

SURVEILLANCE WEEK 53 (December 28, 2008– January 3, 2008)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from December 28, 2008-January 3, 2008, (Week 53). The analysis for this issue occurred on Thursday January 8, 2008, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during week 53, 2008 was higher than week 52, 2008. There were 37 confirmed cases of influenza reported through iPHIS from health units. There was one new report of an institutional influenza A outbreak. For week 53, Toronto health region reported 'localized' level activity while the remaining health regions reported 'sporadic' level activity with the exception of North West region, which reported no influenza activity.

In Canada for week 52, influenza activity remained low with the majority of the influenza surveillance regions reporting 'no activity'. Sixteen regions (in British Columbia, Quebec, Ontario & Alberta) reported 'sporadic' influenza activity and localized activity was reported in the central region in Alberta.[†]

**From December 28, 2008 to January 7, 2009 the one influenza A isolate that was received by the Central Public Health Laboratory was subtyped as H1N1.
The isolate was received from the Toronto area.**

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 53, 2008-09).

Confirmed influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	0	0	10	3	0	2	15
Influenza B	0	8	1	4	7	1	1	22
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	0	8	1	14	10	1	3	37
Institutional influenza outbreaks‡	0	0	0	0	1	0	0	1

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/01/2009].

* 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 52, 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 53, 2008-09

Region	Health Unit	Confirmed Influenza			
		Influenza A	Influenza A & B	Influenza B	TOTAL
North West	Northwestern	0	0	0	0
	Thunder Bay District	0	0	0	0
	TOTAL NORTH WEST	0	0	0	0
North East	Algoma	0	0	3	3
	North Bay Parry Sound District	0	0	4	4
	Porcupine	0	0	1	1
	Sudbury & District	0	0	0	0
	Timiskaming	0	0	0	0
	TOTAL NORTH EAST	0	0	8	8
Eastern	City of Ottawa	0	0	1	1
	Eastern Ontario	0	0	0	0
	Hastings & Prince Edward Counties	0	0	0	0
	Kingston, Frontenac, Lennox & Addington	0	0	0	0
	Leeds, Grenville And Lanark District	0	0	0	0
	Renfrew County And District	0	0	0	0
	TOTAL EASTERN	0	0	1	1
Central East	Durham Region	2	0		2
	Haliburton, Kawartha, Pine Ridge	0	0	0	0
	Peel Region	7	0	4	11
	Peterborough County-City	0	0	0	0
	Simcoe Muskoka District	1	0	0	1
	York Region	0	0	0	0
	TOTAL CENTRAL EAST	10	0	4	14
Toronto	Toronto	3	0	7	10
	TOTAL TORONTO	3	0	7	10
South West	Chatham-Kent	0	0	0	0
	Elgin-St. Thomas	0	0	0	0
	Grey Bruce	0	0	0	0
	Huron County	0	0	0	0
	Lambton County	0	0	0	0
	Middlesex-London	0	0	0	0
	Oxford County	0	0	1	1
	Perth District	0	0	0	0
	Windsor-Essex County	0	0	0	0
	TOTAL SOUTHWEST	0	0	1	1
Central West	Brant County	0	0	0	0
	City Of Hamilton	2	0	0	2
	Haldimand-Norfolk	0	0	1	1
	Halton Region	0	0	0	0
	Niagara Region	0	0	0	0
	Waterloo Region	0	0	0	0
	Wellington-Dufferin-Guelph	0	0	0	0
	TOTAL CENTRAL WEST	2	0	1	3
	TOTAL ONTARIO	15	0	22	37

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/01/2009].

[†] 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, 2008 – January 3, 2009

