



Ontario Influenza Bulletin 2007-2008 Season

SURVEILLANCE WEEK 38-39 (September 16– September 29) 2007

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from September 16 - September 29, 2007, (Weeks 38 & 39). The analysis for this issue occurred on Thursday October 4, 2007, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during weeks 38 and 39, 2007 was higher than weeks 36 and 37, 2007. One sporadically occurring case of influenza was reported through iPHIS from health units. There were no reports of institutional outbreaks of influenza. For weeks 38 and 39, the highest level of influenza activity in Ontario was 'localized' reported from Toronto health region.

The Bulletin will continue to be published on alternate weeks and the GIS map of influenza activity levels will be posted on 'non-Bulletin' weeks under 'Weekly Influenza Surveillance Maps' at the following link: http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_mn.html

Please continue to submit weekly activity reports weekly by 4 p.m. every Tuesday. Please refer to pages 13 & 14 for report submission dates.

Table 1: Summary of confirmed influenza cases and institutional influenza outbreaks by health region (Weeks 38 & 39, 2007).

Confirmed influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	0	0	0	1**	0	0	1
Influenza B	0	0	0	0	0	0	0	0
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	0	0	0	0	1	0	0	1
Institutional influenza outbreaks‡	0	0	0	0	0	0	0	0

SOURCE: MOHLTC [iPHIS, Health Unit Reports to PHD]

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

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

** This case had an episode date in Week 38 and is not reflected in the map of Influenza Activity Levels for Week 39.

Table 2: Confirmed cases of influenza by health unit & health region, with an episode date[†] during Weeks 38 & 39, 2007

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	0	0
	Peterborough County-City	0	0	0
	Simcoe Muskoka District	0	0	0
	York Region	0	0	0
	TOTAL CENTRAL EAST	0	0	0
Toronto	Toronto	1	0	1
	TOTAL TORONTO	1	0	1
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	0	0	0
	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
	TOTAL CENTRAL WEST	0	0	0
	TOTAL ONTARIO	1	0	1

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

[†] 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, 2006 – September 29, 2007

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	0	0
	Peterborough County-City	0	0	0
	Simcoe Muskoka District	0	0	0
	York Region	0	0	0
	TOTAL CENTRAL EAST	0	0	0
Toronto	Toronto	3	0	3
	TOTAL TORONTO	3	0	3
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	0	0	0
	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	0	0	0
	TOTAL ONTARIO	3	0	3

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* 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)

Influenza Subtype(s):

During Weeks 38 and 39, 1979 isolates were received by the Public Health Agency of Canada, with two testing positive for influenza A (both from Ontario) and none testing positive for influenza B.*

Antigenic Characterization:

The National Microbiology Laboratory (NML) has not reported any influenza strain characterizations for the 2007-2008 influenza season. An updated set of figures for the 2006-07 season are now available: 276 (27%) A/New Caledonia/20/99-like, 628 (61%) A/Wisconsin/67/05-like, 13 (1%) B/Malaysia/2506/04-like and 111 (11%) B/Shanghai/361/2002-like.**

Antiviral Resistance:

