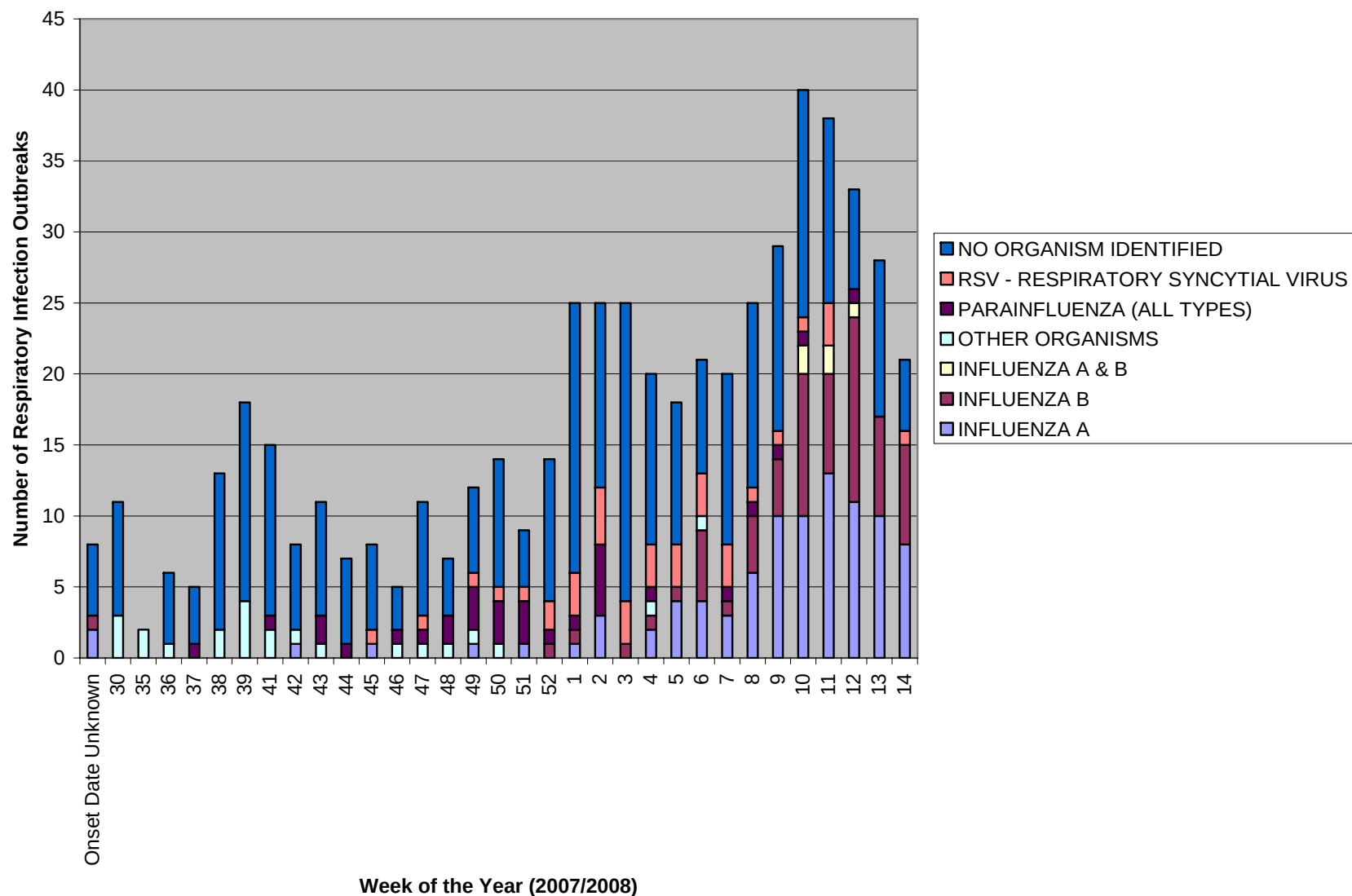
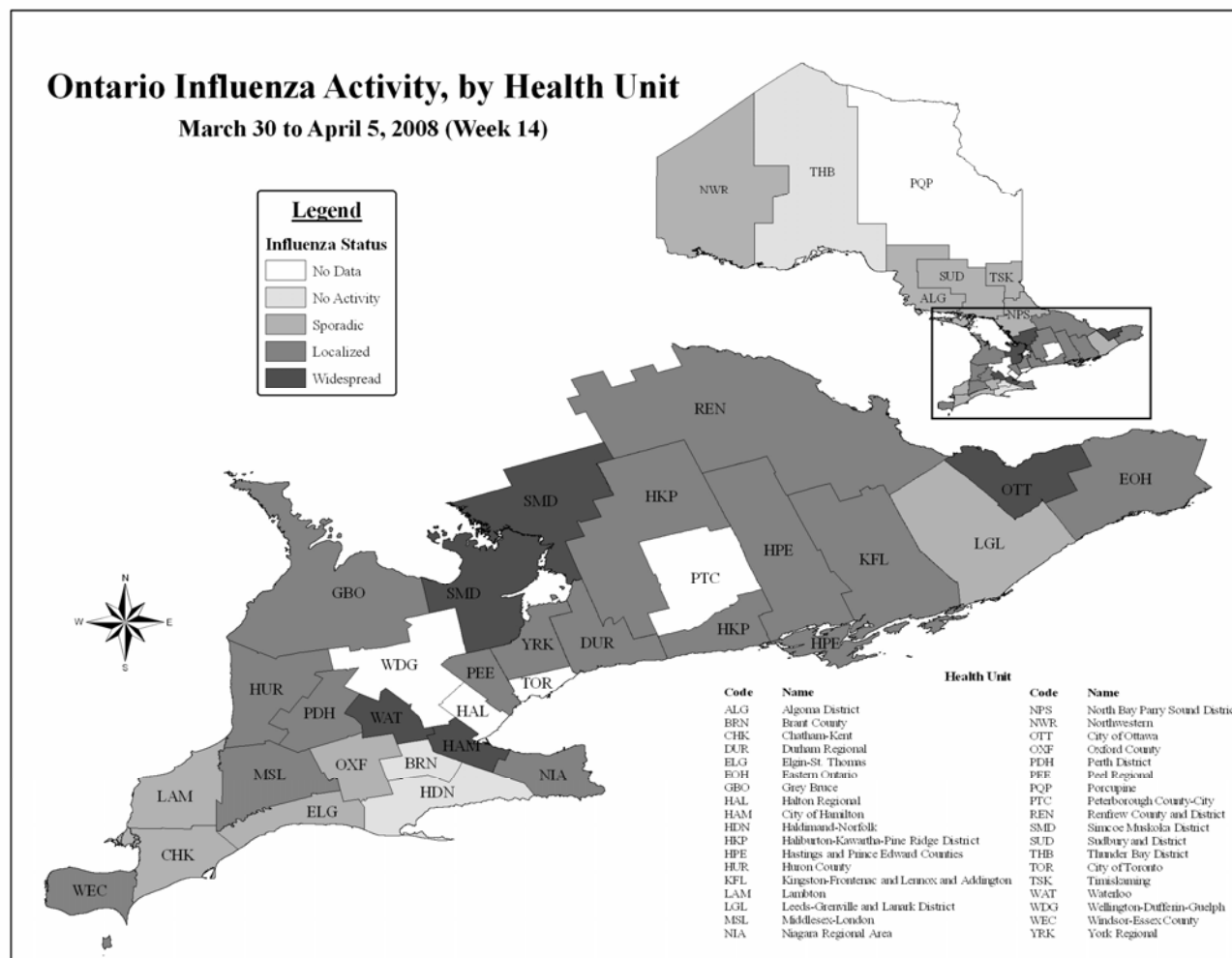


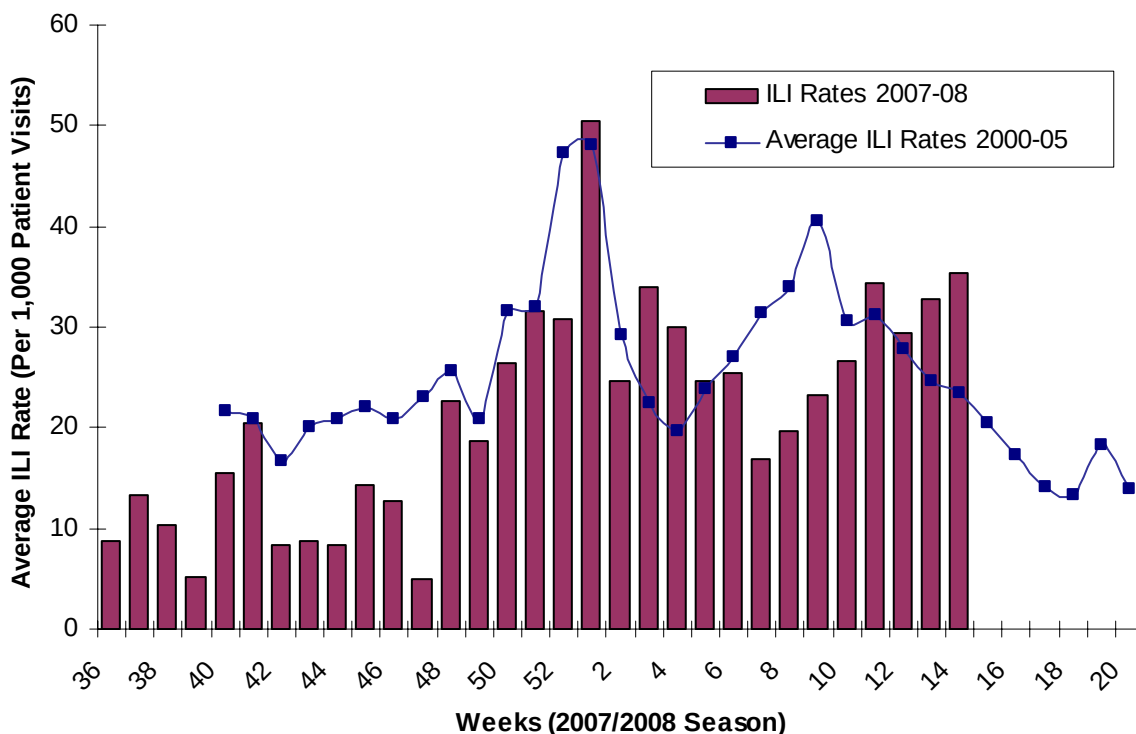
Figure 3: Influenza Activity* levels in Ontario by health unit for Week 14, 2008



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 14.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K1L8H2	0	0	0	0	0
K2P1V3	0	0	0	0	0
K7H2W6	0	0	0	0	0
K0K2T0	0	0	0	0	0
L1A3W4	0	0	0	0	0
K0M1A0	0	0	0	0	0
L1S2H6	1	2	5	2	0
