

SURVEILLANCE WEEK 12 (March 16, 2008– March 22, 2008)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from March 16, 2008-March 22, 2008, (Week 12). The analysis for this issue occurred on Thursday March 27, 2008, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during week 12, 2008 was higher than week 11, 2008. There were 89 sporadically occurring cases of influenza A and 78 sporadic cases of influenza B reported through iPHIS from health units. There were 12 new reports of institutional influenza outbreaks. For week 12, the highest level of influenza activity was 'widespread' reported from Toronto, 'localized' activity was reported from the remaining regions with the exception of North West, which reported 'sporadic' activity.

In Canada for week 11, influenza activity started to decline with some indicators (laboratory detections, number of regions reporting widespread and localized activity and the ILI consultation rate) having decreased slightly from the previous week, however influenza B detections are still increasing. Widespread influenza activity was reported by 5 regions (in BC, AB & ON and QC) and localized influenza activity by 11 regions (in BC, SK, MB, ON, QC & NS). Four regions reported no activity and 36 reported sporadic activity.[†]

Outbreak Data Entry Reminder:

Please ensure when entering confirmed outbreaks in iPHIS that the number of cases is entered in the outbreak summary section of iPHIS along with the aetiologic agent (if known). This assists us in providing you with the most accurate picture 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 12, 2008).

Confirmed influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	6	5	12	32	12	22	89
Influenza B	1	4	12	13	30	1	17	78
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	1	10	17	25	62	13	39	167
Institutional influenza outbreaks‡	0	0	1	3	3	2	3	12

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [27/03/2008].

* Includes reports of sporadically occurring 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 11, 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 12, 2008

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	0	0	0
	Thunder Bay District	0	1	1
	TOTAL NORTH WEST	0	1	1
North East	Algoma	1	0	1
	North Bay Parry Sound District	4	2	6
	Porcupine	1	0	1
	Sudbury & District	0	0	0
	Timiskaming	0	2	2
	TOTAL NORTH EAST	6	4	10
Eastern	City of Ottawa	3	7	10
	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	0	0	0
	Kingston, Frontenac, Lennox & Addington	1	4	5
	Leeds, Grenville And Lanark District	1	1	2
	Renfrew County And District	0	0	0
	TOTAL EASTERN	5	12	17
Central East	Durham Region	0	0	0
	Haliburton, Kawartha, Pine Ridge	3	3	6
	Peel Region	8	8	16
	Peterborough County-City	0	0	0
	Simcoe Muskoka District	1	2	3
	York Region	0	0	0
	TOTAL CENTRAL EAST	12	13	25
Toronto	Toronto	32	30	62
	TOTAL TORONTO	32	30	62
South West	Chatham-Kent	0	0	0
	Elgin-St. Thomas	0	0	0
	Grey Bruce	0	0	0
	Huron County	8	0	8
	Lambton County	0	0	0
	Middlesex-London	2	0	2
	Oxford County	1	0	1
	Perth District	1	1	2
	Windsor-Essex County	0	0	0
	TOTAL SOUTHWEST	12	1	13
Central West	Brant County	0	0	0
	City Of Hamilton	13	10	23
	Haldimand-Norfolk	0	1	1
	Halton Region	2	3	5
	Niagara Region	4	0	4
	Waterloo Region	2	2	4
	TOTAL CENTRAL WEST	22	17	39
	TOTAL ONTARIO	89	78	167

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [27/03/2008].