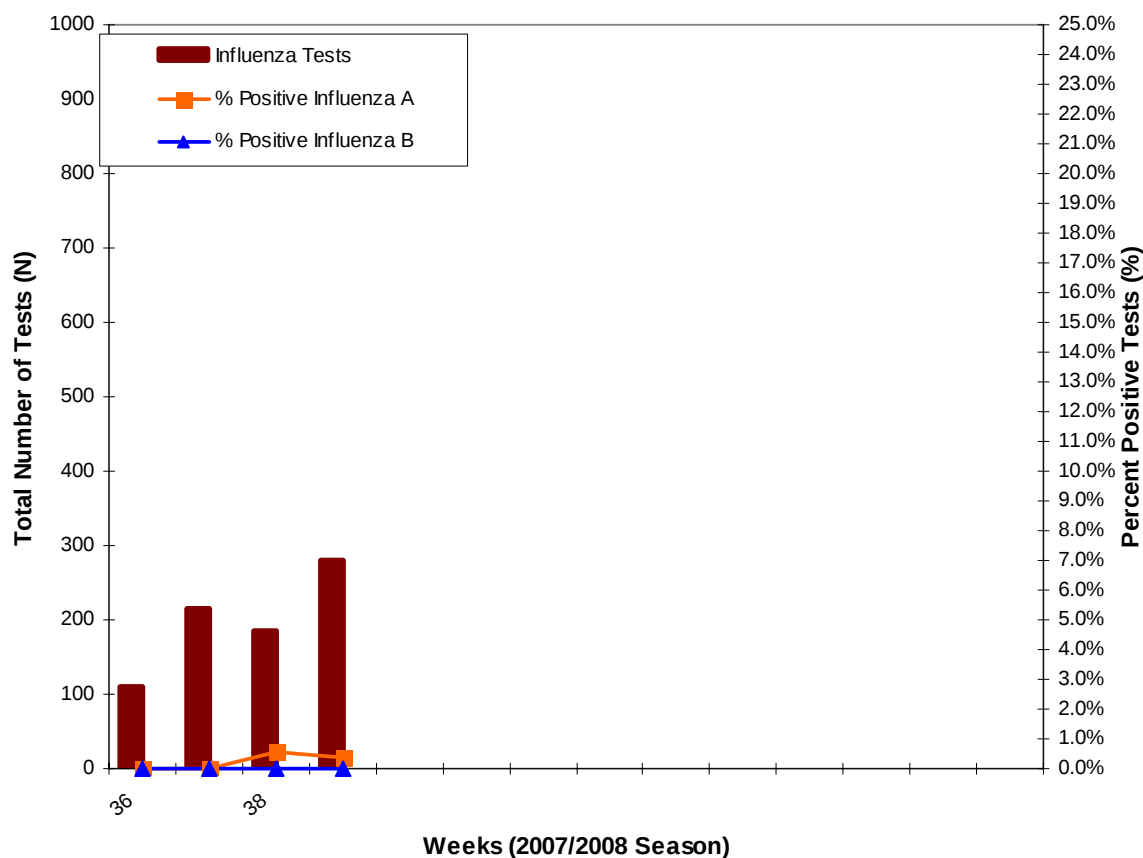
The NML has not reported any antiviral resistance for the 2007-2008 influenza season. **

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.

* These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada: Weeks 38 & 39, 2007.

** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Week 37-38, 2007.

Figure 1: Total number of influenza tests performed and percent of positive tests in Ontario reported to the Centre for Infectious Disease Prevention and Control (CIDPC), 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 Weeks 38 & 39 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A	0	0.0
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Other organisms	1	16.7
No organism identified	5	83.3
TOTAL	6	100
Total Respiratory Infection Outbreaks of the Season to date**	N	% (of outbreaks)
Influenza A	0	0.0
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Combined Outbreaks [†]	0	0.0
Other organisms	5	20.0
No organism identified	20	80.0
TOTAL	25	100
Types of Institutions (All Outbreaks) **	N	% (of outbreaks)
Long-Term Care Homes	11	44.0
Hospitals	0	0.0
Retirement Homes	2	8.0
Other	1	4.0
Unknown	11	44.0
TOTAL	25	100

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* 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. September 16 – September 29, 2007

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – September 29, 2007

[†] 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	246	77.4
Patients	7	2.2
Staff	65	20.4
Total Cases	318	100
Deaths		% (of cases per role)
Residents	2	0.8
Patients	0	0.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	5	2.0
Patients	0	0.0
Staff	0	0.0
Hospitalizations		% (of cases per role)
Residents	5	2.0
Staff	0	0.0
Outbreak Related Complications (Influenza Outbreaks)	N	% (of total cases)
Total Cases		
Residents	0	0.0
Patients	0	0.0
Staff	0	0.0
Total Cases	0	100
Deaths		% (of cases per role)
Residents	0	0.0
Patients	0	0.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	0	0.0
Patients	0	0.0
Staff	0	0.0
Hospitalizations		% (of cases per role)
Residents	0	0.0
Staff	0	0.0

