

SURVEILLANCE WEEK 43 (October 25, 2009– October 31, 2009)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from October 25, 2009– October 31, 2009, (Week 43). **All data are for week 43 unless otherwise specified. Death and hospitalization information among pandemic (H1N1) 2009 (abbreviated as pH1N1) confirmed cases is current as of November 4, 2009.** Data extraction and analysis for this issue of the Bulletin occurred on November 4, 2009.

In order to enable our readers to better assess influenza activity in Ontario, we have combined various sources of information in the following table.

Assessment of Influenza Activity in Ontario

Measure	Assessment of measure compared to previous week (Lower, Similar, Higher)	Reasoning behind assessment
Laboratory Confirmed Cases	Higher	1357 total influenza cases (1088 pH1N1) in week 43 compared to 553 reported in week 42 (461 pH1N1)*. The percent positivity of laboratory tests for pH1N1 was 33%.
Influenza A Outbreaks	Higher	Nine new institutional influenza outbreaks were reported for the current reporting week. There were 3 new pH1N1 outbreaks declared in schools for Week 43.
Influenza Activity Levels Reported by Health Units	Higher	Fourteen health units reported 'widespread' influenza activity and ten health units reported 'localized' activity for the current reporting week.
ILI Consultation Rate reported by Sentinel Physicians	Higher	The overall ILI consultation rate increased from 79.26/1,000 patient visits to 138.54/1,000 patient visits.
Hospitalizations Among Lab Confirmed Cases of pandemic (H1N1) 2009 virus	Higher	More hospitalized cases were reported from October 28 to November 4 as compared to October 21 to October 28 (212 compared to 104).
Deaths Among Lab Confirmed Cases of pandemic (H1N1) 2009 virus	Higher	Seven new deaths were reported from October 28 to November 4 compared to 2 new deaths reported from October 21 to October 28.
OVERALL ASSESSMENT	Influenza activity in Ontario is <i>higher</i> compared to the previous week.	All of the measures indicate that influenza activity increased in week 43 compared to week 42. Influenza activity has continued to increase each week since week 38.

*Counts from previous weeks may be updated and therefore may not match reports in earlier Bulletins

Overall, influenza activity in Ontario during week 43, 2009, was **higher** as compared to week 42, 2009. Ontario health units reported 1357 new confirmed cases of influenza through the integrated Public Health Information System (iPHIS). This count includes 1088 laboratory confirmed cases of pH1N1. During week 43, new laboratory confirmed cases of pH1N1 continued to be seen in all regions of Ontario. Nine new institutional influenza outbreaks were reported. For week 43, fourteen health units reported widespread influenza activity and ten health units reported localized activity, and other health units reported either 'sporadic' level or no influenza activity. The rate of influenza-like illness (ILI) in patients seen by sentinel physicians was much higher than the range that is expected for this time of the year based on the average ILI rate reported in week 43 from the past 3 years.

From October 26, 2009 to October 30, 2009 there were 42 VE study specimens tested by the Central Public Health Laboratory. A total of 14 isolates (33%), tested positive for other respiratory organisms, including rhinovirus and parainfluenza. **The isolates were from the following areas, including: Ottawa, Toronto, Middlesex-London, Niagara, Kingston-Frontenac-Lennox & Addington, Oxford and Timiskaming areas. Please refer to page 23 for detailed testing results.**

For a definition of 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), Michael Whelan (michael.whelan@ontario.ca, 416-327-9174) 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 43, 2009-2010)

Confirmed influenza cases*†	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Pandemic (H1N1) 2009	30	111	270	185	168	125	199	1088
Influenza A (Other Subtypes/Not Subtyped)	18	19	3	78	21	12	116	267
Influenza B	0	0	0	0	0	2	0	2
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	48	130	273	263	189	139	315	1357
Institutional outbreaks of pandemic (H1N1) 2009 ‡	0	0	0	2	2	0	3	7
Institutional outbreaks of Influenza (Other Subtypes/Not Subtyped)‡	0	0	1	0	0	1	0	2

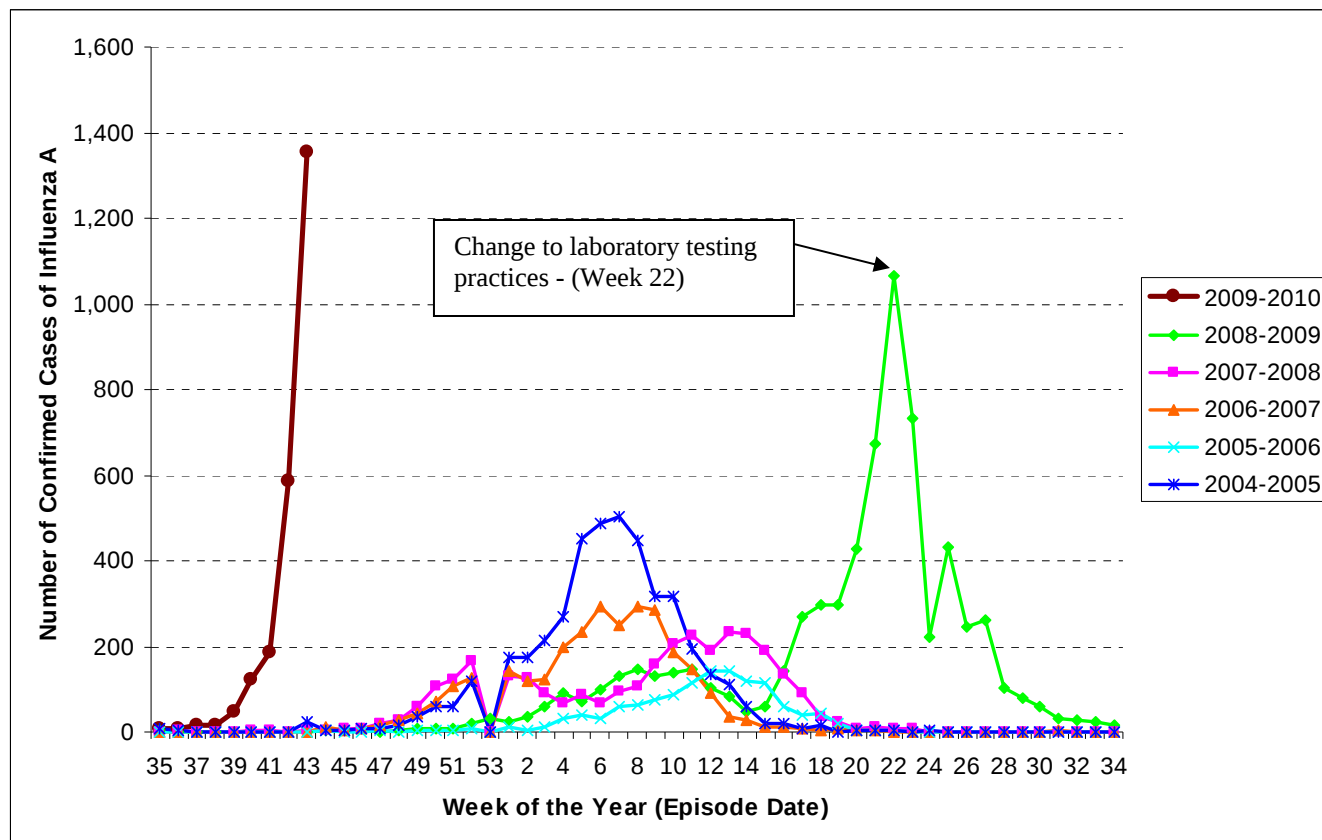
SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [04/11/2009].

* Includes reports of confirmed influenza through iPHIS, as well as cases in institutional outbreaks, with dates of onset for the first case in the surveillance period.

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

As seen in Figure 1, the total number of influenza A positive cases occurring between weeks 17 and 22, for the 2008-2009 season, was higher than the seasonal peak that was seen in late-February to mid-March (weeks 8 – 11). A change in laboratory testing patterns is reflected in week 23, as the population eligible for testing was drastically reduced, resulting in a decline in the number of laboratory confirmed cases of influenza A. Beginning June 21, 2009 (week 25) health units began reporting weekly aggregate counts of pH1N1. Aggregate reports are based on the date the health unit was informed of the pH1N1 subtype as opposed to the reported symptom onset date for the case. It is clear that the number of laboratory confirmed cases of influenza A reported to date in the 2009-2010 season is much higher than in the previous five seasons at this time.

Figure 1: All confirmed cases of Influenza A in Ontario by week, 2004-2010^{†*}



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [04/11/2009].

[†] 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 2: Laboratory confirmed cases of pandemic (H1N1) 2009 virus by health unit & health region, reported during Week 43[†], 2009-10 and cumulative* confirmed cases between April 1, 2009 – October 31, 2009

