

SURVEILLANCE WEEK 22-23 (May 25, 2008– June 7, 2008)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from May 25, 2008-June 7, 2008, (Weeks 22 & 23). The analysis for this issue occurred on Thursday June 12, 2008, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during weeks 22 & 23, 2008 was lower than weeks 20 & 21, 2008. There were 14 confirmed cases of influenza A and 7 confirmed cases of influenza B reported through iPHIS from health units. There was one new report of an institutional influenza outbreak. For week 23, the majority of health regions level of influenza activity was 'sporadic', with the exception of Central East and Toronto, which reported 'localized' influenza activity.

In Canada for weeks 21 & 22, influenza activity continued to decline. The majority of the provinces and all of the territories reported only either sporadic activity or no activity in their regions. However, a few regions still reported localized influenza activity in those weeks.[†]

Institutional Outbreaks: Data Entry Reminder

Please ensure when entering confirmed institutional outbreaks using the iPHIS summary outbreak functionality, that the **total number of cases** is entered along with the aetiologic agent (if known) **within 1 business day of outbreak notification**. 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 (Weeks 22 & 23, 2008).

Confirmed influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	0	0	2	10	0	2	14
Influenza B	0	0	0	5	2	0	0	7
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	0	0	0	7	12	0	2	21
Institutional influenza outbreaks‡	0	0	0	0	0	0	0	0

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [12/06/2008].

* 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 Weeks 21 & 22, 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 Weeks 22 & 23, 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	0	0
	North Bay Parry Sound District	0	0	0
	Porcupine	0	0	0
	Sudbury & District	0	0	0
	Timiskaming	0	0	0
	TOTAL NORTH EAST	0	0	0
Eastern	City of Ottawa	0	0	0
	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	0	0	0
	Kingston, Frontenac, Lennox & Addington	0	0	0
	Leeds, Grenville And Lanark District	0	0	0
	Renfrew County And District	0	0	0
	TOTAL EASTERN	0	0	0
Central East	Durham Region	0	0	0
	Haliburton, Kawartha, Pine Ridge	0	0	0
	Peel Region	0	2	2
	Peterborough County-City	1	0	1
	Simcoe Muskoka District	1	3	4
	York Region	0	0	0
	TOTAL CENTRAL EAST	2	5	7
Toronto	Toronto	10	2	12
	TOTAL TORONTO	10	2	12
South West	Chatham-Kent	0	0	0
	Elgin-St. Thomas	0	0	0
	Grey Bruce	0	0	0
	Huron County	0	0	0
	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	0	0	0
Central West	Brant County	2	0	2
	City Of Hamilton	0	0	0
	Haldimand-Norfolk	0	0	0
	Halton Region	0	0	0
	Niagara Region	0	0	0
	Waterloo Region	0	0	0
	Wellington-Dufferin-Guelph	0	0	0
	TOTAL CENTRAL WEST	2	0	2
	TOTAL ONTARIO	14	7	21

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [12/06/2008].