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – September 29, 2007

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2007 – September 29, 2007 by causative organism

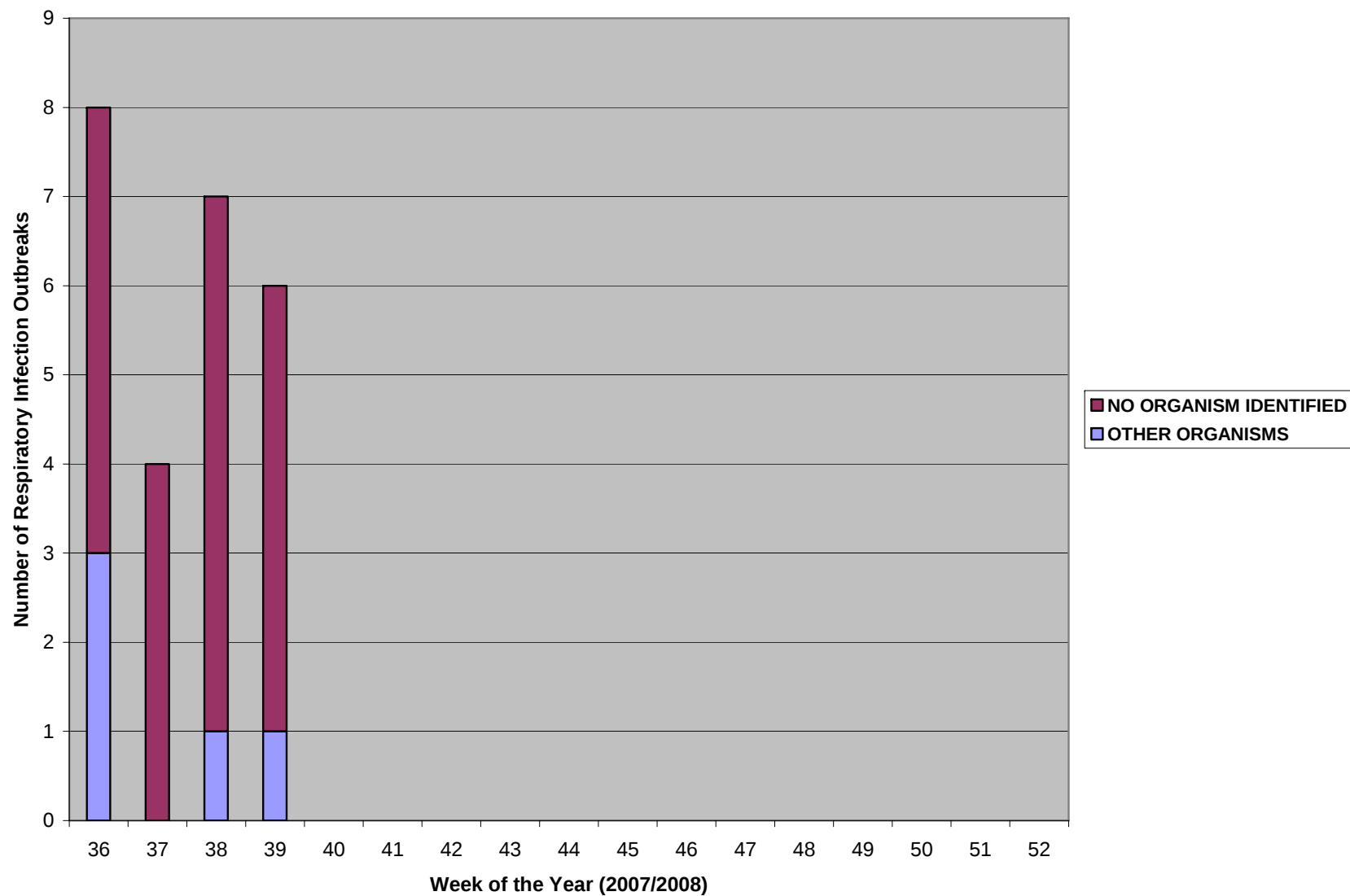
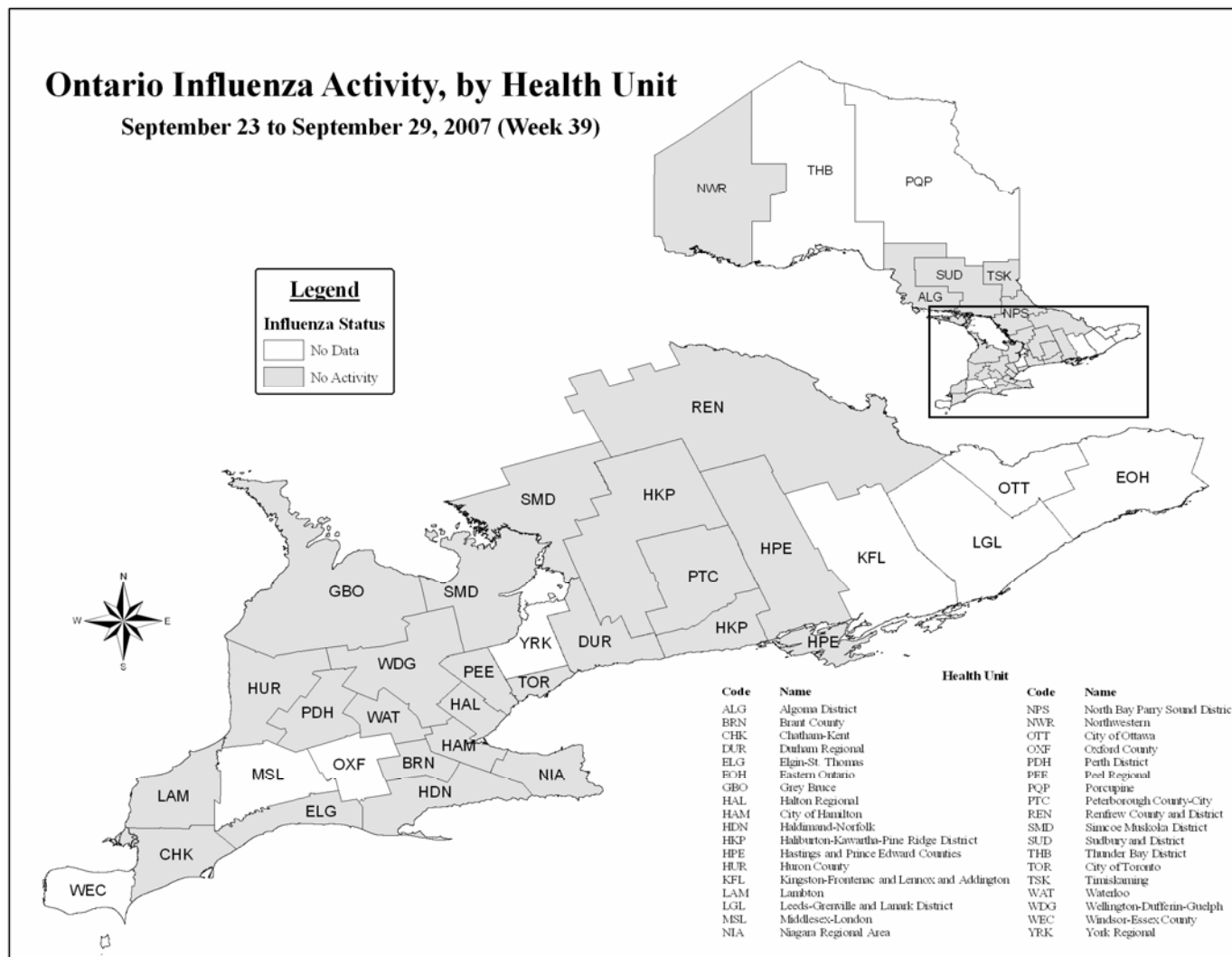