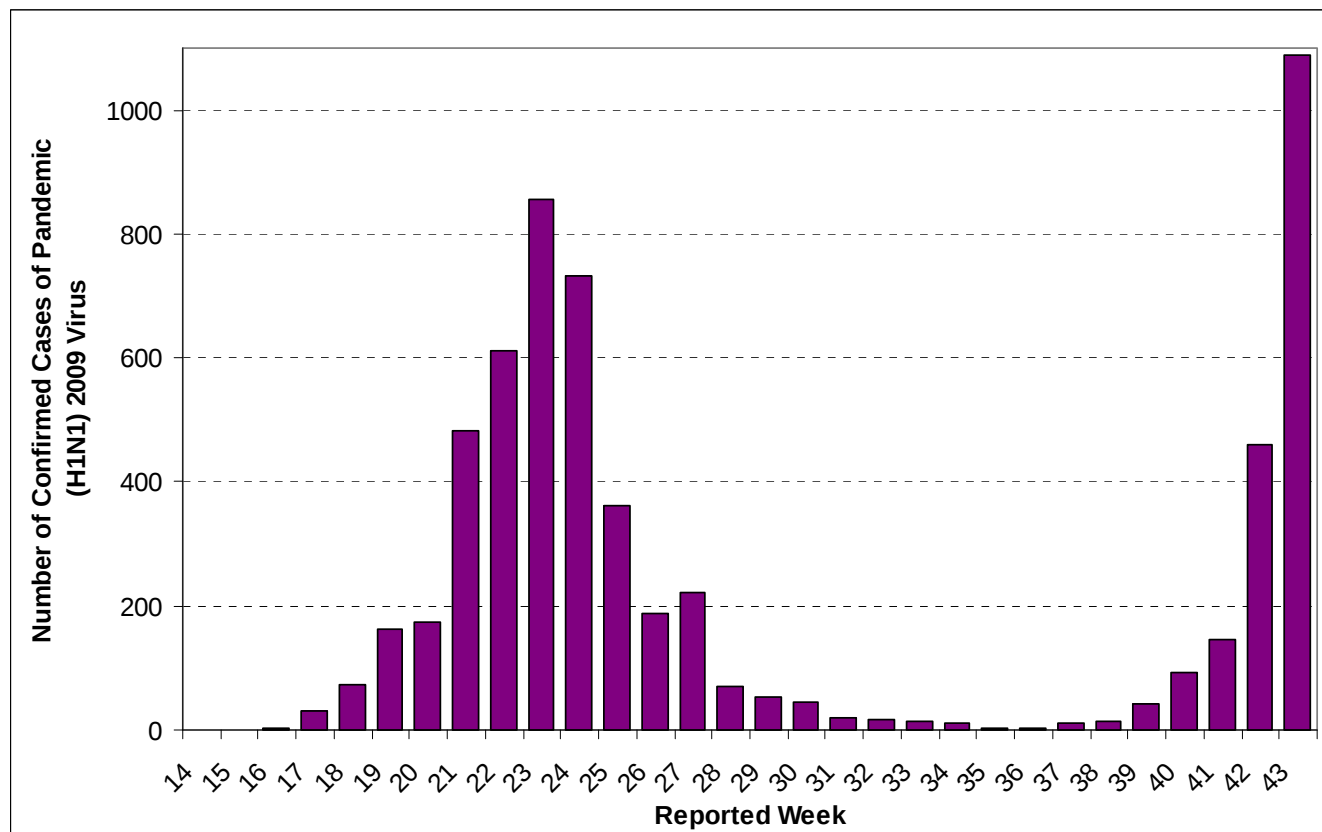
Region	Health Unit	Confirmed Influenza	
		Pandemic (H1N1) 2009 for WK 43	Pandemic (H1N1) 2009 (Total)
North West	Northwestern	6	84
	Thunder Bay District	24	44
	TOTAL NORTH WEST	30	128
North East	Algoma	15	34
	North Bay Parry Sound District	15	26
	Porcupine	36	74
	Sudbury & District	24	55
	Timiskaming	21	23
	TOTAL NORTH EAST	111	212
Eastern	City of Ottawa	98	532
	Eastern Ontario	64	116
	Hastings & Prince Edward Counties	25	30
	Kingston, Frontenac, Lennox & Addington	46	100
	Leeds, Grenville And Lanark District	31	55
	Renfrew County And District	6	21
	TOTAL EASTERN	270	854
Central East	Durham Region	28	174
	Haliburton, Kawartha, Pine Ridge	7	23
	Peel Region	49	778
	Peterborough County-City	22	32
	Simcoe Muskoka District	26	102
	York Region	53	621
	TOTAL CENTRAL EAST	185	1,730
Toronto	Toronto	168	1,864
	TOTAL TORONTO	168	1,864
South West	Chatham-Kent	2	18
	Elgin-St. Thomas	6	11
	Grey Bruce	9	28
	Huron County	0	2
	Lambton County	12	28
	Middlesex-London	57	124
	Oxford County	12	36
	Perth District	15	32
	Windsor-Essex County	12	72
	TOTAL SOUTHWEST	125	351
Central West	Brant County	7	16
	City Of Hamilton	69	255
	Haldimand-Norfolk	0	6
	Halton Region	31	290
	Niagara Region	42	120
	Waterloo Region	39	104
	Wellington-Dufferin-Guelph	11	58
	TOTAL CENTRAL WEST	199	849
	Out of Province	0	6
	TOTAL ONTARIO	1,088	5,994

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [04/11/2009].

[†] Reported date corresponds to the date pandemic (H1N1) 2009 was reported to the health unit

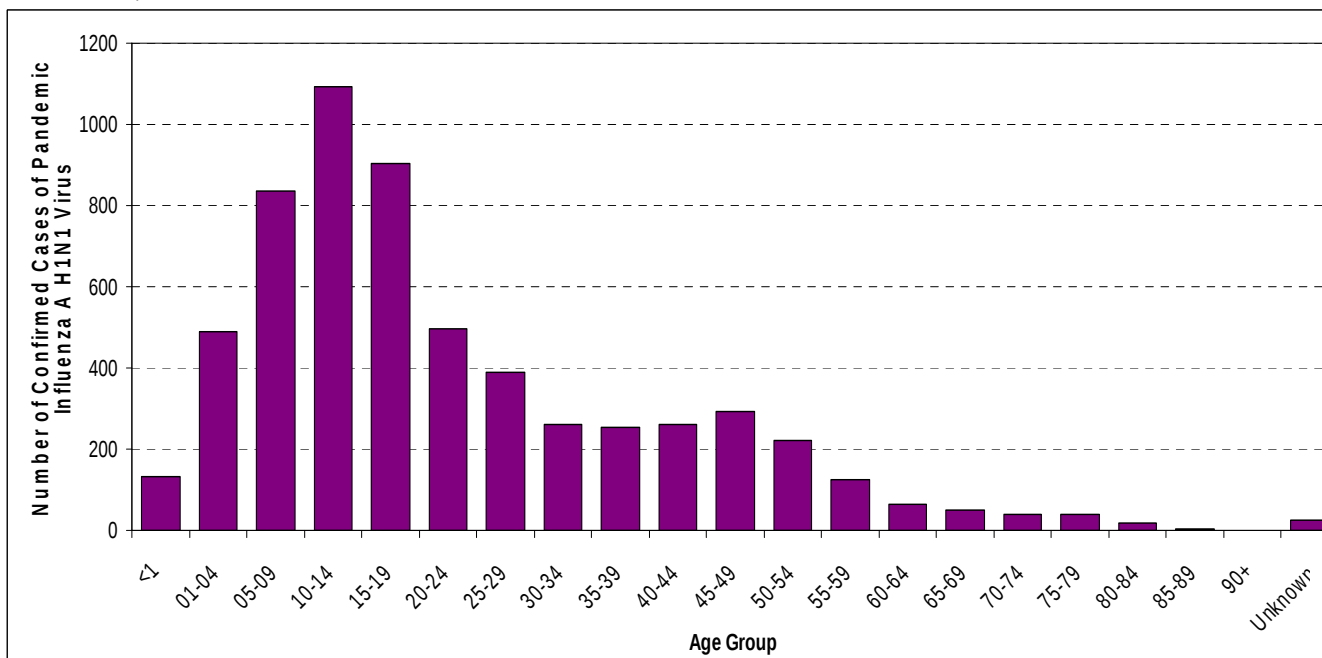
Note: Cumulative case counts include late reports and records that are otherwise reconciled. Therefore, cumulative counts may not equal new cases plus previous cumulative value.

Figure 2: Laboratory confirmed cases of pandemic (H1N1) 2009 in Ontario by week between April 13 and October 31, 2009



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [04/11/2009].

Figure 3: Laboratory confirmed cases of pandemic (H1N1) 2009 in Ontario by age group between April 13 and October 31, 2009



SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [04/11/2009].

Table 3: Confirmed cases of influenza by health unit & health region, excluding laboratory confirmed pandemic (H1N1) 2009, with an episode date[†] during Week 43, 2009-10

Region	Health Unit	Confirmed Influenza			
		Influenza A (Other subtypes/Not yet Subtyped)	Influenza A & B	Influenza B	TOTAL
North West	Northwestern	5	0	0	5
	Thunder Bay District	13	0	0	13
	TOTAL NORTH WEST	18	0	0	18
North East	Algoma	1	0	0	1
	North Bay Parry Sound District	17	0	0	17
	Porcupine	1	0	0	1
	Sudbury & District	0	0	0	0
	Timiskaming	0	0	0	0
	TOTAL NORTH EAST	19	0	0	19
Eastern	City of Ottawa	0	0	0	0
	Eastern Ontario	0	0	0	0
	Hastings & Prince Edward Counties	3	0	0	3
	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	3	0	0	3
Central East	Durham Region	21	0	0	21
	Haliburton, Kawartha, Pine Ridge	0	0	0	0
	Peel Region	35	0	0	35
	Peterborough County-City	10	0	0	10
	Simcoe Muskoka District	12	0	0	12
	York Region	0	0	0	0
	TOTAL CENTRAL EAST	78	0	0	78
Toronto	Toronto	21	0	0	21
	TOTAL TORONTO	21	0	0	21
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	11	0	0	11
	Oxford County	0	0	0	0
	Perth District	1	0	2	3
	Windsor-Essex County	0	0	0	0
	TOTAL SOUTHWEST	12	0	2	14
Central West	Brant County	1	0	0	1
	City Of Hamilton	68	0	0	68
	Haldimand-Norfolk	1	0	0	1
	Halton Region	18	0	0	18
	Niagara Region	10	0	0	10
	Waterloo Region	11	0	0	11
	Wellington-Dufferin-Guelph	7	0	0	7
	TOTAL CENTRAL WEST	116	0	0	116
	TOTAL ONTARIO	267	0	2	269

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [04/11/2009].