[†] 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 – June 7, 2008

Region	Health Unit	Confirmed Influenza			
		Influenza A	Influenza B	Influenza A & B	TOTAL
North West	Northwestern	32	0		32
	Thunder Bay District	20	4		24
	TOTAL NORTH WEST	52	4		56
North East	Algoma	27	18		45
	North Bay Parry Sound District	52	32		84
	Porcupine	10	1		11
	Sudbury & District	20	16		36
	Timiskaming	13	13		26
	TOTAL NORTH EAST	122	80		202
Eastern	City Of Ottawa	91	161		252
	Eastern Ontario	20	29		49
	Hastings & Prince Edward Counties	22	25		47
	Kingston, Frontenac, Lennox & Addington	31	33		64
	Leeds, Grenville And Lanark District	12	24		36
	Renfrew County And District	9	17		26
	TOTAL EASTERN	185	289		474
Central East	Durham Region	84	60		144
	Haliburton, Kawartha, Pine Ridge	64	71		135
	Peel Region	351	183		534
	Peterborough County-City	68	62		130
	Simcoe Muskoka District	171	98		269
	York Region	121	106	1	228
	TOTAL CENTRAL EAST	859	580	1	1,440
Toronto	Toronto	850	621	3	1,474
	TOTAL TORONTO	850	621	3	1,474
South West	Chatham-Kent	11	12		23
	Elgin-St. Thomas	10	4		14
	Grey Bruce	49	20		69
	Huron County	67	20		87
	Lambton County	24	8		32
	Middlesex-London	53	11		64
	Oxford County	24	5		29
	Perth District	24	32		56
	Windsor-Essex County	34	46		80
	TOTAL SOUTHWEST	296	158		454
Central West	Brant County	9	12		21
	City Of Hamilton	219	109		328
	Haldimand-Norfolk	21	8		29
	Halton Region	110	72		182
	Niagara Region	85	27		112
	Waterloo Region	146	77		223
	Wellington-Dufferin-Guelph	75	48		123
	TOTAL CENTRAL WEST	665	353		1,018
	TOTAL ONTARIO	3,029	2,085	4	5,118

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [12/06/2008].

* 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 weeks 22 & 23, 3383 isolates were received by the Public Health Agency of Canada, with 33 testing positive for influenza A and 39 for influenza B. Among the reported influenza A isolates, 16 were from Alberta (48.5%) and 9 were from Ontario (27.3%), and 7 were from Quebec (21.2%) among the reported influenza B isolates, 19 were from Ontario (48.7%), 12 were from Quebec (30.8%) and 7 were from Alberta (18.0%).*

Antigenic Characterization:

The National Microbiology Laboratory (NML) has characterized 1,334 influenza viruses for the 2007-2008 influenza season: 463 (35%) A(H1N1), 231 (17%) A(H3N2) and 640 (48%) B viruses. Of the 463 influenza A(H1N1) viruses characterized, 441 (95%) were antigenically similar to A/Solomon Islands/3/2006 and 22 (5%) were antigenically similar to A/Brisbane/59/2007. Of the 231 influenza A(H3N2) viruses characterized, 12 (5%) were antigenically similar to A/Wisconsin/67/2005 and 219 (95%) were antigenically similar to A/Brisbane/10/2007. One of the 12 A/Wisconsin-like viruses had reduced titer to A/Wisconsin/67/2005 reference antiserum. Of the 640 influenza B isolates characterized, 17 (3%) were antigenically similar to B/Malaysia/2506/2004 and 623 (97%) 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 979 influenza A isolates (545 H1N1 and 434 H3N2) for amantadine resistance and found that 432 (99.5%) of the 434 H3N2 isolates were resistant to amantadine and 6 (1%) of 545 H1N1 isolates were resistant.

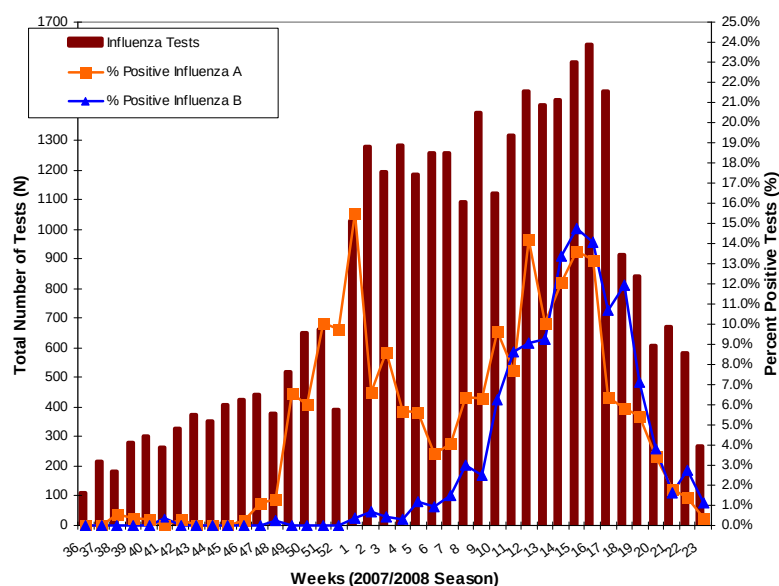
The NML has also tested 1,348 influenza isolates (486 A/H1N1, 231 A/H3N2 & 631 B) for oseltamivir (Tamiflu) resistance and found that 127 (26%) of the 486 H1N1 isolates tested were resistant to oseltamivir. Resistant isolates were detected in all 10 provinces. Of the 127 resistant viruses, 123 were A/Solomon 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: Weeks 22 & 23, 2008

** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Weeks 21 & 22, 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 22 & 23 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A	1	16.7
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	1	16.7
RSV	0	0.0
Other organisms	0	9.0
No organism identified	4	54.6
TOTAL	6	100
Total Respiratory Infection Outbreaks of the Season to date**	N	% (of outbreaks)
Influenza A	149	18.8
Influenza B	148	18.7
Influenza A and B	15	1.9
Parainfluenza (All types)	33	4.2
RSV	48	6.1
Combined Outbreaks [†]	0	0.0
Other organisms	27	3.4
No organism identified	371	46.9
TOTAL	791	100
Types of Institutions (All Outbreaks) **	N	% (of outbreaks)
Long-Term Care Homes	457	57.8
Hospitals	35	4.4
Retirement Homes	75	9.5
Other	10	1.3
Unknown	214	27.1
TOTAL	791	100

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [12/06/2008]

* 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. May 25, 2008 – June 7, 2008

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – June 7, 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	9846	72.1
Patients	497	3.6
Staff	3279	24.0
Total Cases	13664	100
Deaths		% (of cases per role)
Residents	289	2.9
Patients	14	2.8
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	423	4.3
Patients	23	4.6
Staff	15	0.5
Hospitalizations		% (of cases per role)
Residents	516	5.2
Staff	8	0.2
Outbreak Related Complications (Influenza Outbreaks)	N	% (of total cases)
Total Cases		
Residents	3881	70.7
Patients	153	2.8
Staff	1437	26.2
Total Cases	5491	100
Deaths		% (of cases per role)
Residents	173	4.5
Patients	4	2.6
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	222	5.7
Patients	10	6.5
Staff	11	0.8
Hospitalizations		% (of cases per role)
Residents	306	7.9
Staff	7	0.5

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [12/06/2008]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – June 7, 2008