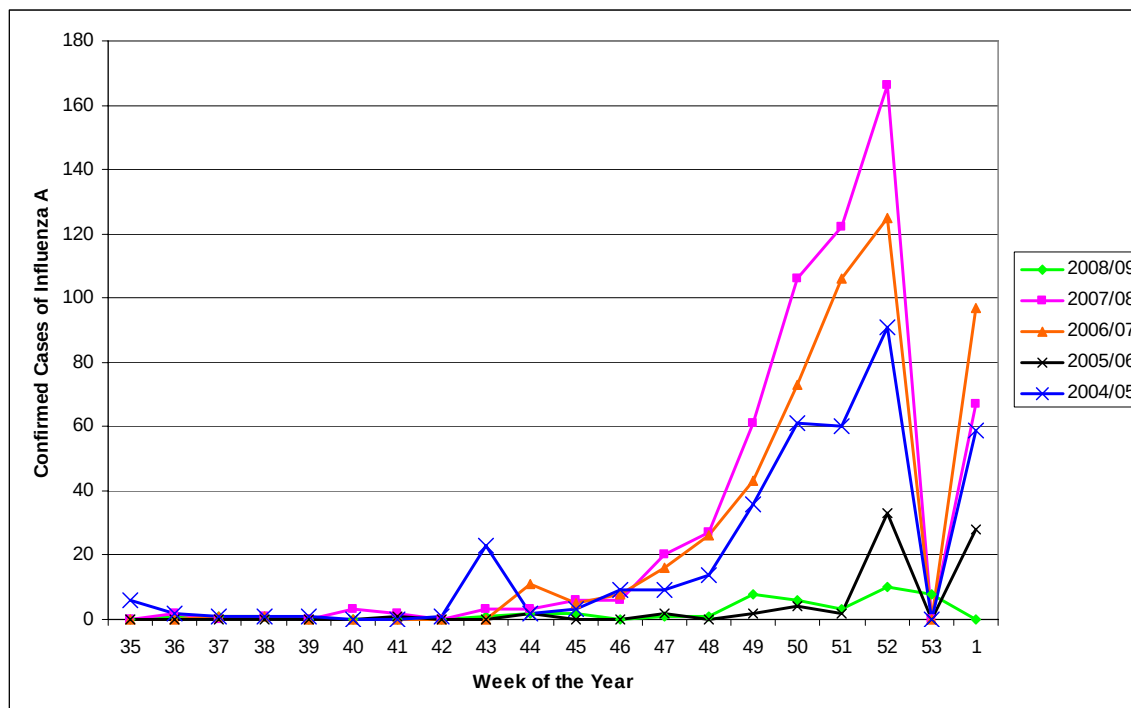
Region	Health Unit	Confirmed Influenza			
		Influenza A	Influenza A & B	Influenza B	TOTAL
North West	Northwestern	0	0	0	0
	Thunder Bay District	0	0	0	0
	TOTAL NORTH WEST	0	0	0	0
North East	Algoma	1	0	5	6
	North Bay Parry Sound District	2	0	22	24
	Porcupine	0	0	6	6
	Sudbury & District	0	0	4	4
	Timiskaming	0	0	0	0
	TOTAL NORTH EAST	3	0	37	40
Eastern	City Of Ottawa	1	0	1	2
	Eastern Ontario	0	0	0	0
	Hastings & Prince Edward Counties	0	0	1	1
	Kingston, Frontenac, Lennox & Addington	0	0	0	0
	Leeds, Grenville And Lanark District	0	0	0	0
	Renfrew County And District	0	0	1	1
	TOTAL EASTERN	1	0	3	4
Central East	Durham Region	7	0	4	11
	Haliburton, Kawartha, Pine Ridge	0	0	0	0
	Peel Region	11	0	23	34
	Peterborough County-City	1	0	0	1
	Simcoe Muskoka District	2	0	2	4
	York Region	1	0		1
	TOTAL CENTRAL EAST	22	0	29	51
Toronto	Toronto	18	0	25	43
	TOTAL TORONTO	18	0	25	43
South West	Chatham-Kent	0	0	0	0
	Elgin-St. Thomas	0	0	0	0
	Grey Bruce	0	0	0	0
	Huron County	1	0	0	1
	Lambton County	0	0	0	0
	Middlesex-London	0	0	1	1
	Oxford County	0	0	1	1
	Perth District	0	0	0	0
	Windsor-Essex County	0	0	1	1
	TOTAL SOUTHWEST	1	0	3	4
Central West	Brant County	1	0	1	2
	City Of Hamilton	3	0	0	3
	Haldimand-Norfolk	1	0	1	2
	Halton Region	3	0	1	4
	Niagara Region	0	0	0	0
	Waterloo Region	3	0	1	4
	Wellington-Dufferin-Guelph	1	0	0	1
	TOTAL CENTRAL WEST	12	0	4	16
	TOTAL ONTARIO	57	0	101	158

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/01/2009].