[†] 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 4: Cumulative* confirmed cases of influenza by health unit & health region, excluding laboratory confirmed pandemic (H1N1) 2009, with an episode date[†] between September 1, 2009 – October 31, 2009

Region	Health Unit	Confirmed Influenza			
		Influenza A (Other subtypes/Not yet Subtyped)	Influenza A & B	Influenza B	TOTAL
North West	Northwestern	9	0	0	9
	Thunder Bay District	19	0	0	19
	TOTAL NORTH WEST	28	0	0	28
North East	Algoma	2	0	0	2
	North Bay Parry Sound District	30	0	0	30
	Porcupine	2	0	0	2
	Sudbury & District	0	0	0	0
	Timiskaming	0	0	0	0
	TOTAL NORTH EAST	34	0	0	34
Eastern	City Of Ottawa	0	0	0	0
	Eastern Ontario	2	0	0	2
	Hastings & Prince Edward Counties	3	0	0	3
	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	5	0	0	5
Central East	Durham Region	27	0	0	27
	Haliburton, Kawartha, Pine Ridge	0	0	0	0
	Peel Region	57	0	0	57
	Peterborough County-City	12	0	0	12
	Simcoe Muskoka District	15	0	0	15
	York Region	2	0	0	2
	TOTAL CENTRAL EAST	113	0	0	113
Toronto	Toronto	42	0	1	43
	TOTAL TORONTO	42	0	1	43
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	1	0	0	1
	Middlesex-London	41	0	0	41
	Oxford County	3	0	0	3
	Perth District	5	0	2	7
	Windsor-Essex County	0	0	0	0
	TOTAL SOUTHWEST	50	0	2	52
Central West	Brant County	1	0	0	1
	City Of Hamilton	97	0	1	98
	Haldimand-Norfolk	2	0	0	2
	Halton Region	37	0	0	37
	Niagara Region	17	0	0	17
	Waterloo Region	48	0	0	48
	Wellington-Dufferin-Guelph	13	0	1	14
	TOTAL CENTRAL WEST	215	0	2	217
TOTAL ONTARIO		487	0	5	492

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [04/11/2009].

* 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)

NOTE: Data presented on deaths and hospitalizations includes cases reported up to November 4, 2009.

Deaths among pandemic (H1N1) 2009 virus cases, April 13 – November 4, 2009

A total of 37 deaths have been reported, with 62% (23) reported in wave 1 and 38% (14) in wave 2. Of the reported deaths, 84% were hospitalized prior to their date of death. Overall, cases that died ranged in age from 6 to 87 years and had a mean and median age of 52 and 56 years, respectively. The median age for cases that died remained unchanged during waves one and two at 56 years. Women accounted for more than half of all cases that have died with 20 out of 37 (54%) deaths occurring among women.

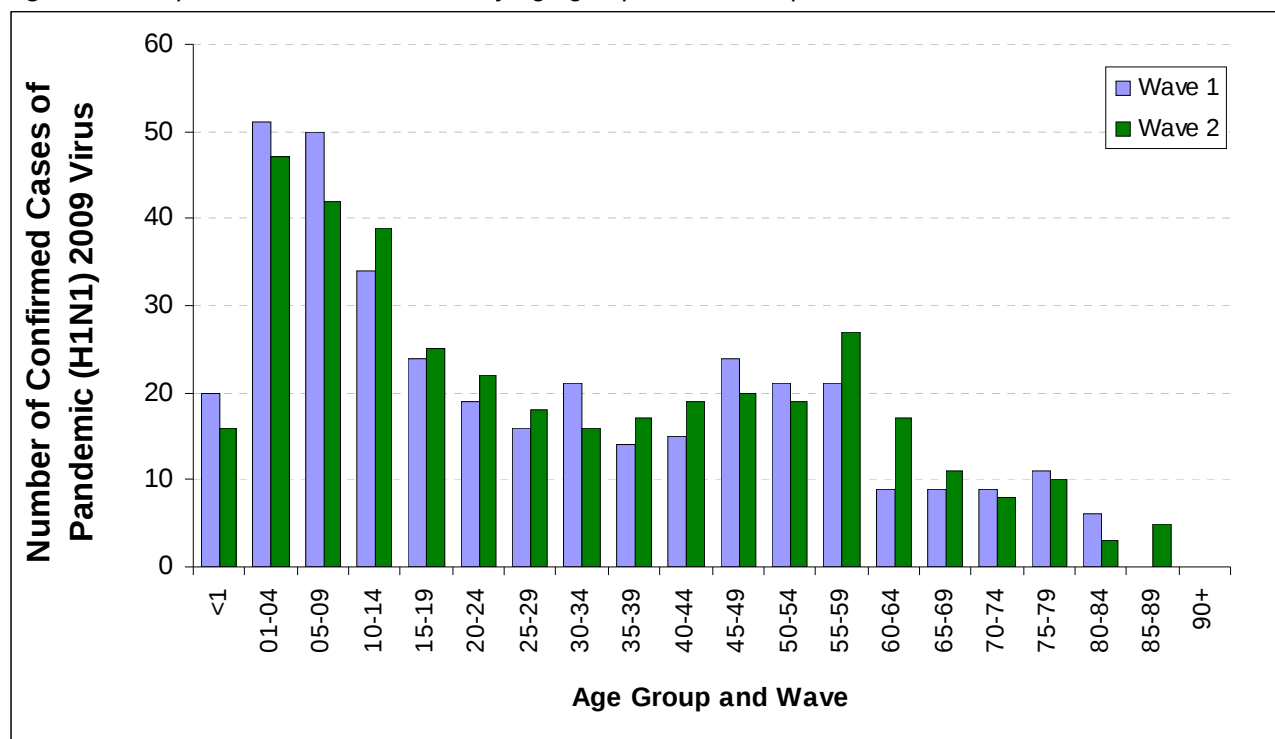
Mortality due to pH1N1 increased with increasing age, with people in the 50-64 and in the 65 and older age groups accounting for the highest mortality rates. These rates were significantly higher than the overall provincial rate. A similar trend was observed for both waves one and two, with the only anomaly being the 65 and older age group in wave two which had a lower than expected rate of death.

Hospitalizations among pandemic (H1N1) 2009 virus cases, April 13 – November 4, 2009

Seven hundred and fifty five hospitalizations were reported, with 49.5% (374) reported in wave 1 and 50.5% (381) reported in wave 2. The cumulative hospitalization rate of pH1N1 related hospitalizations is 5.8 hospitalizations per 100,000 population. In general, the incidence of infection with pH1N1 decreased with increasing age, with persons in the youngest age ranges accounting for the highest number of cases and the highest incidence rates. A similar trend was observed for wave one and wave two cases. Cases under the age of 20 years account for 44% of hospitalized cases in wave 1 and 48% of hospitalized cases in wave 2.

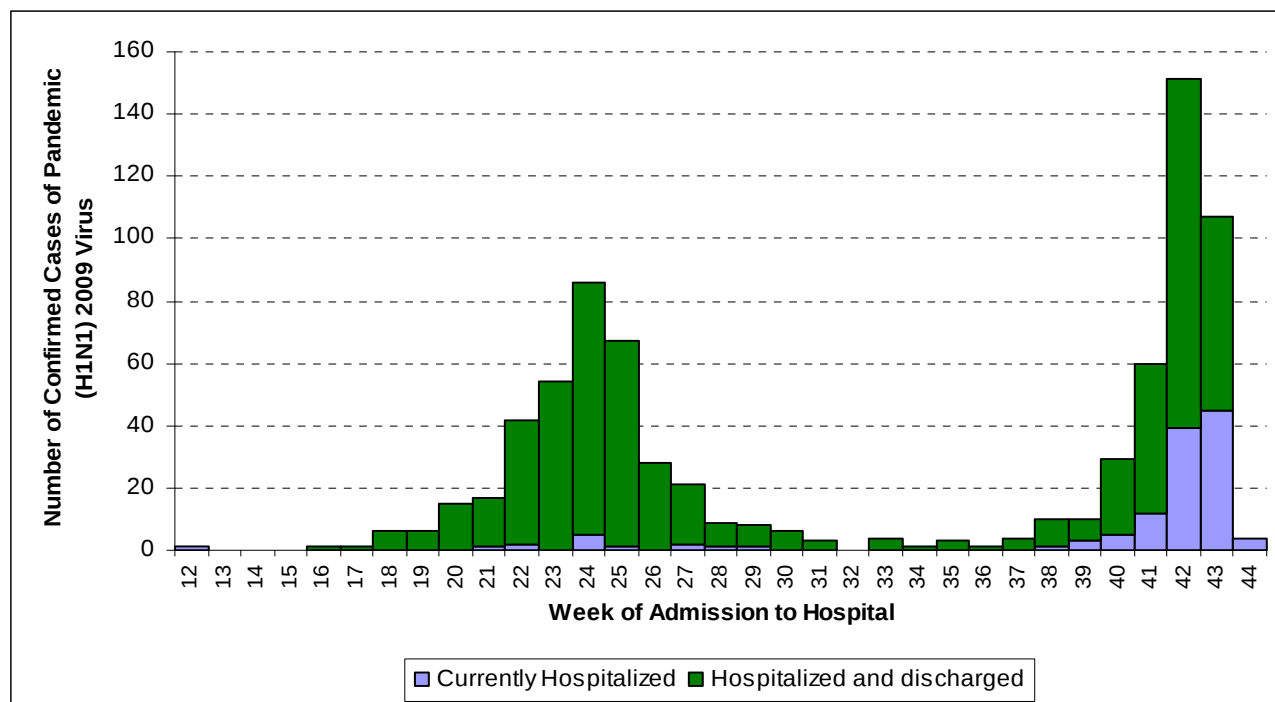
Admission to ICU and/or use of a ventilator was reported for 21% of wave one cases and 12% of wave 2 cases. Overall, 20% of hospitalizations have been admitted to ICU and/or placed on a ventilator. Fever, cough, shortness of breath, vomiting, malaise, myalgia and sore throat/difficulty swallowing have been the most commonly reported symptoms among hospitalized cases.

Figure 4: Hospitalized cases in Ontario by age group and wave, April 13 to November 4, 2009



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted at 8:30 am [04/11/2009]

Figure 5: Hospitalized cases of pandemic (H1N1) 2009 by hospital admission date in Ontario, April 13 – November 4, 2009*



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted at 8:30 am [04/11/2009]

Note: Interpret tail with caution due to reporting lags, changes in lab testing, case identification and data entry.

Influenza Subtype(s):

During week 43, a total of 21982 isolates were received by the Public Health Agency of Canada, with 7970 testing positive for influenza A and two positive for influenza B. 2254 of the reported influenza A isolates were from Alberta (28.3%), 1796 were from Quebec (22.5%), 1501 were from Ontario (18.8%), and 1243 were from British Columbia (15.6%).*

(Antigenic Characterization and Antiviral Resistance data are current as of November 5, 2009)

Antigenic Characterization (National):

Since September 1, 2009, National Microbiology Laboratory (NML) has antigenically characterized 69 pandemic H1N1 viruses and two seasonal influenza viruses (one influenza A/H1N1 and one B virus) that were received from Canadian laboratories.