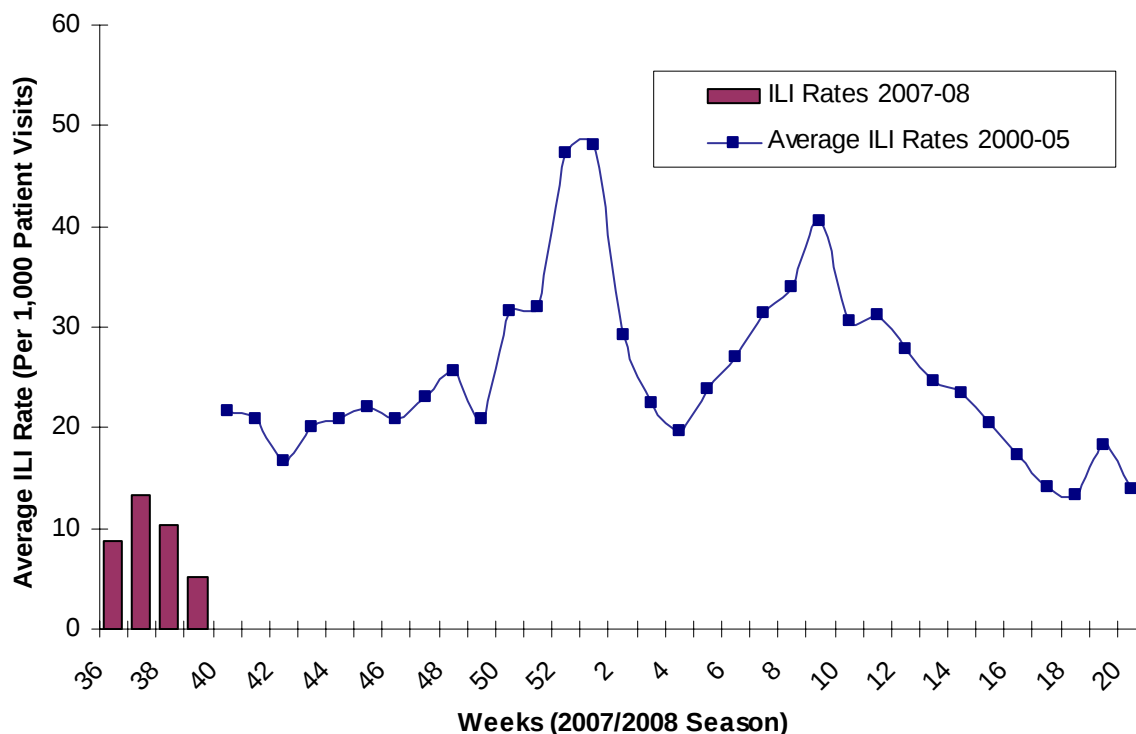
Figure 3: Influenza Activity* levels in Ontario by health unit & health region for Week 39