* 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)

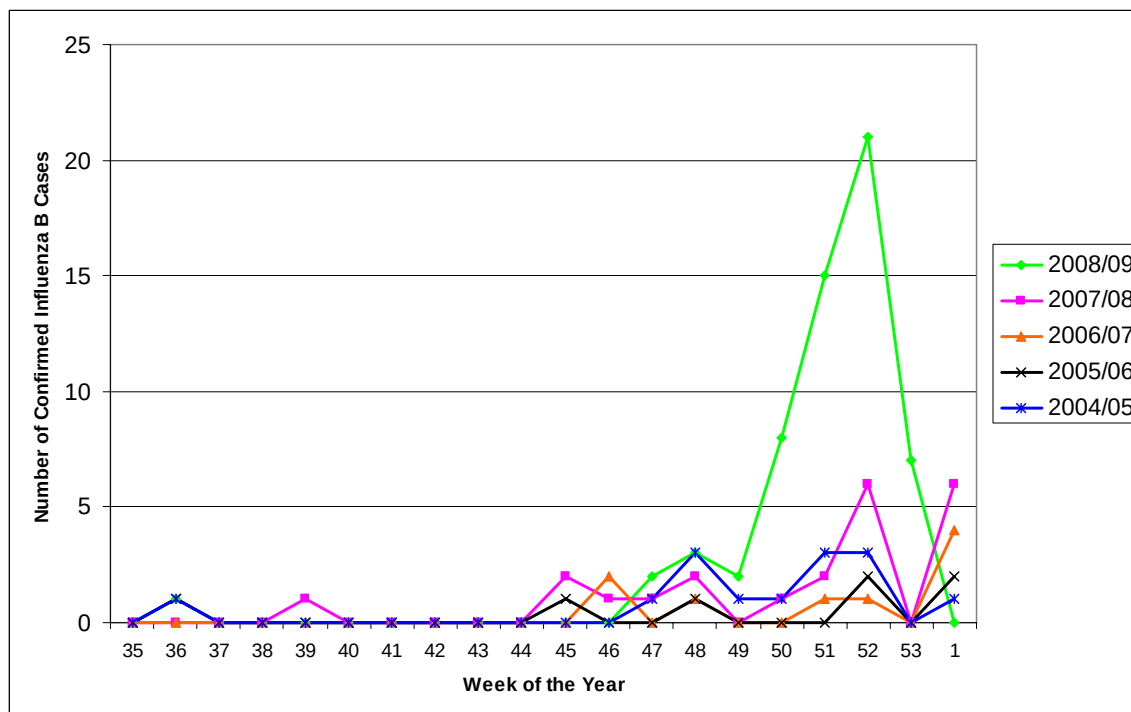
Figure 1: Confirmed Cases of Influenza A in Ontario by week between September 1 and January 3, 2004-2009†



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [03/01/2009].

† 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)

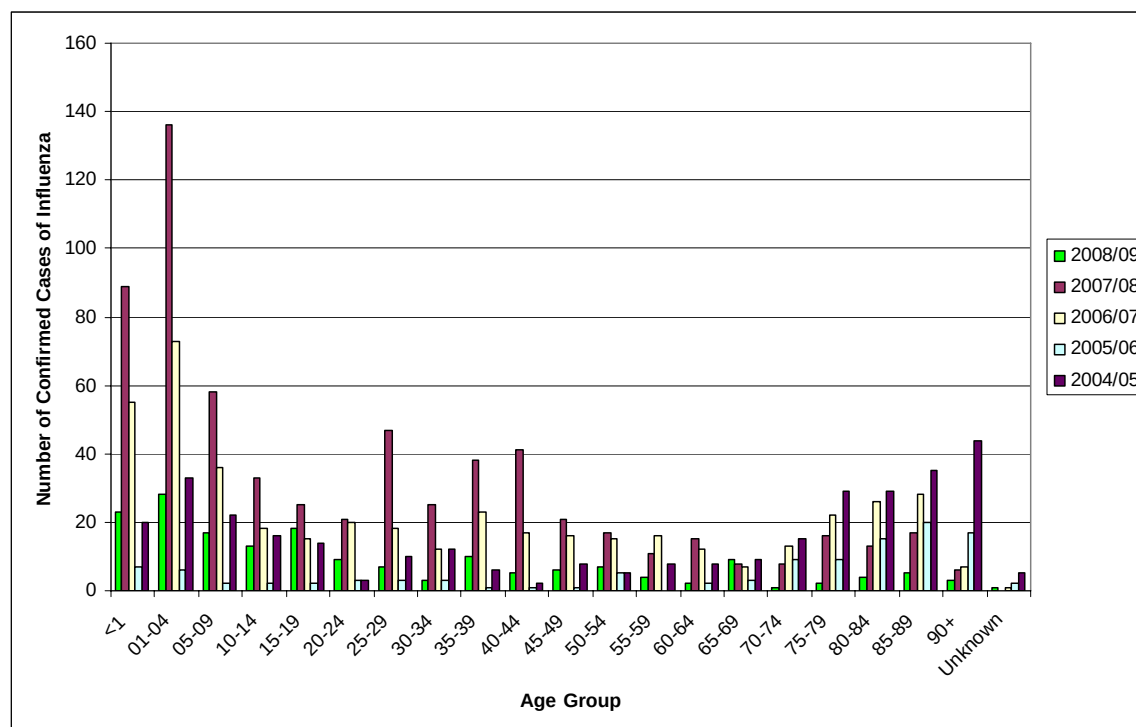
Figure 2: Confirmed Cases of Influenza B in Ontario by week between September 1 and January 3, 2004-2009†