[†] 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 – March 22, 2008

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	28	0	28
	Thunder Bay District	17	1	18
	TOTAL NORTH WEST	45	1	46
North East	Algoma	21	4	25
	North Bay Parry Sound District	33	14	47
	Porcupine	9	0	9
	Sudbury & District	10	7	17
	Timiskaming	7	5	12
	TOTAL NORTH EAST	80	30	110
Eastern	City Of Ottawa	22	36	58
	Eastern Ontario	9	13	22
	Hastings & Prince Edward Counties	7	7	14
	Kingston, Frontenac, Lennox & Addington	16	10	26
	Leeds, Grenville And Lanark District	6	3	9
	Renfrew County And District	1	0	1
	TOTAL EASTERN	61	69	130
Central East	Durham Region	36	7	43
	Haliburton, Kawartha, Pine Ridge	35	24	59
	Peel Region	242	67	309
	Peterborough County-City	11	3	14
	Simcoe Muskoka District	59	23	82
	York Region	75	16	91
	TOTAL CENTRAL EAST	458	140	598
Toronto	Toronto	575	173	748
	TOTAL TORONTO	575	173	748
South West	Chatham-Kent	4	0	4
	Elgin-St. Thomas	1	0	1
	Grey Bruce	29	5	34
	Huron County	37	6	43
	Lambton County	7	1	8
	Middlesex-London	25	5	30
	Oxford County	20	1	21
	Perth District	11	14	25
	Windsor-Essex County	13	3	16
	TOTAL SOUTHWEST	147	35	182
Central West	Brant County	5	3	8
	City Of Hamilton	144	38	182
	Haldimand-Norfolk	10	3	13
	Halton Region	80	21	101
	Niagara Region	40	4	44
	Waterloo Region	80	23	103
	Wellington-Dufferin-Guelph	48	5	53
	TOTAL CENTRAL WEST	407	97	504
	TOTAL ONTARIO	1,773	545	2,318

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [27/03/2008].

* 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 12, 4740 isolates were received by the Public Health Agency of Canada, with 504 testing positive for influenza A and 377 for influenza B. Among the reported influenza A isolates, 208 were from Ontario (41.3%), 159 from Quebec (31.6%), and 46 from Alberta (9.1%), with British Columbia and Saskatchewan each reporting 26 (5.2%). Among the reported influenza B isolates, 133 were from Ontario (35.3%), 94 from Quebec (24.9%), 38 from British Columbia (10.1%), and 31 each from Alberta and Saskatchewan (8.2%).

Antigenic Characterization:

The National Microbiology Laboratory (NML) has characterized 746 influenza viruses for the 2007-2008 influenza season: 377 (50%) A(H1N1), 72 (10%) A(H3N2) and 297 (40%) B viruses. Of the 377 influenza A(H1N1) viruses characterized, 365 (97%) were antigenically similar to A/Solomon Islands/3/2006 and 12 (3%) were antigenically similar to A/Brisbane/59/2007. Of the 72 influenza A(H3N2) viruses characterized, 5 (7%) were antigenically similar to A/Wisconsin/67/2005 and 67 (93%) 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 297 influenza B isolates characterized, 3 (1%) were antigenically similar to B/Malaysia/2506/2004 and 294 (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 550 influenza A isolates (410 H1N1 and 140 H3N2) for amantadine resistance and found that 138 (98%) of the 140 H3N2 isolates were resistant to amantadine and 5 (1.2%) of 410 H1N1 isolates were resistant (see recommendation from the 2006-2007 influenza season below).

The NML has also tested 689 influenza isolates (370 A/H1N1, 71 A/H3N2 & 248 B) for oseltamivir (Tamiflu) resistance and found that 57 (15.4%) of the 370 H1N1 isolates tested were resistant to oseltamivir. The resistant isolates were from NL, QC, ON, MB, AB and BC. These oseltamivir resistant strains remain sensitive to the antiviral amantadine.**