Pandemic Influenza A (H1N1):

All 69 pandemic influenza A (H1N1) viruses characterized were antigenically related to A/California/7/2009, which is the pandemic reference virus selected by WHO for the 2009 influenza A (H1N1) vaccine.

Seasonal Influenza A (H1N1):

The one seasonal influenza A/H1N1 virus characterized was related to A/Brisbane/59/07, which is the influenza A/H1N1 component for the 2009-10 influenza vaccine.

Influenza B:

The one influenza B virus characterized was antigenically related to B/Brisbane/60/08, which is the influenza B component for the 2009-10 influenza vaccine.

Antigenic Characterization (Provincial):

The National Microbiology Laboratory (NML) has antigenically characterized the following strains from Ontario: 44 influenza A/California/07/2009-like and 1 influenza B/Brisbane/60/2008-like.

Antiviral Resistance (National):

Four seasonal influenza A viruses (one H1N1 and three H3N2) and 52 pandemic H1N1 viruses were tested for resistance to amantadine and found that all were resistant. Three seasonal influenza viruses (one H1N1, one H3N2 and one B) and 68 pandemic H1N1 viruses were tested for resistance to oseltamivir and found that one seasonal H1N1 isolate was resistant to oseltamivir. Two pH1N1 isolates were resistant to oseltamivir with the H275Y mutation. The resistance was associated with oseltamivir treatment. 66 pH1N1 isolates were sensitive to oseltamivir. The H3N2 and B viruses were sensitive to oseltamivir.

Three seasonal influenza viruses (one H1N1, one H3N2 and one B) and 69 pandemic H1N1 viruses were tested for resistance to zanamivir and all were sensitive.

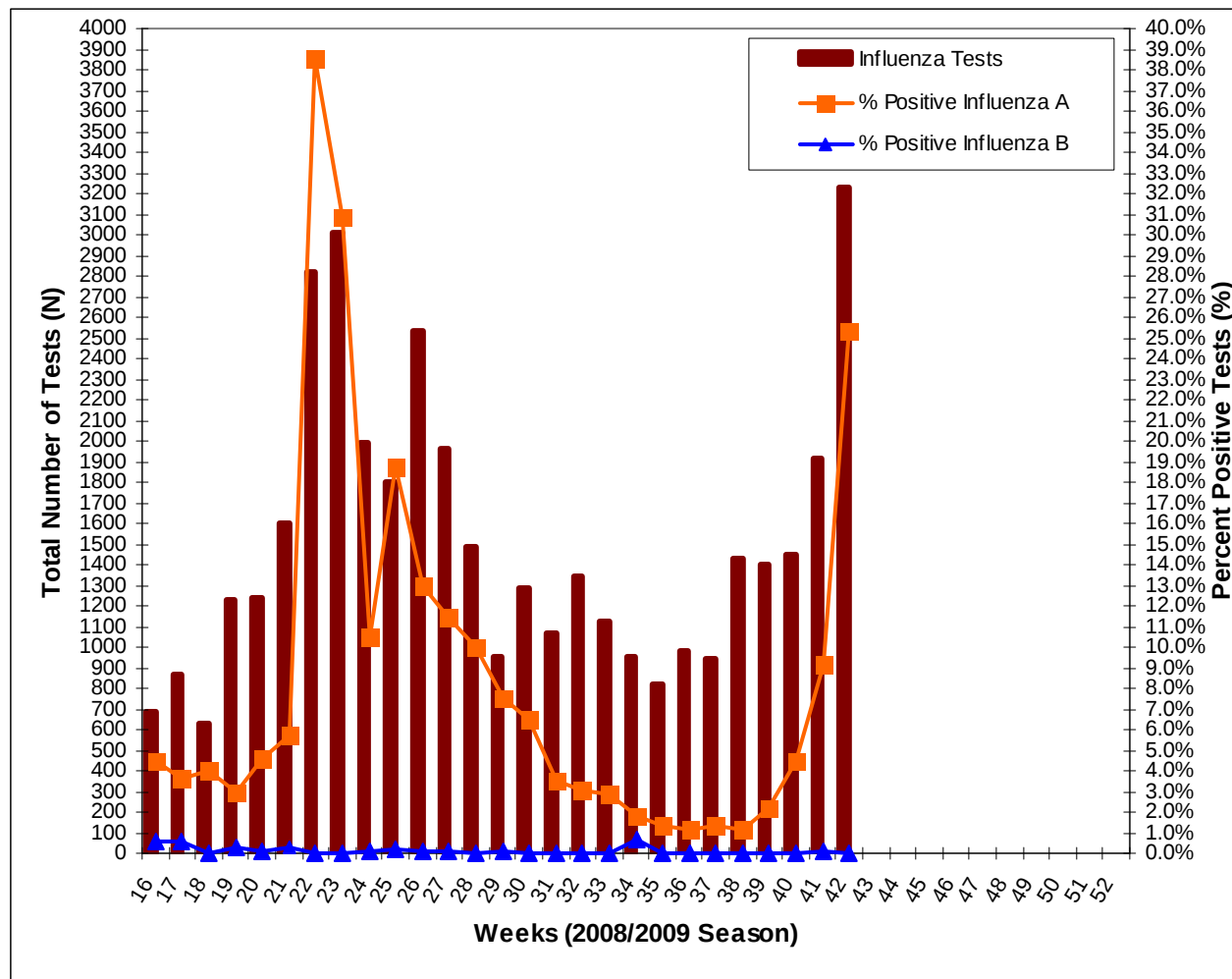
Antiviral Resistance (Provincial):

41/43 influenza pH1N1 isolates were sensitive to oseltamivir, 44 of 44 tested were sensitive to zanamivir, and 27 of 27 tested were resistant to amantadine. The influenza B isolate was sensitive to oseltamivir and zanamivir. The one H3N2 isolate was also resistant to amantadine.†

* 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 43, 2009. Please note that the last version received from PHAC as of 4:00PM on November 4, 2009 was used.

† These data have been obtained from the National Microbiology Laboratory of the Public Health Agency of Canada for Week 43, 2009.

Figure 6: 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*.

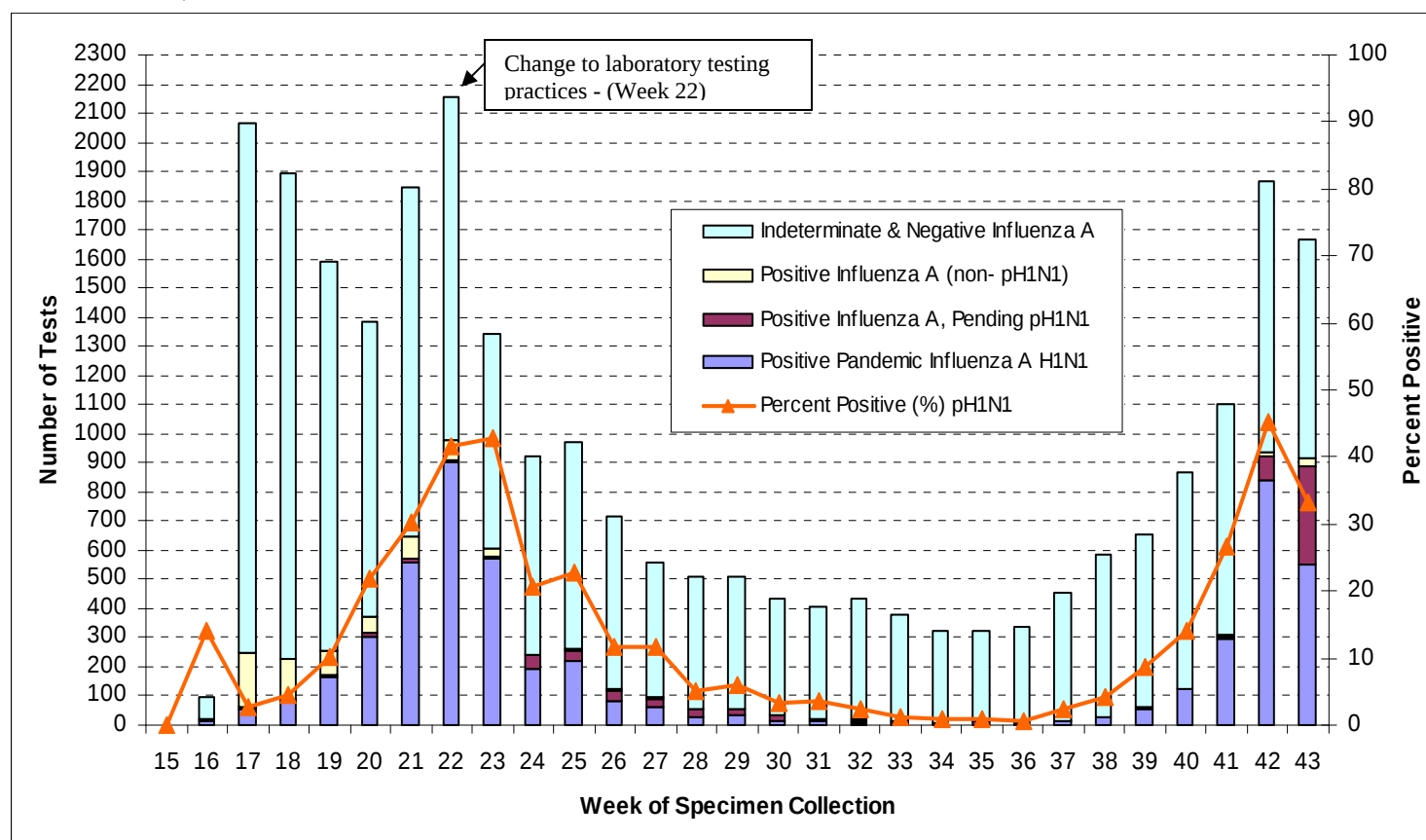


Source: Public Health Agency of Canada. These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada from 17 labs in Ontario and do not include data from late reports to PHAC for the current season: Week 42, 2009. Please note that the last version received from PHAC as of 4:00PM on October 29, 2009 was used.