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [03/01/2009].

† 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)

Figure 3: Confirmed Cases of Influenza in Ontario by age group between September 1 and January 3, 2004-2009[†]



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [03/01/2009].

[†] 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 week 53, 2620 isolates were received by the Public Health Agency of Canada, with 43 testing positive for influenza A and 44 positive for influenza B. Twenty reported influenza A isolates were from Alberta (46.5%), nine each were from Quebec and British Columbia (21.0%) and five were from Ontario (11.6%). Thirty-seven of the influenza B isolates were from Ontario (84.1%), six were from Alberta (13.6%) and one was from Quebec (2.3%).*

Antigenic Characterization:

Since the start of the season, the National Microbiology Laboratory (NML) has antigenically characterized 20 influenza viruses: 3 influenza A/Brisbane/59/2007(H1N1)-like (from ON & NS), 2 influenza A/Brisbane/10/2007(H3N2)-like (from BC & ON), 3 influenza B/Florida/4/2006-like (from ON and AB) and 12 B/Malaysia/2506/2004-like (from ON and AB). A/Brisbane/59/2007(H1N1), A/Brisbane/10/2007(H3N2) and B/Florida/4/2006 are the influenza A and influenza B components recommended for the 2008-09 influenza vaccine. B/Malaysia/2506/2004 was the influenza B component for the 2007-2008 season vaccine.**

Antiviral Resistance:

Since the start of the season, the NML has tested 11 influenza A isolates (6 H1N1 and 5 H3N2) for amantadine resistance. All of the H1N1 isolates were susceptible; however all of the H3N2 isolates were resistant to amantadine (resistance = 100% or 5/5). The resistant isolates were from Ontario, Alberta and British Columbia.

The NML has also tested 22 influenza isolates (5 A/H1N1, 2 A/H3N2 & 15 B) for oseltamivir (Tamiflu) resistance. All of the A/H3N2 and B isolates were sensitive; however all of the A/H1N1 isolates were resistant to oseltamivir due to the H274Y mutation (resistance = 100% or 5/5). The resistant isolates were from NS, ON and BC.

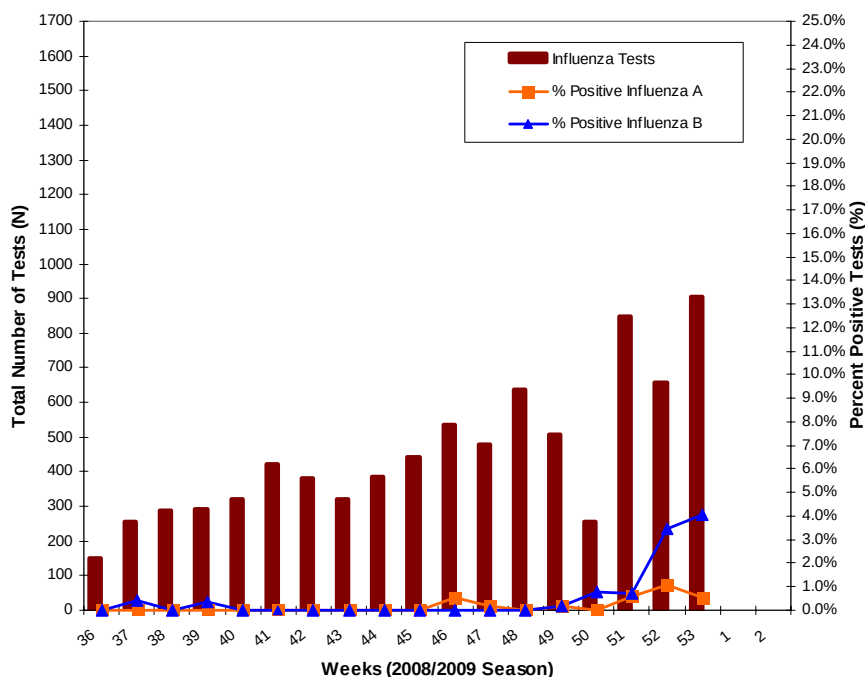
All 18 influenza isolates (1 A/H1N1, 2 A/H3N2 & 15 B) tested for zanamivir resistance to date were sensitive to zanamivir.**