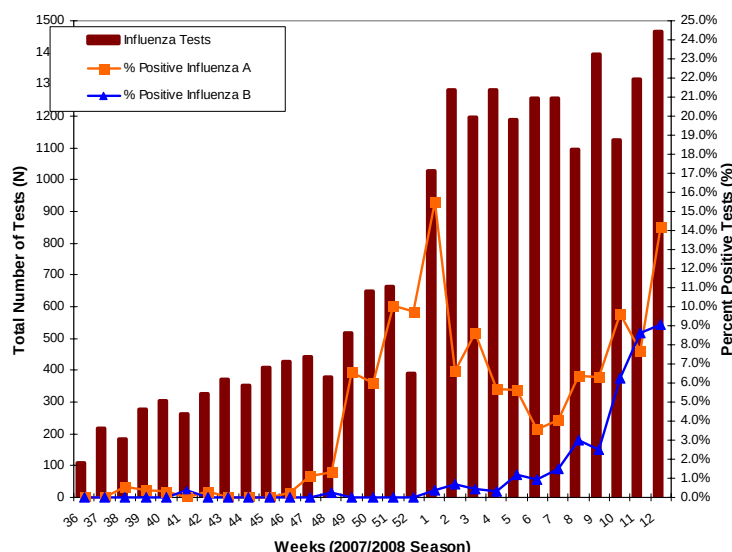
Note: The WHO recommends that the trivalent vaccine for the 2007-2008 season in the northern hemisphere (which includes Canada) contain an A/Solomon Islands (H1N1)-like virus; an A/Wisconsin (H3N2)-like virus; and a B/Malaysia-like virus.

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 12, 2008

** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Week 11, 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 12 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A	7	41.2
Influenza B	5	29.4
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	9.5
Other organisms	0	0.0
No organism identified	5	29.4
TOTAL	17	100
Total Respiratory Infection Outbreaks of the Season to date**	N	% (of outbreaks)
Influenza A	57	12.5
Influenza B	40	8.8
Influenza A and B	1	0.2
Parainfluenza (All types)	27	5.9
RSV	33	7.2
Combined Outbreaks [†]	0	0.0
Other organisms	23	5.0
No organism identified	276	60.4
TOTAL	457	100
Types of Institutions (All Outbreaks) **	N	% (of outbreaks)
Long-Term Care Homes	269	58.9
Hospitals	18	3.9
Retirement Homes	44	9.6
Other	5	1.1
Unknown	121	26.5
TOTAL	457	100

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [27/03/2008]

* 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 16, 2008 – March 22, 2008

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – March 22, 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	5243	72.3
Patients	361	5.0
Staff	1640	22.6
Total Cases	7250	100
Deaths		% (of cases per role)
Residents	116	2.2
Patients	9	2.5
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	165	3.2
Patients	9	2.5
Staff	0	0.0
Hospitalizations		% (of cases per role)
Residents	216	4.1
Staff	0	0.0
Outbreak Related Complications (Influenza Outbreaks)	N	% (of total cases)
Total Cases		
Residents	1000	73.3
Patients	73	5.4
Staff	291	21.3
Total Cases	1364	100
Deaths		% (of cases per role)
Residents	36	3.6
Patients	0	0.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	31	3.1
Patients	2	2.7
Staff	0	0.0
Hospitalizations		% (of cases per role)
Residents	71	7.1
Staff	0	0.0

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [19/03/2008]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – March 22, 2008

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2007 – March 22, 2008 by causative organism