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 2006-2007 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 5: 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 38.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K1L8H2	0	0	1	0	0
K2L3C8	0	0	0	0	0
K2P1V3	0	0	0	0	0
K1J9M2	1	1	0	0	0
L1A3W4	0	0	0	0	0
K0M1A0	0	0	0	0	0
L4J7Y3	0	0	0	0	0
L4G7Y3	0	0	1	0	0
M4X1W4	0	0	0	0	0
M4E1V8	0	0	0	0	0
M8Y1W3	0	0	0	0	0
M3H1T1	0	0	0	0	0
L4Y2N8	0	0	0	0	0
L6W2A4	1	0	0	0	0
L9W1G2	0	0	0	0	0
L6L2X4	0	0	0	0	0
L7R1M6	0	0	0	0	0
L9H1V1	0	0	0	0	0
L9H2G2	0	0	0	0	0
L2E1Y3	0	0	0	0	0
N2M3B5	0	0	1	1	0
N5C1G5	0	0	0	0	0
N5H1K9	0	0	0	0	0
N0M1T0	0	0	0	0	0
N6C2R5	0	0	0	0	0
N0G1L0	0	0	0	1	0
N0C1E0	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
ILI Sum	2	1	3	2	0
ILI Consultation Rate (per 1,000 patient visits)	37.04	13.51	7.09	8.81	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.

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 39.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
J0C1A0	0	0	0	0	0
K1L8H2	1	0	0	0	0
K2L3C8	0	0	0	0	0
K2P1V3	0	0	0	0	0
K1J9M2	0	0	0	0	0
L1A3W4	0	0	1	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
M8Y1W3	0	0	0	0	0
M3H1T1	0	0	0	0	0
L4Y2H8	0	0	0	0	0
L6W2A4	0	1	1	0	0
L9W1G2	0	0	0	0	0
L9H1V1	0	0	0	0	0
L9H2G2	0	0	0	0	0
L2E1Y3	0	0	0	0	0
N1R7L7	0	0	0	0	0
N2M3B5	0	0	0	0	0
N0M1T0	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
E9N3W7	0	0	0	0	0
ILI Sum	1	1	2	0	0
ILI Consultation Rate (per 1,000 patient visits)	17.86	13.51	4.48	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>

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.

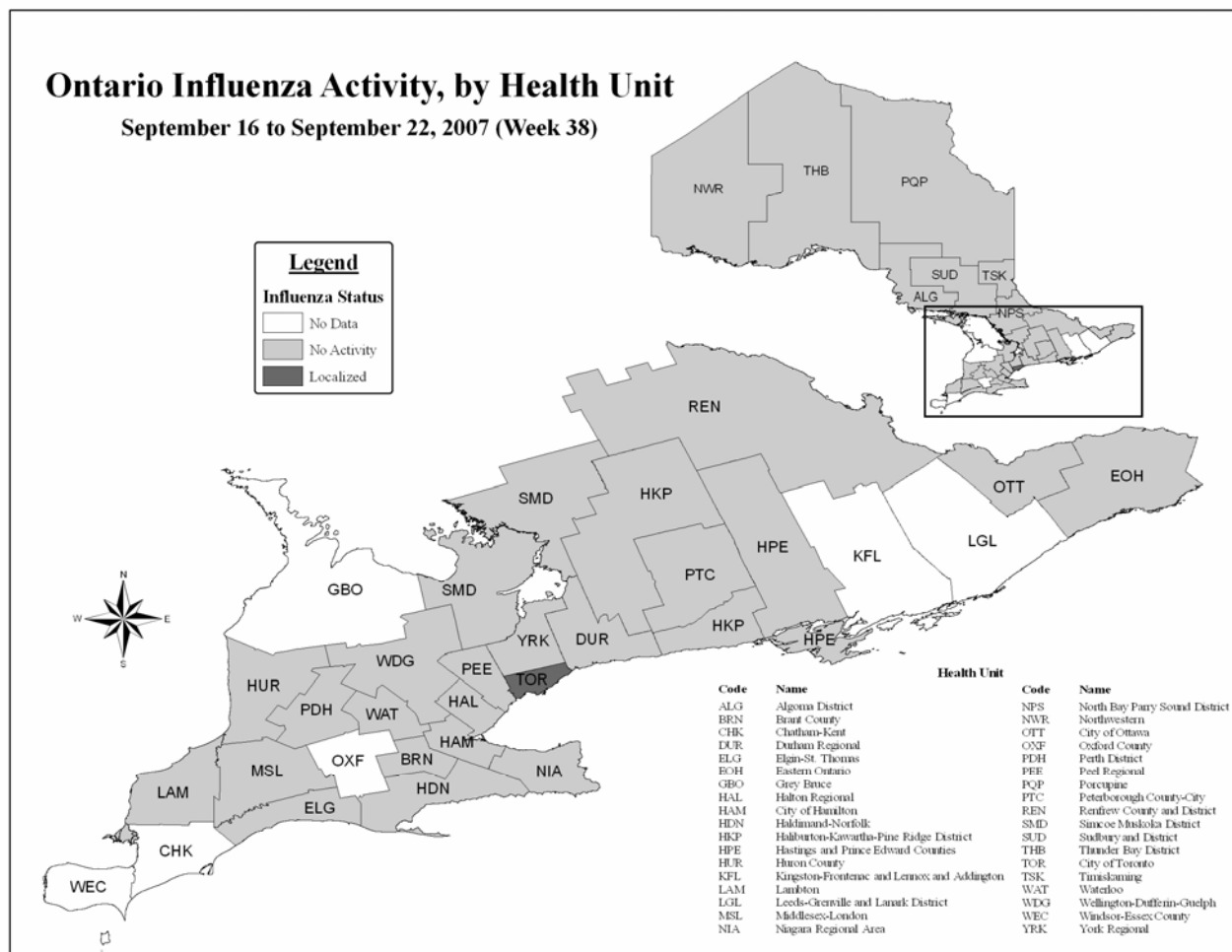
Residential institutions: two or more cases of ILI within a seven-day period, **including at least one laboratory confirmed case.**