L1B1H8	0	1	5	5	0
L4L4Y7	1	0	4	0	0
L4J7Y3	0	0	0	0	0
L4C2N9	0	0	0	0	0
M4X1W4	0	0	0	0	0
M4E1V8	0	0	0	0	0
M8Y1W3	0	0	0	0	0
M2J2Z1	0	0	0	0	0
M2K1E1	0	0	0	0	0
M9W6N5	0	0	2	0	0
M8V2Z5	0	0	0	1	0
L4Y2N8	0	0	0	0	0
L4Y2N8	0	0	0	0	0
L9W1G2	0	0	0	0	0
L7R1M6	0	0	0	0	0
L9H1V1	0	0	0	0	0
L0R1H2	0	0	0	0	0
L8W3J6	0	0	0	0	0
N1R2L7	1	0	0	0	0
N2G1P2	0	0	0	0	0
N2M3B5	0	0	1	0	0
N5H1K9	0	0	0	0	0
N0P2C0	0	0	0	0	0
N0L1Z0	0	0	1	1	0
N6C2R5	0	0	0	1	0
N0C1E0	0	0	0	0	0
L3V5W5	0	0	0	0	0
L3V5S2	0	0	0	0	0
L4R4P4	0	0	0	0	0
P0A1C0	0	1	1	0	0
P0P1S0	0	0	0	0	0
P0M2L0	0	0	3	0	0
P4N1C6	0	0	0	0	0
P0M1Z0	0	0	0	0	0
P7E1H5	0	0	0	0	0
P0W1E0	0	0	0	0	0
P8N2Z6	0	0	0	0	0
ILI Sum	3	4	22	10	0
ILI Consultation Rate (per 1,000 patient visits)	44.78	39.22	35.71	31.35	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
WK15	6-Apr-08	12-Apr-08	15-Apr-08
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