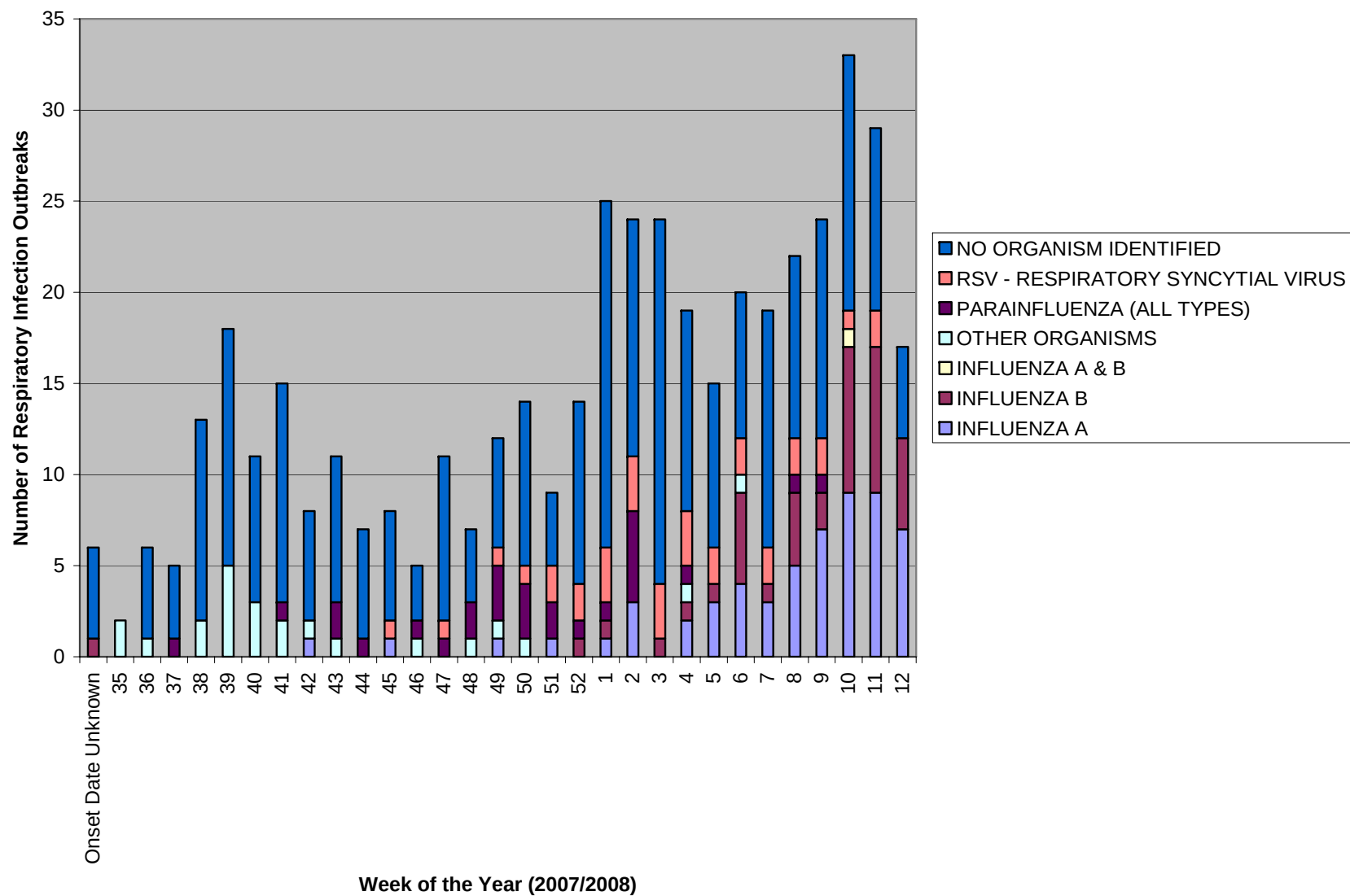
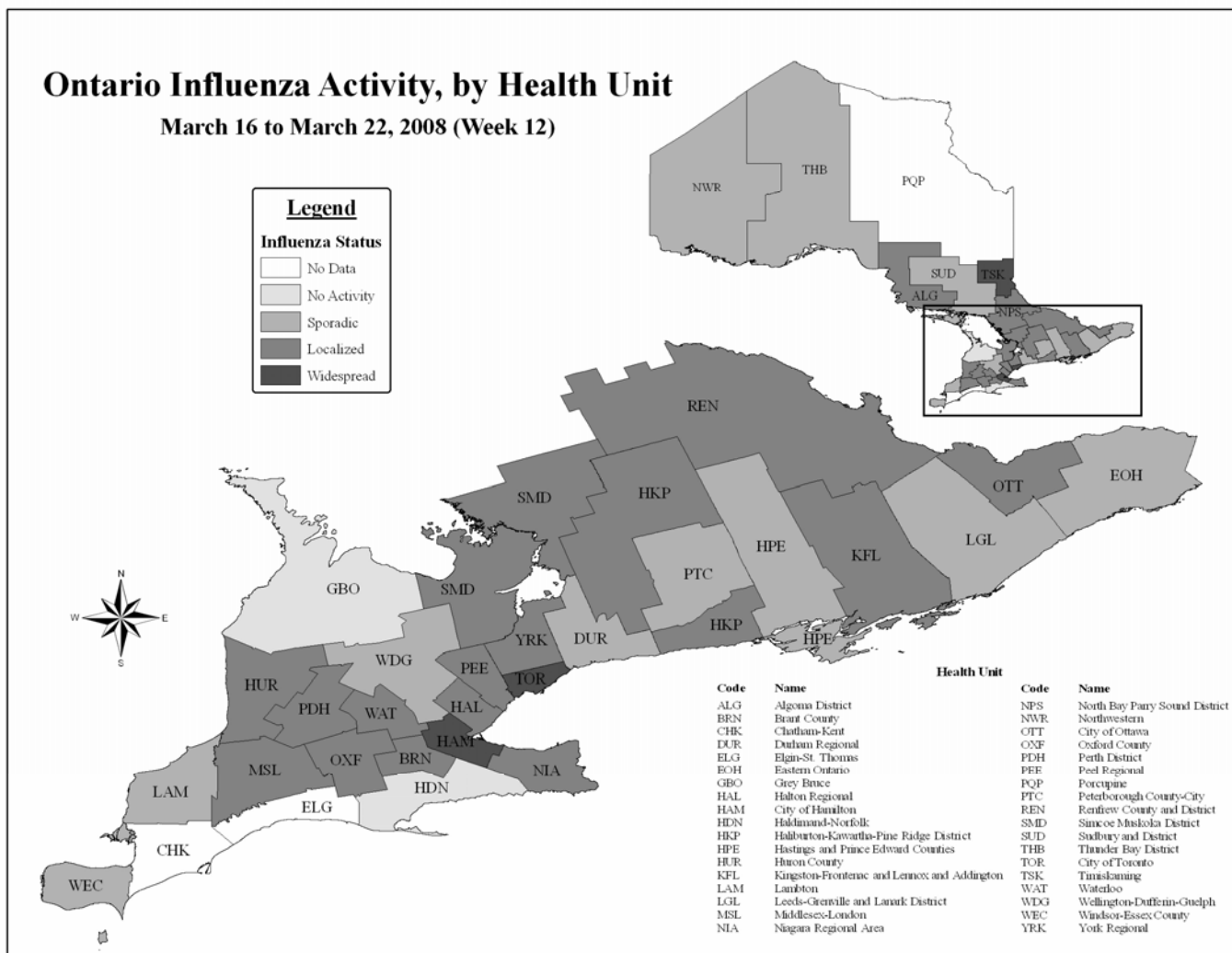