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 53, 2008

** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Week 52, 2008.

Figure 4: 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 53 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A	1	8.3
Influenza B	0	0.0
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	11	91.7
TOTAL	12	100.0
Total Respiratory Infection Outbreaks of the Season to date**	N	% (of outbreaks)
Influenza A	2	1.1
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	5	2.8
RSV	1	0.6
Combined Outbreaks [†]	0	0.0
Other organisms	21	11.7
No organism identified	151	83.9
TOTAL	180	100.0
Types of Institutions (All Outbreaks) **	N	% (of outbreaks)
Long-Term Care Homes	111	61.7
Hospitals	7	3.9
Retirement Homes	10	5.6
Other	1	0.6
Unknown	51	28.3
TOTAL	180	100.0

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/01/2009]

* 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. December 28, 2008 – January 3, 2009

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2008 – January 3, 2009

[†] 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	1966	73.1
Patients	113	4.2
Staff	611	22.7
Total Cases	2690	100.0
Deaths		% (of cases per role)
Residents	35	1.8
Patients	4	3.5
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	55	2.8
Patients	16	14.2
Staff	2	0.3
Hospitalizations		% (of cases per role)
Residents	57	2.9
Staff	0	0.0
Outbreak Related Complications (Influenza Outbreaks)	N	% (of total cases)
Total Cases		
Residents	15	71.4
Patients	3	14.3
Staff	3	14.3
Total Cases	21	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	2	13.3
Patients	1	33.3
Staff	0	0.0
Hospitalizations		% (of cases per role)
Residents	2	13.3
Staff	0	0.0

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [08/01/2009]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2008 – January 3, 2009

Figure 5: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2008 – January 3, 2009 by causative organism