* Total numbers reported include late reports from previous seasons; 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/>

Figure 6a: Total number of influenza tests performed and percent of positive tests in Ontario conducted by the Ontario Agency for Health Protection and Promotion Laboratory – Toronto, by specimen collection week April 12 –October 31, 2009



Source: Adapted from Table 1 in the "OAHPP Laboratory Pandemic H1N1 Surveillance Report"; Monday, November 2, 2009

Note: Not all cases with specimens collected during week 43 are included in this summary due to the lag in time from the date of specimen collection to the date the final test result is confirmed.

Table 5: Summary of Other Respiratory Virus Detections/Isolations in Ontario in Week 43

Organism Name	Number of Positive Tests	Number of Tests	% Positive
Respiratory Syncytial Virus	9	2160	0.42
Parainfluenza (all types)	56	2052	2.73
Adenovirus	4	2246	0.18
Human Metapneumovirus	0	617	0.00

SOURCE: These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada from 17 labs in Ontario and do not include data from late reports to PHAC: Week 43, 2009. Please note that the last version received from PHAC as of 4:00PM on November 5, 2009 was used.

Table 6a: Institutional respiratory infection outbreaks in Ontario: new outbreaks* in Week 43 and total outbreaks for the season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	N	% (of outbreaks)
Influenza A (All subtypes)	9	64.3
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	5	35.7
TOTAL	14	100.0
Total Respiratory Infection Outbreaks of the Season to date**	N	% (of outbreaks)
Influenza A	24	19.2
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	1	0.8
RSV	1	0.8
Combined Outbreaks [†]	11	8.8
Other organisms	30	24.0
No organism identified	58	46.4
TOTAL	125	100.0
Types of Institutions – All Outbreaks **	N	% (of outbreaks)
Long-Term Care Homes	71	56.8
Hospitals	10	8.0
Retirement Homes	9	7.2
Other	0	0.0
Unknown	35	28.0
TOTAL	125	100.0
	N	% (of outbreaks)
New Outbreaks – Pandemic (H1N1) 2009*	7	38.9
Total pH1N1 2009 Infection Outbreaks of the Season to date**	18	100.0
	N	% (of outbreaks)
Types of Institutions (pH1N1 Outbreaks)		
Long-Term Care Homes	2	11.1
Hospitals	5	27.8
Retirement Homes	2	11.1
Other	9	50.0
Unknown	0	0.0
TOTAL	18	100.0

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [04/11/2009]

* 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. October 25, 2009 – October 31, 2009

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred up to Week 43. For pH1N1 note that there have been 4 outbreaks between April 13, 2009 and August 31, 2009 - 2 in LTCHs and 2 in Hospitals.

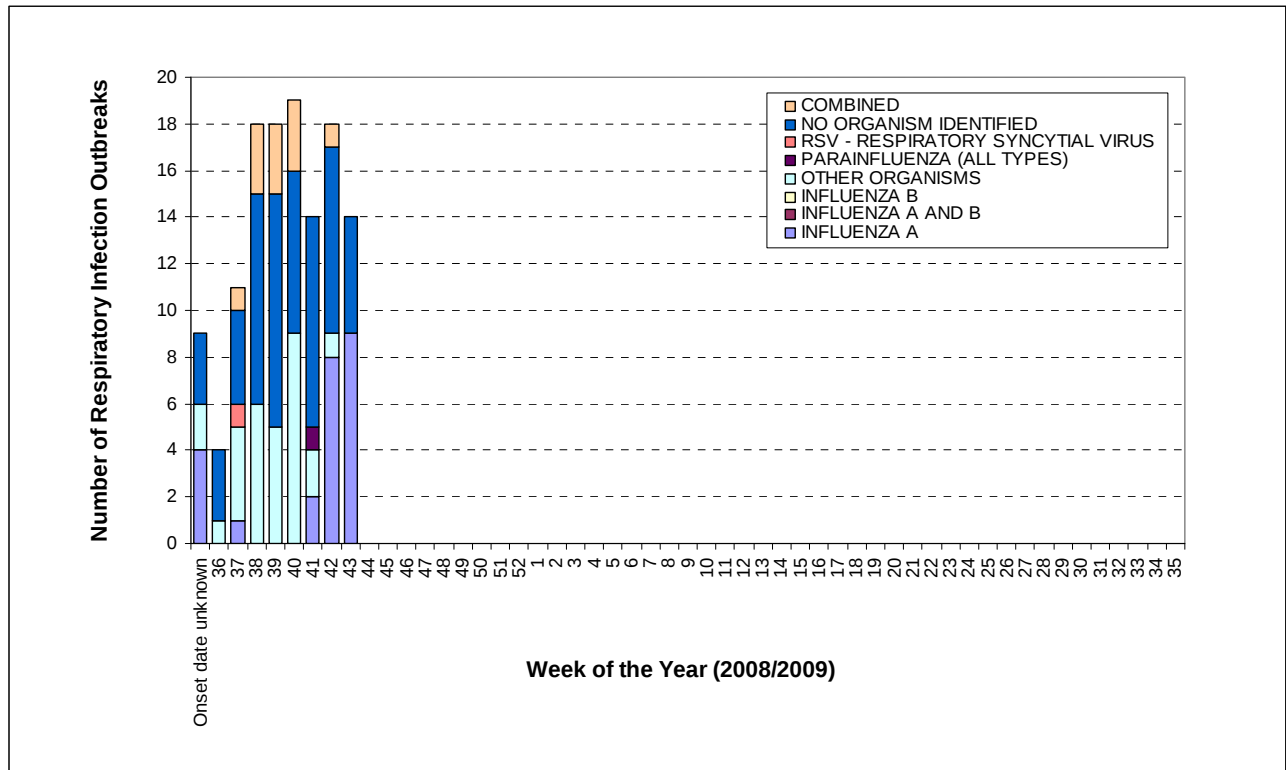
[†] Combined outbreaks include outbreaks in which more than one non-influenza organism has been identified (e.g. RSV, parainfluenza, rhinovirus, etc.)

Table 6b: Outbreak Related Complications in institutional respiratory infection outbreaks in Ontario during the Surveillance Season*

Outbreak Related Cases – All Outbreaks	N	% (of total cases)
Residents	1027	66.0
Patients	111	7.1
Staff	417	26.8
Total Cases	1555	100.0
Deaths		% (of cases per role)
Residents	20	1.9
Patients	1	0.9
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		% (of cases per role)
Residents	19	1.9
Patients	4	3.6
Staff	0	0.0
Hospitalizations		% (of cases per role)
Residents	38	3.7
Staff	0	0.0
Outbreak Related Cases – All Influenza Outbreaks	N	% (of total cases)
Residents	41	36.3
Patients	30	26.5
Staff	42	37.2
Total Cases	113	100.0
Deaths		% (of cases per role)
Residents	1	2.4
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	4	9.8
Staff	0	0.0
Outbreak Related Cases – Pandemic (H1N1) 2009 Outbreaks	N	% (of total cases)
Residents	22	29.3
Patients	24	32.0
Staff	29	38.7
Total Cases	75	100.0
Deaths		% (of cases per role)
Residents	1	4.5
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	4	18.2
Staff	0	0.0

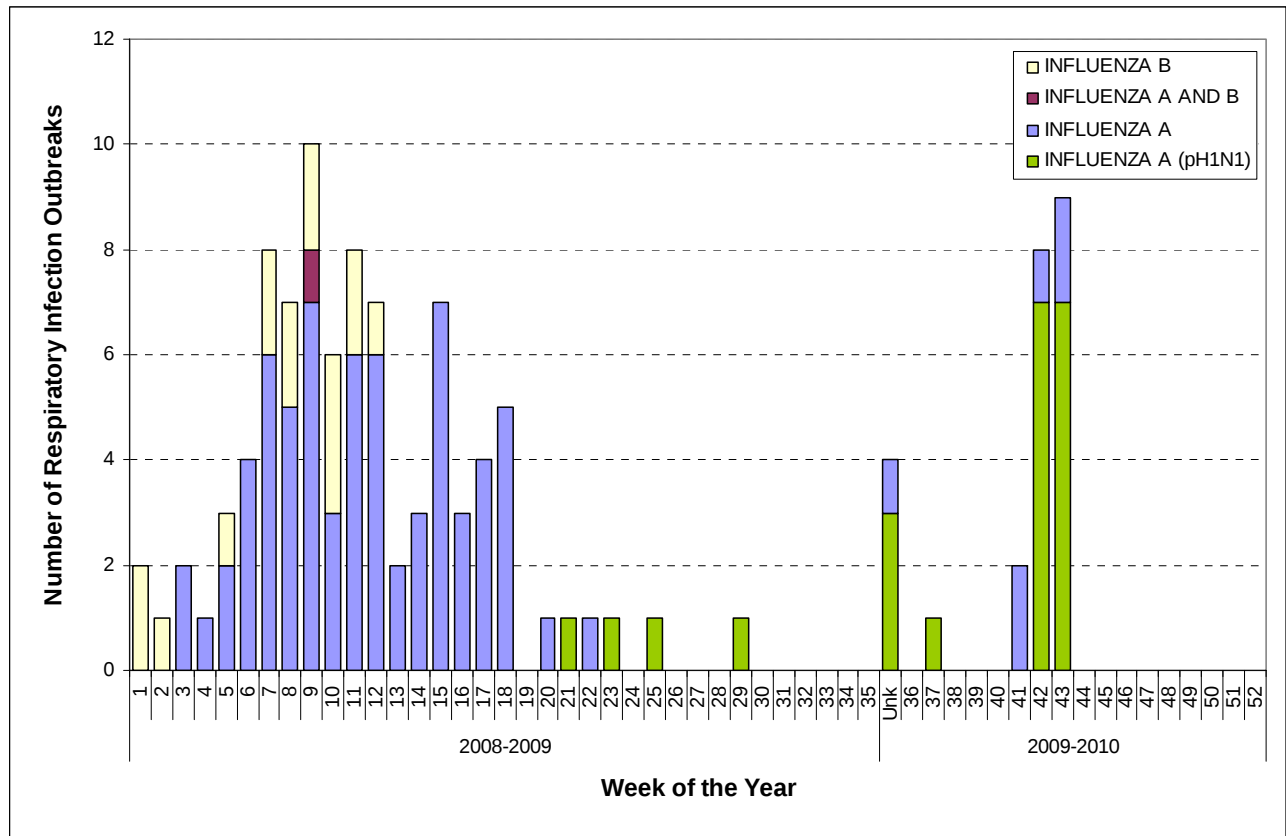
SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [05/11/2009]