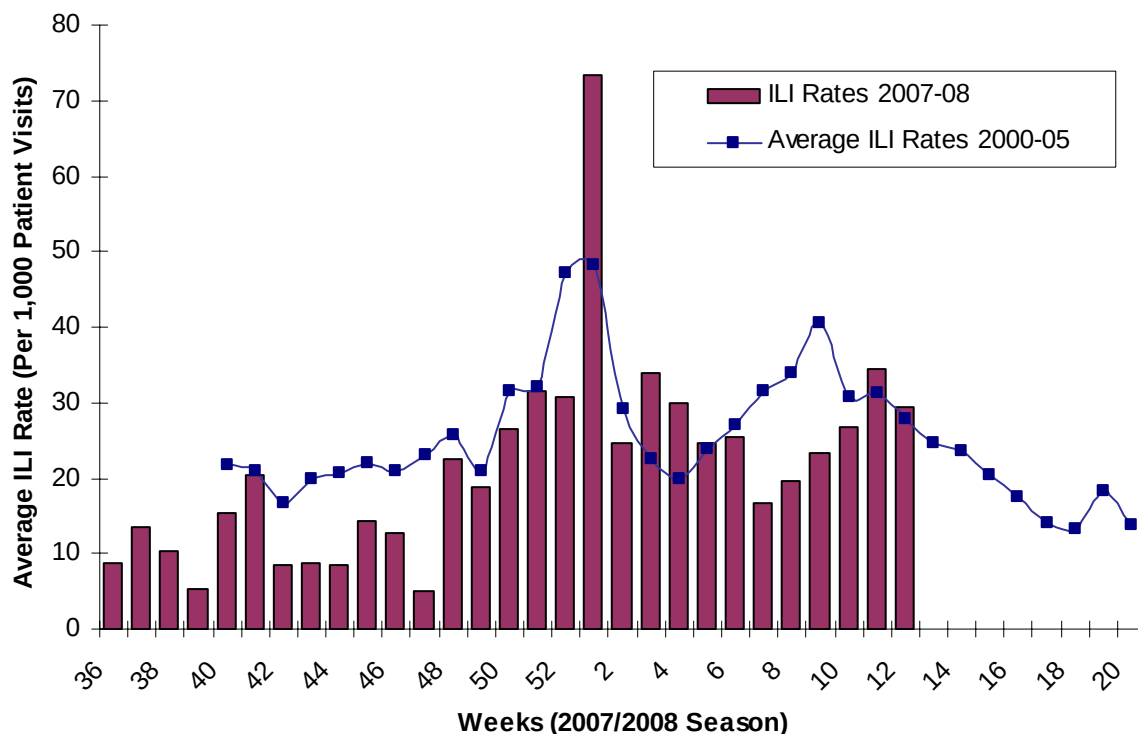
Figure 3: Influenza Activity* levels in Ontario by health unit for Week 12, 2008