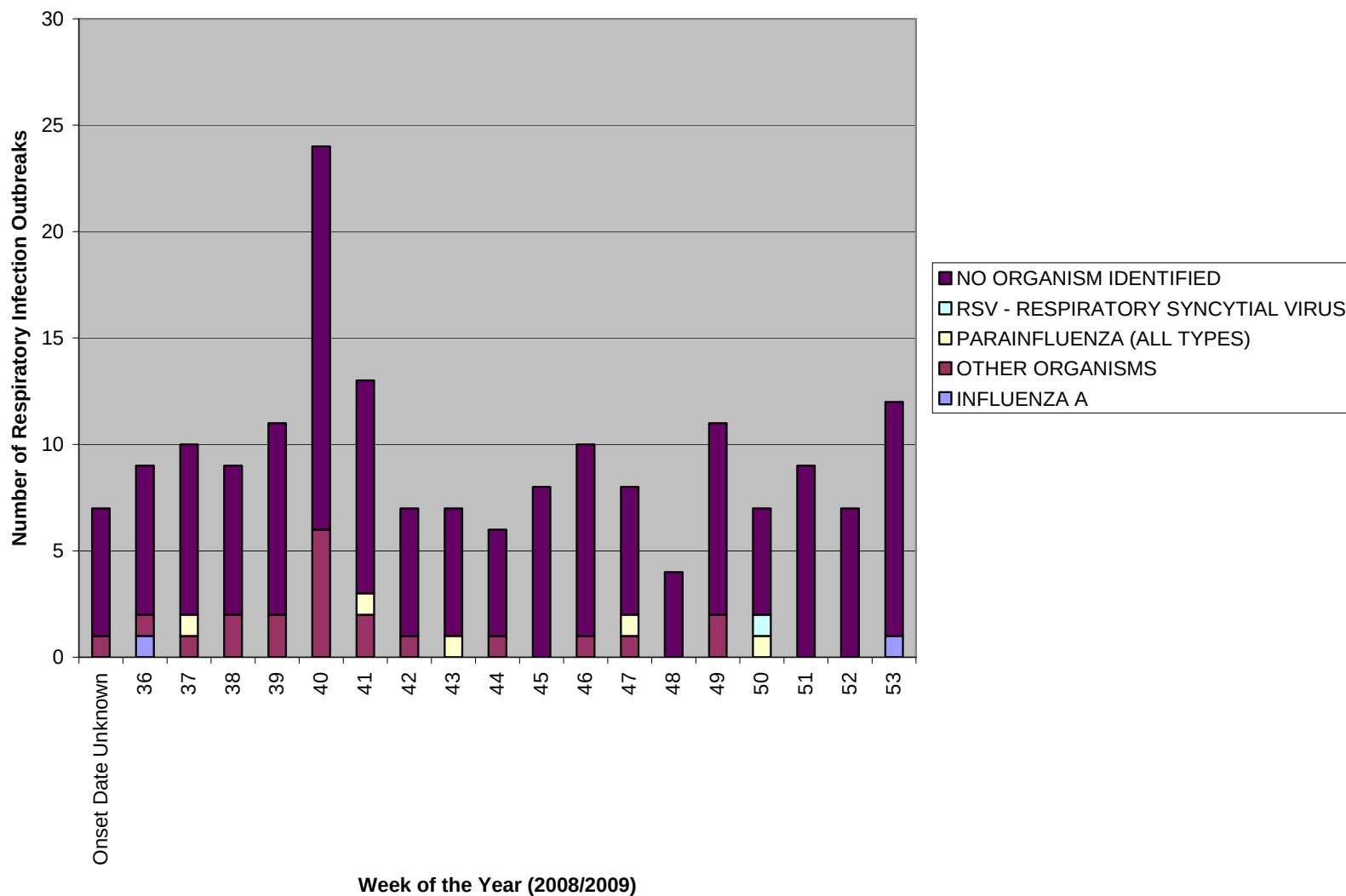
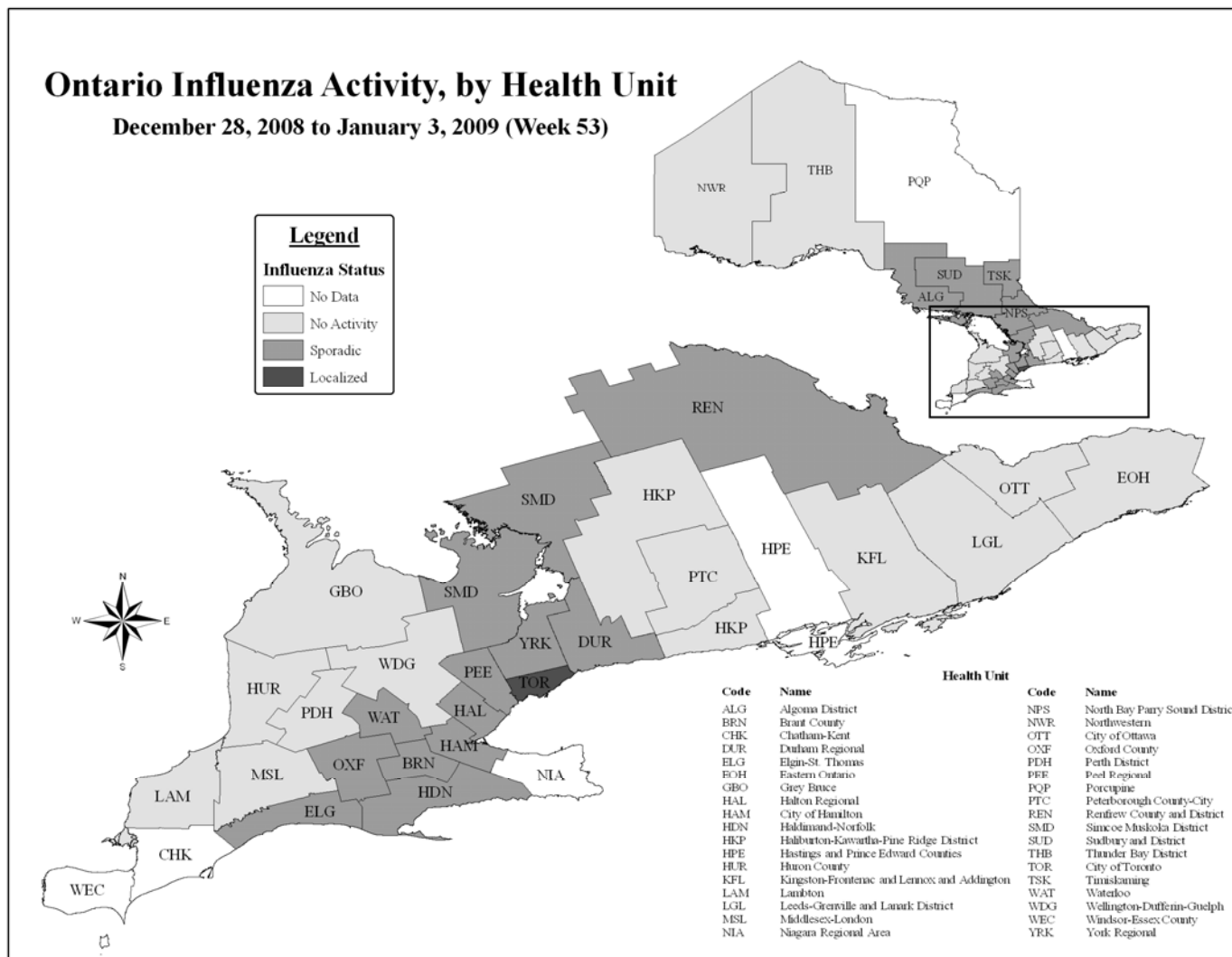