Figure 8: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks up to and including Week 43 by causative organism



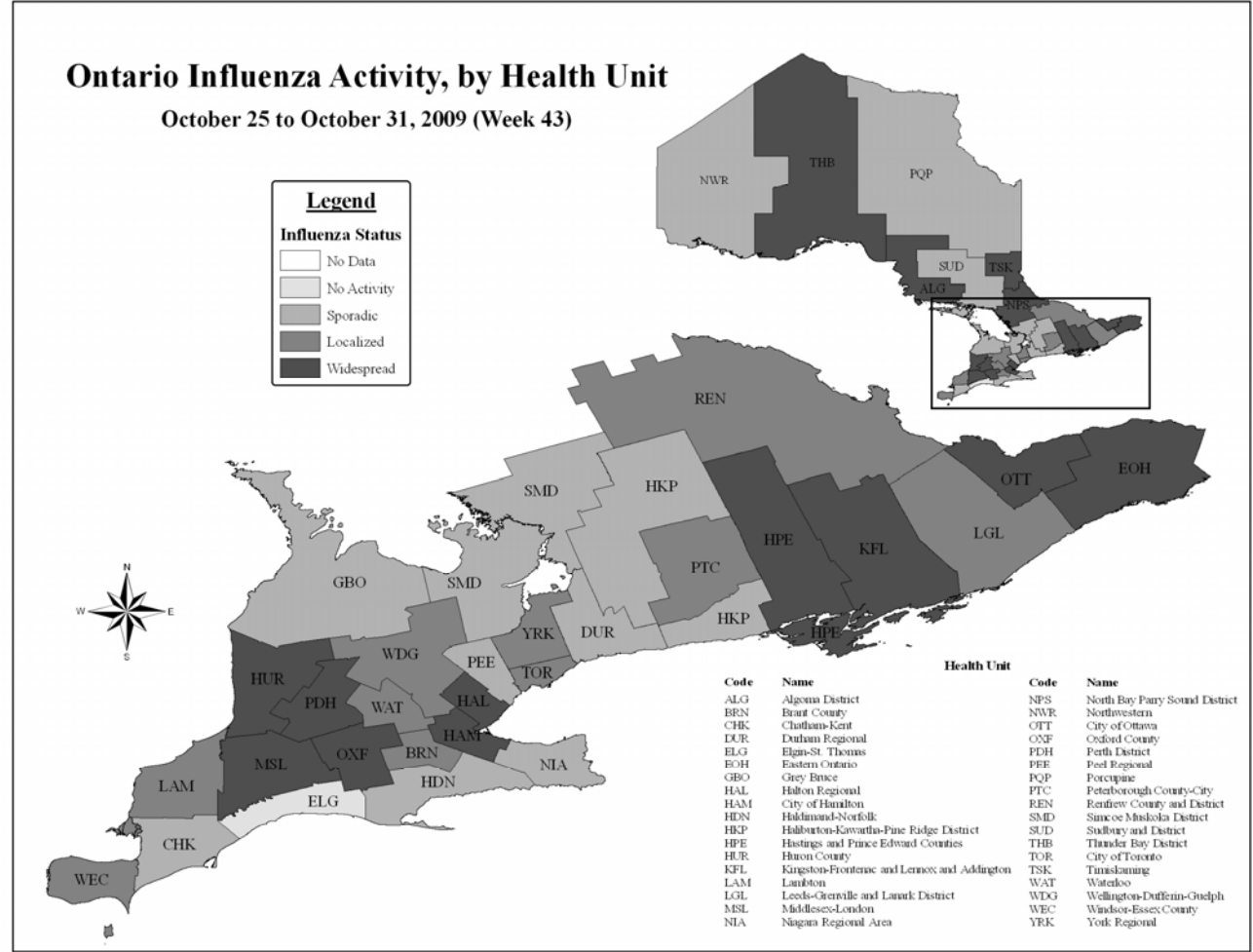
Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [04/11/2009]

Figure 9: Institutional influenza outbreaks in Ontario by onset of illness in the first case: Total Outbreaks up to and including Week 43 by subtype



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [04/11/2009]

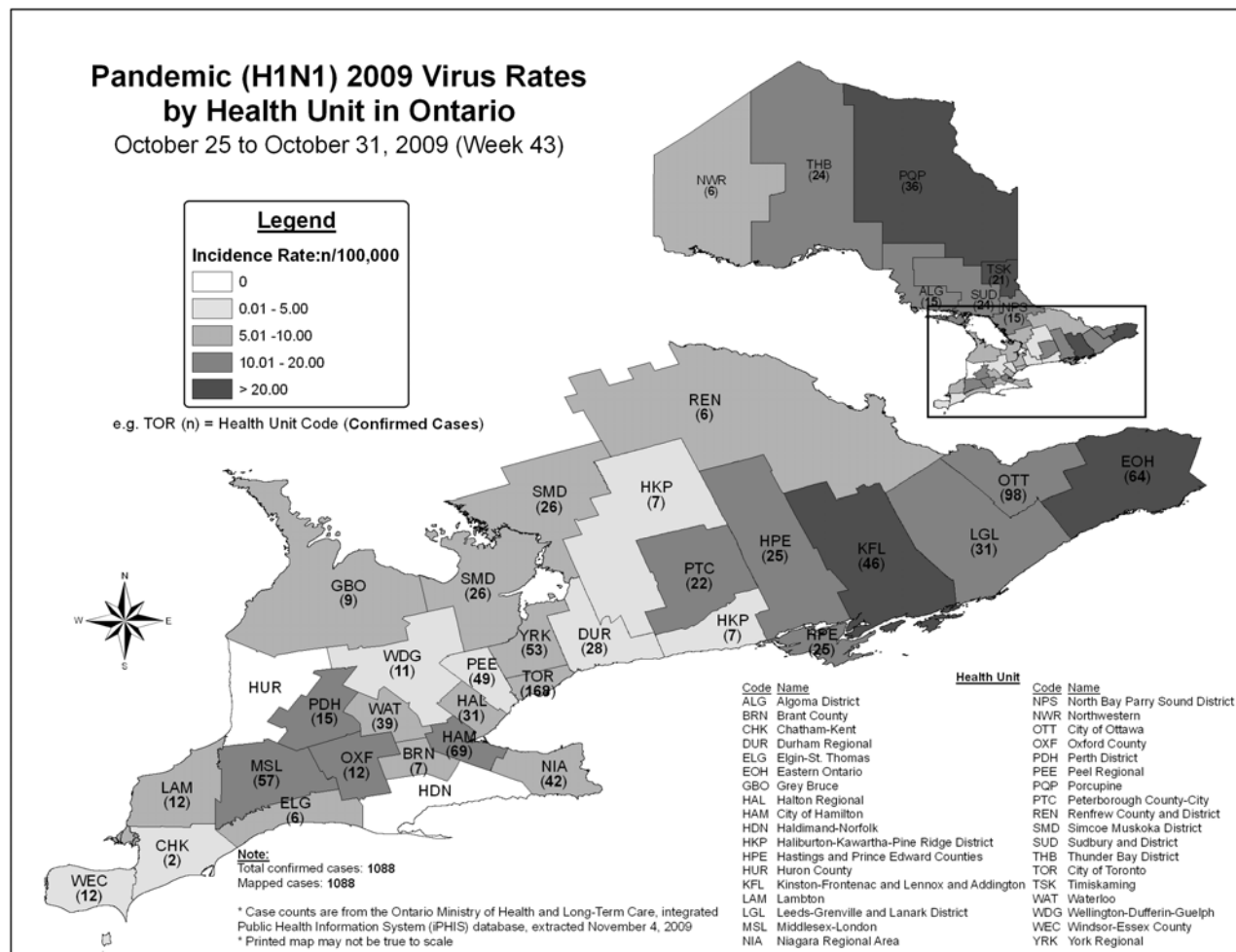
Figure 10: Influenza Activity* levels in Ontario by health unit for Week 43, 2009



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 2009-2010 season included in the Appendix-1]

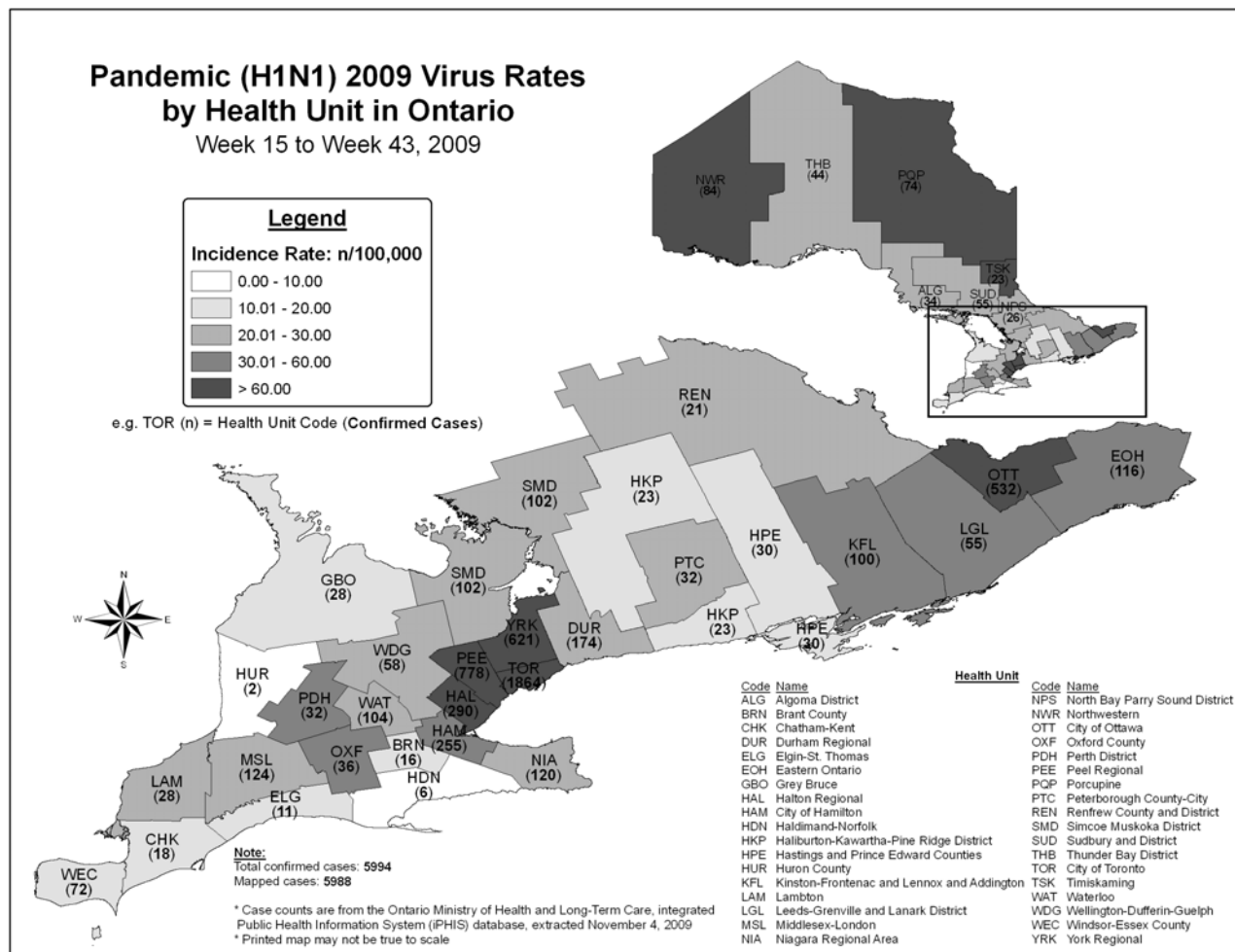
Figure 11: Pandemic (H1N1) 2009 Virus incidence rates and counts in Ontario by health unit for Week 43, 2009