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

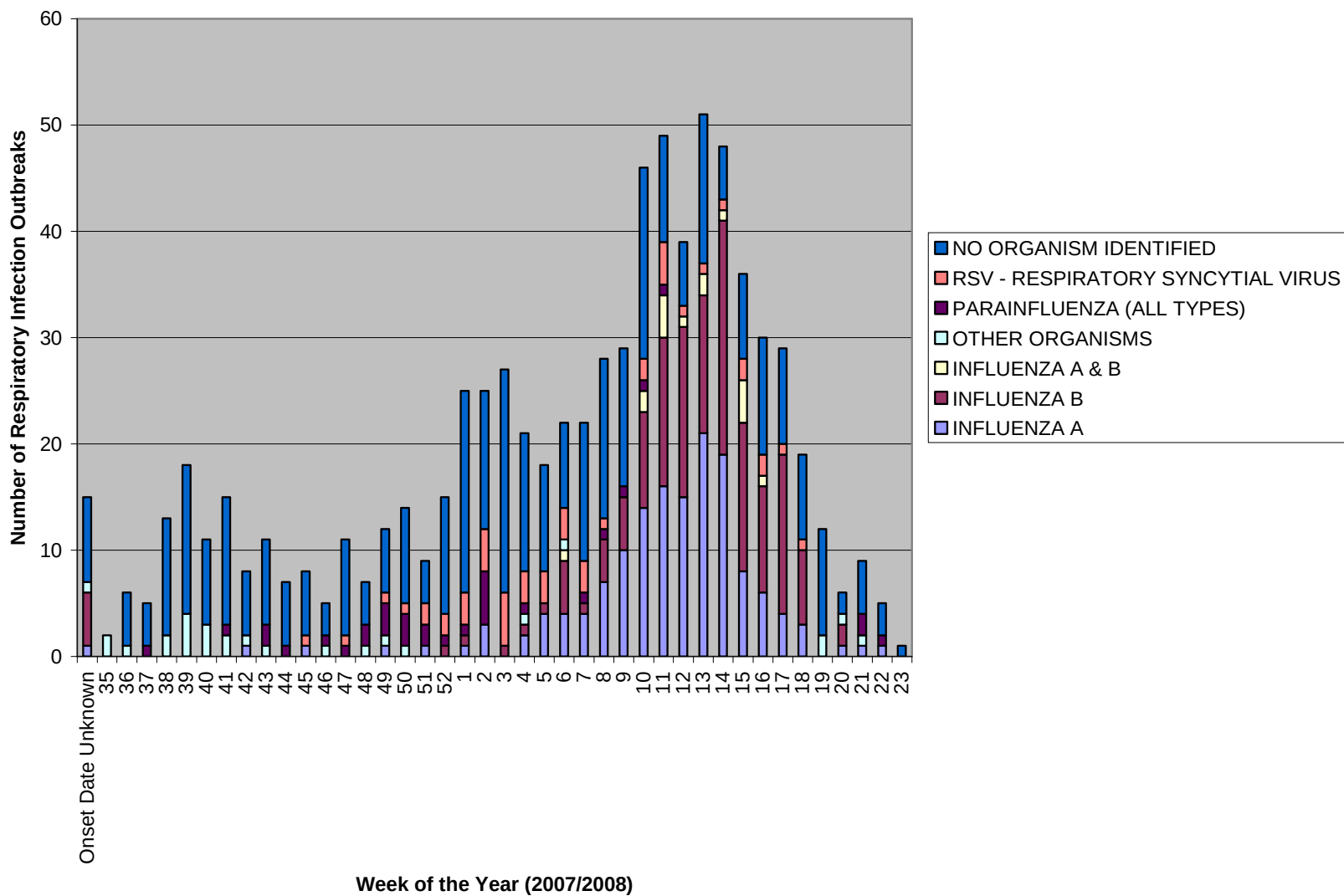
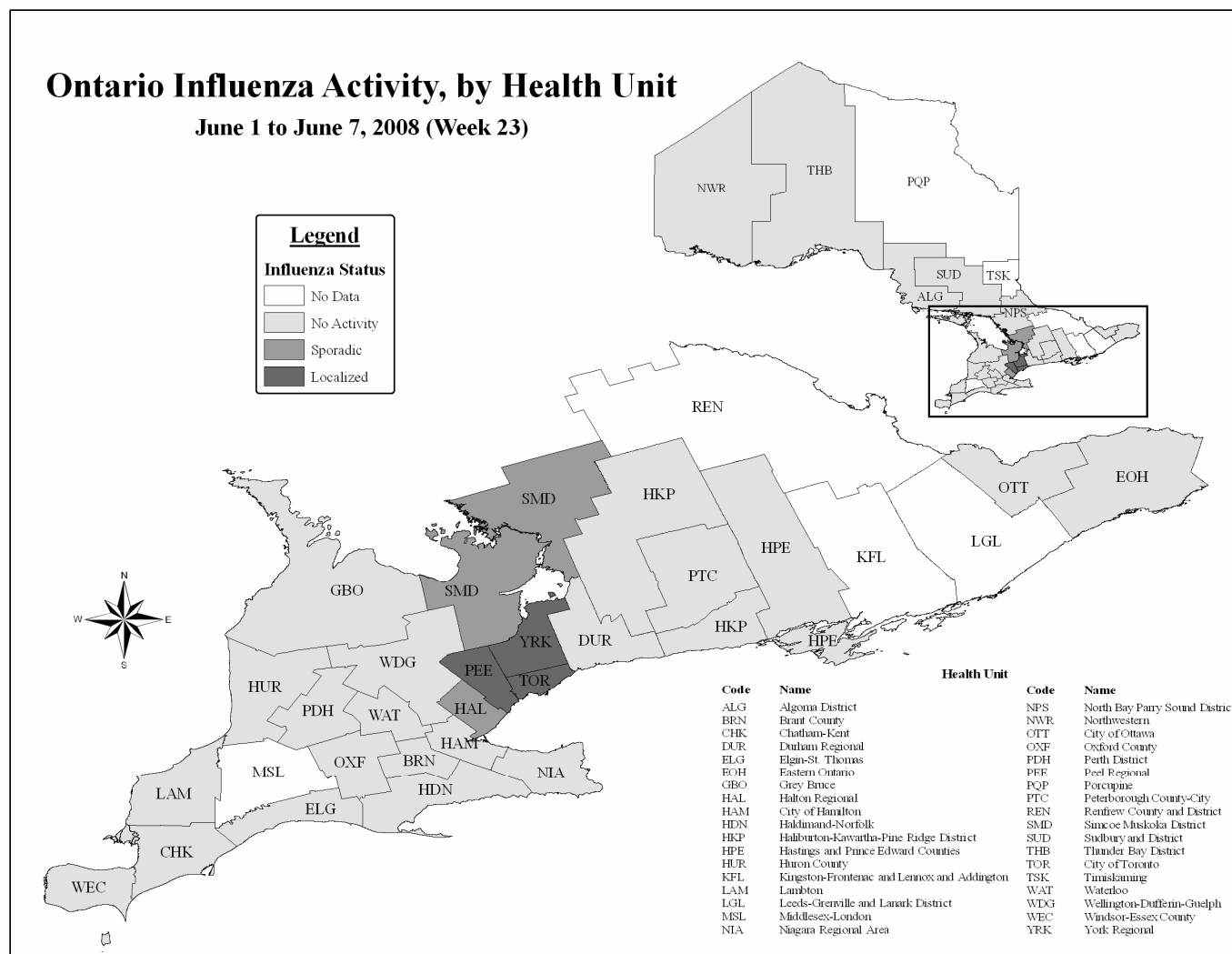