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 12.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0C1A0	0	0	0	0	0
K1L8H2	0	0	0	0	0
K2P1V3	0	0	0	0	0
K1J9M2	0	0	0	0	0
K7H2W6	0	0	0	0	0
K0K2T0	0	0	1	0	0
K0M1A0	0	0	0	0	0
L1S2H6	0	0	0	0	0
L1B1H8	0	0	0	0	0
L4L4Y7	0	0	0	0	0
L4J7Y3	0	0	0	0	0
L4C2N9	0	0	0	0	0
L4G7Y3	0	0	0	0	0
M5M1B2	0	0	0	0	0
M4X1W4	0	0	0	0	0
M6G4A1	0	0	0	0	0
M4E1V8	0	0	0	0	0
M8Y1W3	0	0	0	0	0
M4M3P3	0	0	0	0	0
M2J2Z1	0	0	0	0	0
M2K1E1	0	0	0	0	0
M9W6N5	0	0	0	0	0
M8V2Z5	0	0	0	0	0
L6J2W4	0	0	1	1	0
L6W2A4	0	0	2	0	0
L9W1G2	0	0	0	0	0
L6L2X4	0	0	1	0	0
L6J1X8	0	0	0	0	0
L9H1V1	0	0	0	0	0
L0R1H2	0	0	2	0	0
L8W3J6	0	0	0	0	0
L2E7H1	0	0	0	0	0
N3R7K8	0	0	0	0	0
N1R2L7	0	0	2	0	0
N2G1P2	0	0	1	0	0
N2M3B5	0	0	1	0	0
N5H1K9	0	0	0	0	0
N0L1Z0	2	1	2	0	0
N6C2R5	0	0	0	0	0
N0M1L0	2	1	8	1	0
N0C1E0	0	0	0	0	0
L3V5W5	0	0	0	0	0
L4R4P4	0	0	0	0	0
P0A1C0	0	0	2	0	0
P0M2L0	0	0	0	0	0
P4N1C6	0	0	0	0	0
P0S1K0	3	0	2	0	0
P0M1Z0	0	0	0	0	0
P7E1H5	0	0	0	0	0
P0W1E0	0	0	0	0	0
ILI Sum	7	2	25	2	0
ILI Consultation Rate (per 1,000 patient visits)	70.00	18.69	35.77	6.31	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
WK13	23-Mar-08	29-Mar-08	1-Apr-08
WK14	30-Mar-08	5-Apr-08	8-Apr-08
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