Influenza Surveillance Weeks 2007-2008 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
WK40	30-Sep-07	6-Oct-07	9-Oct-07
WK41	7-Oct-07	13-Oct-07	16-Oct-07
WK42	14-Oct-07	20-Oct-07	23-Oct-07
WK43	21-Oct-07	27-Oct-07	30-Oct-07
WK44	28-Oct-07	3-Nov-07	6-Nov-07
WK45	4-Nov-07	10-Nov-07	13-Nov-07
WK46	11-Nov-07	17-Nov-07	20-Nov-07
WK47	18-Nov-07	24-Nov-07	27-Nov-07
WK48	25-Nov-07	1-Dec-07	4-Dec-07
WK49	2-Dec-07	8-Dec-07	11-Dec-07
WK50	9-Dec-07	15-Dec-07	18-Dec-07
WK51	16-Dec-07	22-Dec-07	25-Dec-07
WK52	23-Dec-07	29-Dec-07	1-Jan-08
WK1	30-Dec-07	5-Jan-08	8-Jan-08
WK2	6-Jan-08	12-Jan-08	15-Jan-08
WK3	13-Jan-08	19-Jan-08	22-Jan-08
WK4	20-Jan-08	26-Jan-08	29-Jan-08
WK5	27-Jan-08	2-Feb-08	5-Feb-08
WK6	3-Feb-08	9-Feb-08	12-Feb-08
WK7	10-Feb-08	16-Feb-08	19-Feb-08
WK8	17-Feb-08	23-Feb-08	26-Feb-08
WK9	24-Feb-08	1-Mar-08	4-Mar-08
WK10	2-Mar-08	8-Mar-08	11-Mar-08
WK11	9-Mar-08	15-Mar-08	18-Mar-08
WK12	16-Mar-08	22-Mar-08	25-Mar-08
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

Ontario Influenza Bulletin, 2007-2008
Surveillance Week 38 & 39 (September 16 – September 29 2007)

WEEKS	START	END	Appendix C Submission to MOHLTC
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*** 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

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, 2007. As of November 4, 2007, the *Ontario Influenza Bulletin* will be published weekly.