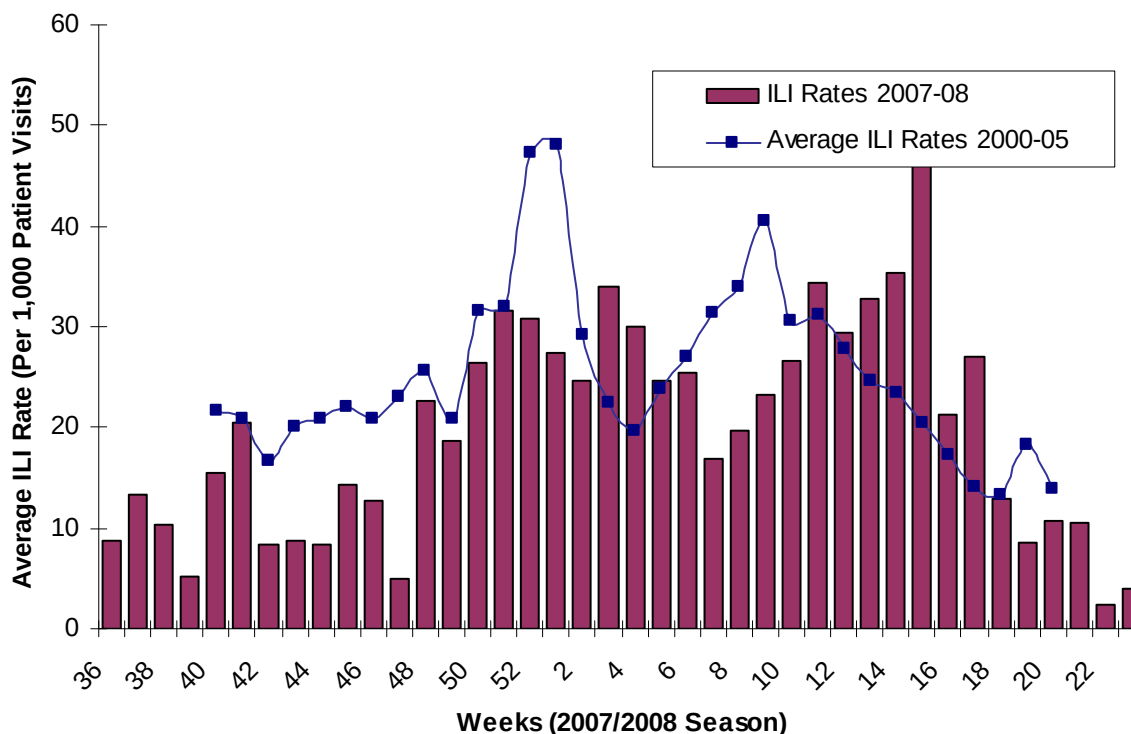
Figure 3: Influenza Activity* levels in Ontario by health unit for Week 23, 2008