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [04/11/2009]

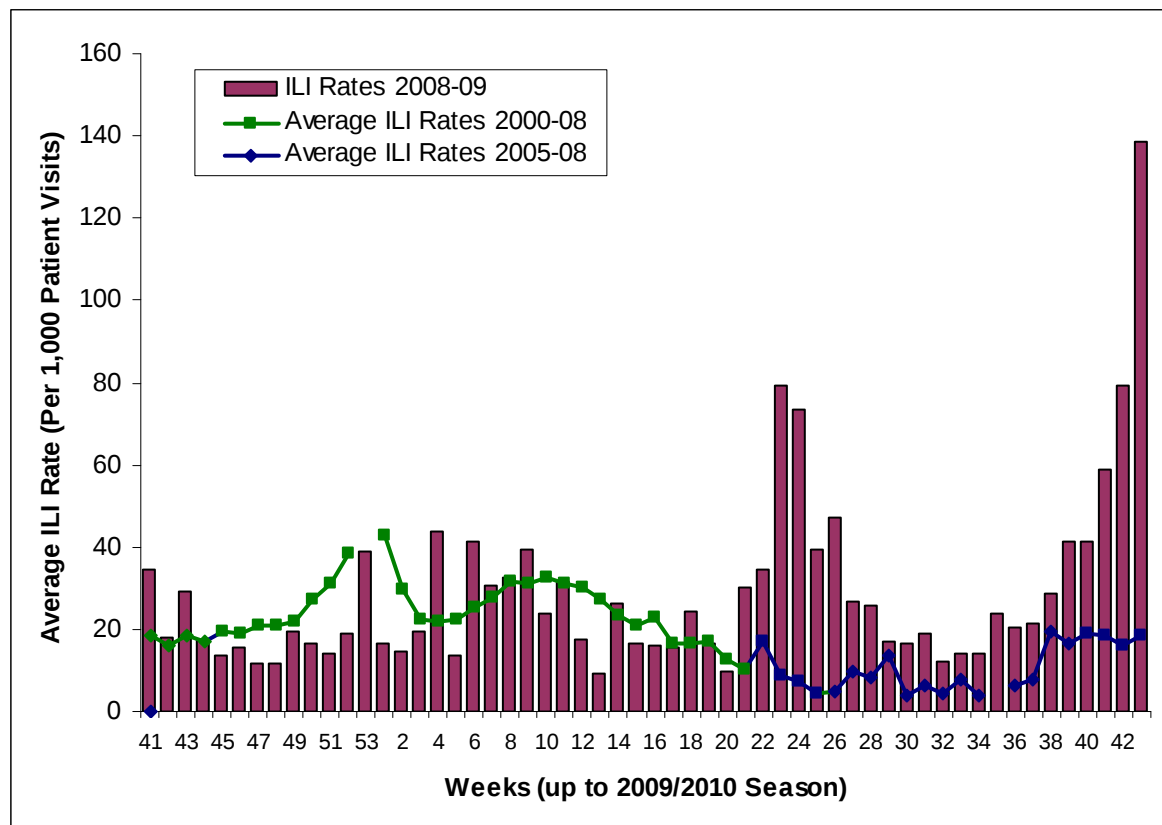
Note: Health units with a hatch indicates unavailable data for this week since an outbreak was not created in iPHIS

Figure 12: Pandemic (H1N1) 2009 Virus cumulative incidence rates and counts in Ontario by health unit, Week 15 – 43 (April 12 – October 31, 2009)



Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (IPHIS) database, extracted [04/11/2009]

Figure 13: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario up to the 2009-10 surveillance season, by report week, compared to Ontario average[†] (1999/2000 to 2007/08 seasons).



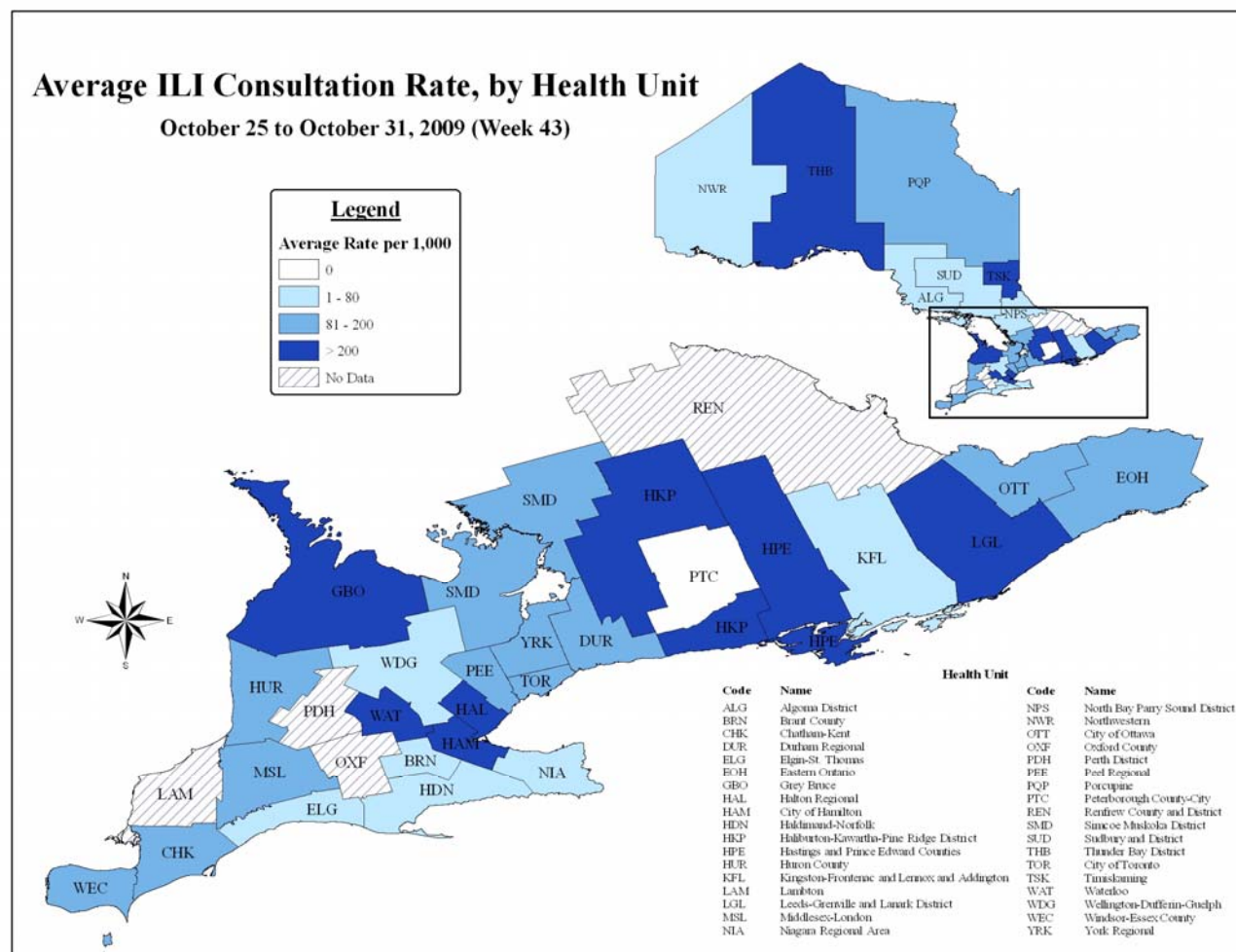
Source: Public Health Agency of Canada

* Sentinel physician information is reported to Public Health Agency of Canada, 107 sentinels reported this week.

[†]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.

Since Week 23, 2009, the number of sentinel physicians has increased, which might affect ILI rate starting from week 23.

Figure 14: Average influenza-like illness consultation rate (per 1,000 patient visits) by health unit as reported by sentinel physicians* in Ontario, for Week 43.



Source: Public Health Agency of Canada

* Sentinel physicians report ILI and patient data to the Public Health Agency of Canada; 107 sentinels reported this week of which all were matched to a health unit and represented in the above map.

Note: The small numbers of sentinel physicians reporting at the local level can make the ILI rates unstable. Please interpret these data correspondingly.

Table 7: Average influenza-like illness consultation rate (per 1,000 patient visits) by age group as reported by sentinel physicians* in Ontario, for Week 43.