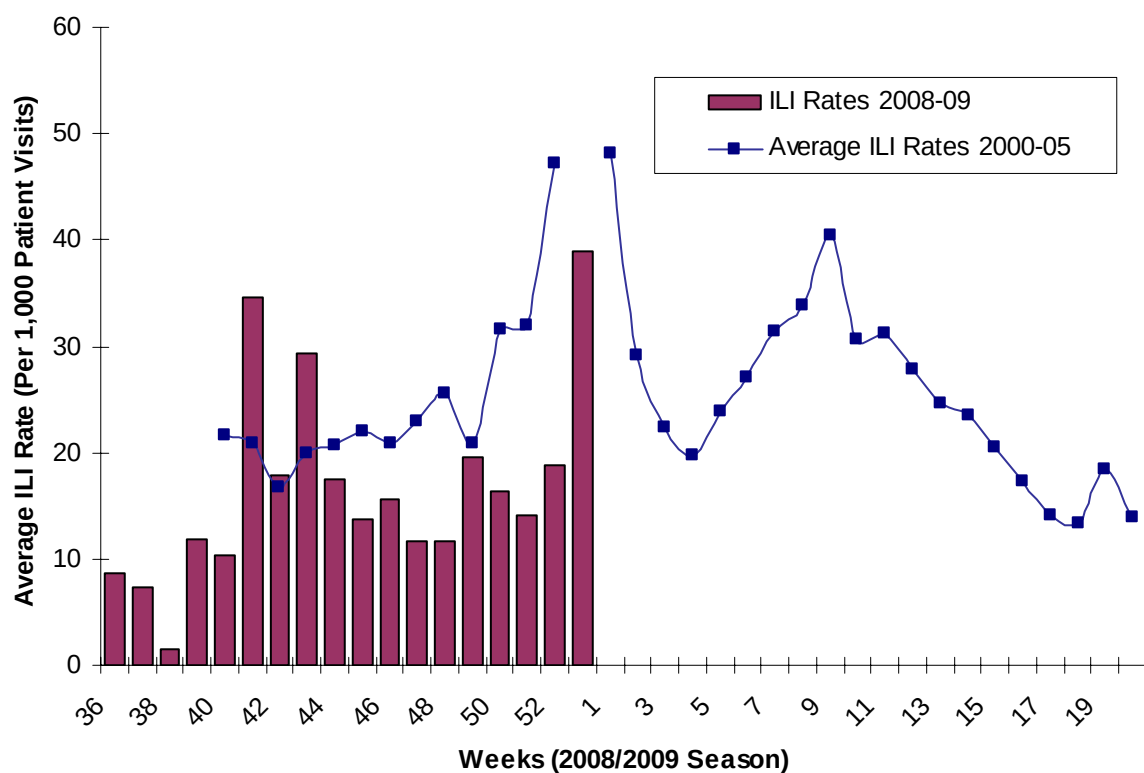
Figure 6: Influenza Activity* levels in Ontario by health unit for Week 53, 2008



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 7: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario in 2008- 2009 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.