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 23.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0C1A0	0	0	0	0	0
K2P1V3	0	0	0	0	0
K1J9M2	0	0	0	0	0
L1A3W4	0	0	0	0	0
K0L1H0	0	0	0	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
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
M4M3P3	0	0	0	0	0
L4Y2N8	0	0	0	0	0
L6W2A4	1	0	2	0	0
L9W1G2	0	0	0	0	0
L6L2X4	0	0	0	0	0
L9H1V1	0	0	0	0	0
L2E7H1	0	0	0	0	0
N1R2L7	0	0	0	0	0
N2M3B5	0	0	0	0	0
N6C2R5	0	0	0	0	0
N0C1E0	0	0	0	0	0
P0P1S0	0	0	0	0	0
P0M2L0	0	0	0	0	0
P4N1C6	0	0	0	0	0
P7E1H5	0	0	0	0	0
P0W1E0	0	0	0	0	0
P9N3W7	0	0	0	0	0
P8N2Z6	0	0	0	0	0
ILI Sum	1	0	2	0	0
ILI Consultation Rate (per 1,000 patient visits)	19.23	0.00	4.52	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.

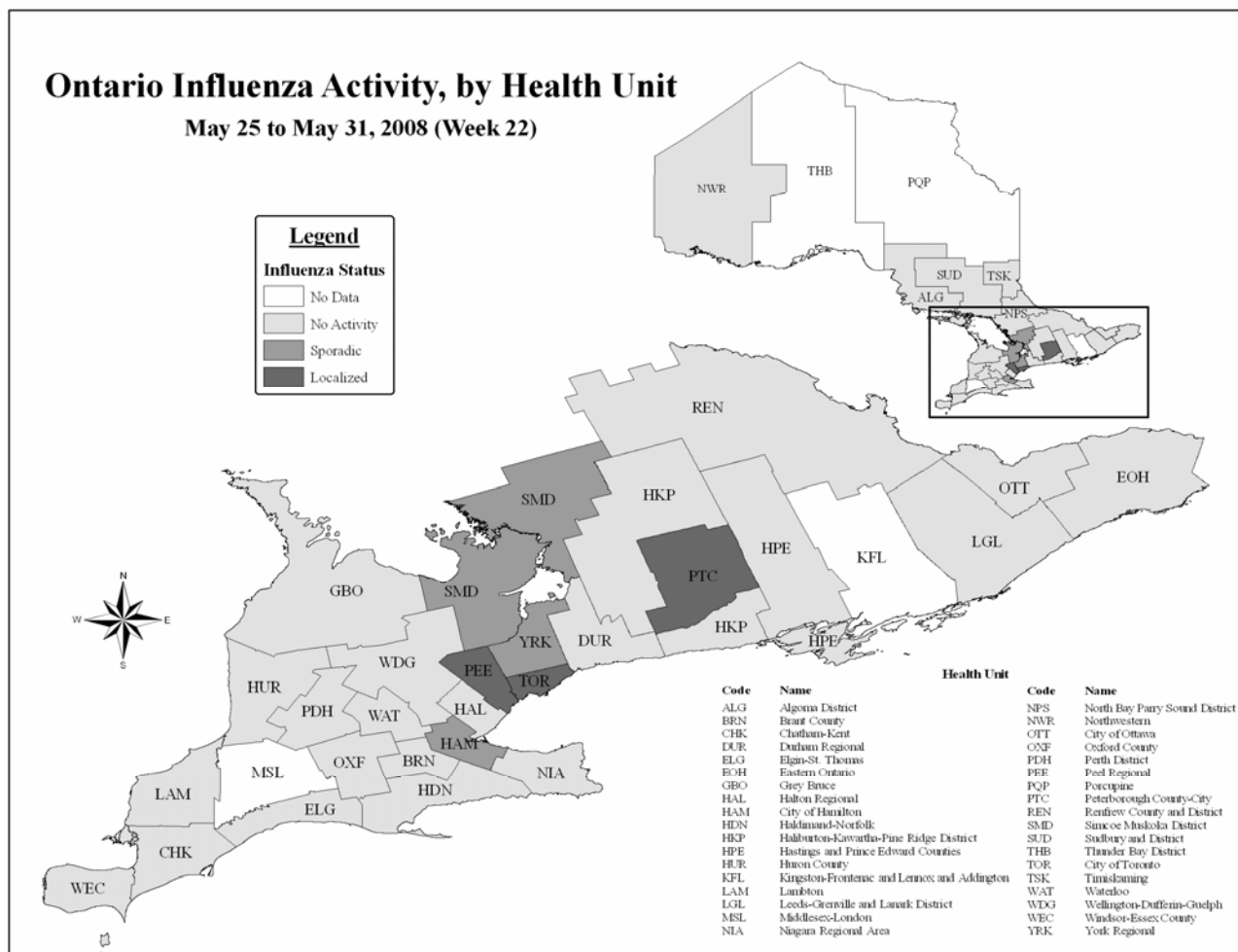
B) ILI/Influenza outbreaks:

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
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



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

Influenza Activity levels are assigned by local public health units and reported to the MOHLTC every week. Activity levels are assigned based on laboratory confirmation of influenza, influenza like illness (ILI) reports from various sources including hospitals, institutions experiencing respiratory infection outbreaks, physicians' offices, etc.

Activity level definitions for the 2007-08 influenza seasons are as follows:

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 cases(s) or outbreak detected during the past week within the influenza surveillance region, however, sporadically occurring ILI may be reported. **Sporadic:** Sporadically occurring ILI and laboratory confirmed influenza* case(s) with NO outbreaks detected within the influenza surveillance region. **Localized:** sporadically occurring ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring in less than 50% of the influenza surveillance region(s). **Widespread:** sporadically occurring ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring in greater than or equal to 50% of the influenza surveillance region(s).

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

Note: The Weekly Ontario Influenza Activity Map will be posted on this site bi-weekly, alternating with the *Ontario Influenza Bulletin* (which contains the Influenza Activity map), until the end of October, 2008. As of November 3, 2008, the *Ontario Influenza Bulletin* will be published weekly.