Age Category	0 – 4	5 – 19	20 – 64	65 +	Unknown	TOTAL
ILI Sum	82	288	256	20	0	646
ILI Consultation Rate (per 1,000 patient visits)	235.63	402.80	104.23	17.48	0.00	138.54

Source: Public Health Agency of Canada

* Sentinel physician information is reported to the Public Health Agency of Canada; 107 sentinels reported this week.

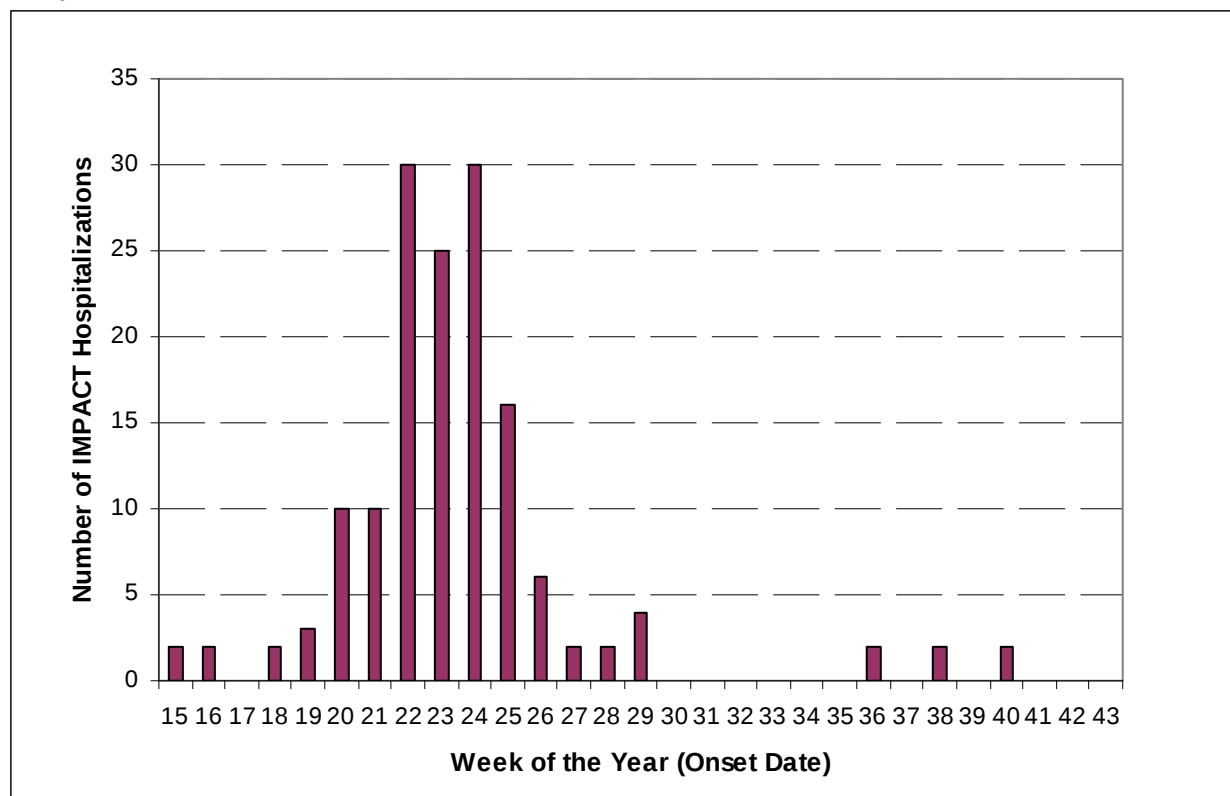
Ontario Influenza Bulletin, 2009-2010

Surveillance Week 43 (October 25, 2009 – October 31, 2009)

Immunization Monitoring Program ACTive (IMPACT) is a paediatric hospital-based national active surveillance network for adverse events following immunization and selected infectious diseases in children, including influenza-associated pediatric hospitalizations and complements the [Canadian Adverse Event Following Immunization Surveillance System](#) (CAEFISS). It involves 12 Canadian centres, two of which are in Ontario (Children's Hospital of Eastern Ontario in Ottawa and the Hospital for Sick Children, Toronto).

Reports of adverse events following immunization are reported to the Vaccine Safety Unit at the Immunization Division of the Public Health Agency of Canada. Note that the number of IMPACT hospitalizations presented in this week's bulletin has been updated with the latest data received from PHAC.

Figure 15: Number of influenza related hospitalizations in Ontario reported through IMPACT up to Week 43, by onset date.



Source: Public Health Agency of Canada

***Note:** The number of IMPACT hospitalizations presented reflect the latest data received at the time of publication, thus lower numbers of cases reported in recent weeks may be attributed in part to reporting delays.

Ontario Influenza Bulletin, 2009-2010
Surveillance Week 43 (October 25, 2009 – October 31, 2009)

Table 8: Number of Luminex test results by health unit and agent in Ontario conducted by the Ontario Agency for Health Protection and Promotion Laboratory, for the period October 26, 2009 to October 30, 2009

Health Unit	Seegene Results	Total
CITY OF OTTAWA	RHINOVIRUS	1
CITY OF TORONTO	RHINOVIRUS	1
KINGSTON-FRONTENAC AND LENNOX AND ADDINGTON	PARAINFLUENZA1	2
	RHINOVIRUS	
	RHINOVIRUS	1
MIDDLESEX-LONDON	PARAINFLUENZA 1	1
	PARAINFLUENZA RHINOVIRUS	1
NIAGARA REGIONAL AREA	PARAINFLUENZA 2	2
	RHINOVIRUS	3
OXFORD COUNTY	RHINOVIRUS	1
TIMISKAMING	RHINOVIRUS	1
Grand Total		14

Source: Ontario Agency for Health Protection and Promotion, November 6, 2009

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. Public 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 H1N1 INFLUENZA (HUMAN SWINE INFLUENZA)

1. CDC (Human swine flu investigation)
<http://www.cdc.gov/swineflu/investigation.htm>
2. PHAC (Human swine flu investigation)
http://www.phac-aspc.gc.ca/alert-alerte/swine_200904-eng.php
3. WHO Swine Flu general info
<http://www.who.int/csr/disease/swineflu/en/index.html>
4. Ontario Ministry of Health (Important Health Notices)
<http://www.health.gov.on.ca/english/providers/program/emu/ihn.html>

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>

Influenza Surveillance Weeks 2009-2010 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
WK44	1-Nov-09	7-Nov-09	10-Nov-09
WK45	8-Nov-09	14-Nov-09	17-Nov-09
WK46	15-Nov-09	21-Nov-09	24-Nov-09
WK47	22-Nov-09	28-Nov-09	1-Dec-09
WK48	29-Nov-09	5-Dec-09	8-Dec-09
WK49	6-Dec-09	12-Dec-09	15-Dec-09
WK50	13-Dec-09	19-Dec-09	22-Dec-09
WK51	20-Dec-09	26-Dec-09	29-Dec-09
WK52	27-Dec-09	2-Jan-10	5-Jan-10
WK1	3-Jan-10	9-Jan-10	12-Jan-10
WK2	10-Jan-10	16-Jan-10	19-Jan-10
WK3	17-Jan-10	23-Jan-10	26-Jan-10
WK4	24-Jan-10	30-Jan-10	2-Feb-10
WK5	31-Jan-10	6-Feb-10	9-Feb-10
WK6	7-Feb-10	13-Feb-10	16-Feb-10
WK7	14-Feb-10	20-Feb-10	23-Feb-10
WK8	21-Feb-10	27-Feb-10	2-Mar-10
WK9	28-Feb-10	6-Mar-10	9-Mar-10
WK10	7-Mar-10	13-Mar-10	16-Mar-10
WK11	14-Mar-10	20-Mar-10	23-Mar-10
WK12	21-Mar-10	27-Mar-10	30-Mar-10
WK13	28-Mar-10	3-Apr-10	6-Apr-10
WK14	4-Apr-10	10-Apr-10	13-Apr-10
WK15	11-Apr-10	17-Apr-10	20-Apr-10
WK16	18-Apr-10	24-Apr-10	27-Apr-10
WK17	25-Apr-10	1-May-10	4-May-10
WK18	2-May-10	8-May-10	11-May-10
WK19	9-May-10	15-May-10	18-May-10
WK20	16-May-10	22-May-10	25-May-10
WK21	23-May-10	29-May-10	1-Jun-10
WK22	30-May-10	5-Jun-10	8-Jun-10
WK23	6-Jun-10	12-Jun-10	15-Jun-10
WK24	13-Jun-10	19-Jun-10	22-Jun-10
WK25	20-Jun-10	26-Jun-10	29-Jun-10
WK26	27-Jun-10	3-Jul-10	6-Jul-10

Ontario Influenza Bulletin, 2009-2010
Surveillance Week 43 (October 25, 2009 – October 31, 2009)

WEEKS	START	END	Appendix C Submission to MOHLTC
WK27	4-Jul-10	10-Jul-10	13-Jul-10
WK28	11-Jul-10	17-Jul-10	20-Jul-10
WK29	18-Jul-10	24-Jul-10	27-Jul-10
WK30	25-Jul-10	31-Jul-10	3-Aug-10
WK31	1-Aug-10	7-Aug-10	10-Aug-10
WK32	8-Aug-10	14-Aug-10	17-Aug-10
WK33	15-Aug-10	21-Aug-10	24-Aug-10
WK34	22-Aug-10	28-Aug-10	31-Aug-10
WK35	29-Aug-10	4-Sep-10	7-Sep-10

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

§Health units have been requested to consider laboratory confirmed pH1N1 outbreaks in camps in their region when evaluating ILI activity levels

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.**

Current Provincial Surveillance Case Definition for pH1N1 (as of May 5, 2009):

Confirmed

Person with or without Influenza-like illness¹ and

Laboratory confirmation of swine influenza A (H1N1) virus infection by one or more of the following tests:

- RT-PCR with genotyping of H1 and/or N1 swine influenza virus
- Viral culture with strain typing
- Four-fold rise in swine influenza A(H1N1) virus specific antibodies by serology testing

¹Influenza-like illness: Acute onset of respiratory illness with fever AND one or more of the following - cough, sore throat, arthralgia, myalgia, prostration, or malaise. In cases under 5 or 65 and older fever may not be prominent.