Note: For Week 41, the number of sentinel physicians reporting is lower than previous years, which may affect the average ILI rate for this period.

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 53.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0H2N0	0	0	0	0	0
K0K2T0	0	0	0	0	0
L1B1H8	0	0	0	0	0
L4L4Y7	0	0	0	0	0
L4J7Y3	0	0	0	0	0
M4X1W4	0	0	0	0	0
M6G4A1	0	0	1	0	0
M4E1V8	0	0	0	0	0
M8Y1W3	0	0	0	0	0
L5J2W4	0	0	1	0	0
L6W2A4	4	0	5	1	0
L6L2X4	0	0	0	0	0
L7R1M6	0	0	0	0	0
L2E7H1	0	0	0	0	0
N3R7K8	0	0	0	0	0
N1R2L7	0	0	0	0	0
N2M3B5	0	0	0	0	0
N0P2K0	0	1	3	0	0
N0P2K0	0	1	3	1	0
N6C2R5	0	0	0	0	0
N0M1L0	0	1	0	0	0
N0C1E0	0	0	0	0	0
L3V5W5	0	0	0	0	0
P0H2H0	0	0	0	0	0
P0M2L0	0	0	0	0	0
P0M1Z0	0	0	0	0	0
P9N3W7	0	0	0	0	0
ILI Sum	4	3	13	2	0
ILI Consultation Rate (per 1,000 patient visits)	74.07	60.00	38.81	15.87	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_08/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 2008-2009 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
WK1	4-Jan-09	10-Jan-09	13-Jan-09
WK2	11-Jan-09	17-Jan-09	20-Jan-09
WK3	18-Jan-09	24-Jan-09	27-Jan-09
WK4	25-Jan-09	31-Jan-09	3-Feb-09
WK5	1-Feb-09	7-Feb-09	10-Feb-09
WK6	8-Feb-09	14-Feb-09	17-Feb-09
WK7	15-Feb-09	21-Feb-09	24-Feb-09
WK8	22-Feb-09	28-Feb-09	3-Mar-09
WK9	1-Mar-09	7-Mar-09	10-Mar-09
WK10	8-Mar-09	14-Mar-09	17-Mar-09
WK11	15-Mar-09	21-Mar-09	24-Mar-09
WK12	22-Mar-09	28-Mar-09	31-Mar-09
WK13	29-Mar-09	4-Apr-09	7-Apr-09
WK14	5-Apr-09	11-Apr-09	14-Apr-09
WK15	12-Apr-09	18-Apr-09	21-Apr-09
WK16	19-Apr-09	25-Apr-09	28-Apr-09
WK17	26-Apr-09	2-May-09	5-May-09
WK18	3-May-09	9-May-09	12-May-09
WK19	10-May-09	16-May-09	19-May-09
WK20	17-May-09	23-May-09	26-May-09
WK21	24-May-09	30-May-09	2-Jun-09
WK22	31-May-09	6-Jun-09	9-Jun-09
WK23	7-Jun-09	13-Jun-09	16-Jun-09
WK24	14-Jun-09	20-Jun-09	23-Jun-09
WK25	21-Jun-09	27-Jun-09	30-Jun-09
WK26	28-Jun-09	4-Jul-09	7-Jul-09
WK27	5-Jul-09	11-Jul-09	14-Jul-09
WK28	12-Jul-09	18-Jul-09	21-Jul-09
WK29	19-Jul-09	25-Jul-09	28-Jul-09
WK30	26-Jul-09	1-Aug-09	4-Aug-09
WK31	2-Aug-09	8-Aug-09	11-Aug-09
WK32	9-Aug-09	15-Aug-09	18-Aug-09
WK33	16-Aug-09	22-Aug-09	25-Aug-09
WK34	23-Aug-09	29-Aug-09	1-Sep-09
WK35	30-Aug-09	5-Sep-09	8-Sep-09