

Ontario Influenza Bulletin

Early Spring Edition

Vol. 8, Issue 3

Weeks 1-8 (Jan.2- Feb.26, 2005)

Introduction

The current issue of Ontario Influenza Bulletin summarizes influenza activity during the weeks 1-8. This is the last installment in a series of four and covers the time period of January 2 to February 26, 2005.

Influenza activity in Ontario was mostly widespread throughout this time. During the current influenza season (2004/05) higher levels of activity were reported several weeks later than in the 2003/04 season.

Point mutation of hemagglutinin antigenic sites (antigenic drift) that occurred this season resulted in a new strain of influenza A H3N2, named A/California/7/2004(H3N2) by the Center for Disease Control (CDC) in Atlanta. In February, the National Microbiology Lab of Canada was notified that 5 isolates that were sent to CDC for further testing were in fact A/California/7/2004(H3N2). By the 24th of February, 14.3% (32/224) of the influenza strains isolated in Ontario since September 21, 2004 were characterized as A/California/7/2004(H3N2)-like. World Health Organization (WHO) has recommended A/New Caledonia/20/99(H1N1)-like virus, A/California/7/2004(H3N2)-like virus and B/Shanghai/361/2002-like virus strains to be used in vaccine production for the Northern Hemisphere for the 2005-2006 season.

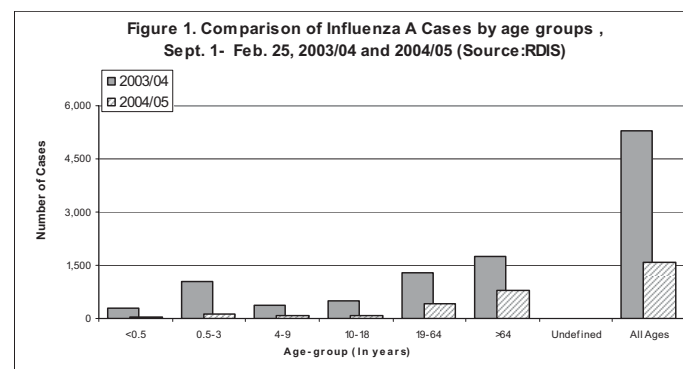
Influenza Activity in Ontario

During the period of influenza surveillance between January 2 and February 26, 2005 (reporting weeks 1-8), a total of 1,693 laboratory-confirmed cases of influenza were reported (1,521 influenza A, 172 influenza B) by Ontario laboratories to the Centre for Infectious Disease Prevention and Control (CIDPC). During this period there were 865 cases of respiratory syncytial virus (RSV), 64 cases of para influenza viruses (PIV) and 87 adenoviruses, all of which were laboratory-confirmed (Appendix 1). Including late reports, there were 2,266 isolates of influenza A, 221 isolates of

influenza B, 1,322 isolates of RSV, 87 parainfluenza viruses and 209 isolates of adenoviruses that were laboratory-confirmed and reported to the CIDPC between August 22, 2004 and February 26, 2005.

Reportable Disease Information System (RDIS)

Between January 2 to February 26, 2005, 1,468 laboratory-confirmed sporadic cases of influenza A and 76 cases of influenza B were reported to the Ministry of Health and Long-Term Care (MOHLTC) through RDIS by Ontario's health units. The total number of cases of influenza A and B reported between September 1, 2004 and February 26,



2005 were 1,573 and 116, respectively (Appendix 2). This number represents nearly a quarter of the total number of cases for all age groups for same period of time during the previous season (Figure 1).

Institutional Respiratory Infection Outbreaks

From January 2 to February 26, 2005, 444 respiratory infection outbreaks were reported by Ontario's health units to the MOHLTC (Appendix 3). Of these, 61.9% (275/444) were outbreaks of influenza A. Additionally, 3.6% (16/444) of the outbreaks were due to other organisms such as enterovirus, rhinovirus, and respiratory syncytial virus. 72% of respiratory infection outbreaks occurred in Long-Term Care Homes (320/444).

(Source: Appendix D's-preliminary reports and E's-final

reports)

Taken together, data from the CIDPC, RDIS, and Respiratory Infection Outbreak Database indicated comparatively higher activity in Ontario during the period from January 2 to February 26, 2005 than October 31, 2004 to January 1, 2005.

Influenza Activity in Canada

A summary of influenza activity in Canada as reported in FluWatch is provided below.

Influenza activity in Canada was comparatively high in weeks 1 to 8 covering the January 2 to February 26, 2005 compared to weeks 45 to 53, covering the October 31, 2004 to January 1, 2005 as discussed in the last issue (Table 1). The number of patients with influenza-like illness (ILI) seen by sentinel physicians in Canada from January 2 to February 26, 2005 ranged from 22/1000 office visits (weeks 1, ending January 8, 2005) to 49/1000 office visits (week 6, ending February 12, 2005). Additional information on influenza activity in Canada can be found at: <http://www.phac-aspc.gc.ca/fluwatch>

In Ontario, the number of patients with ILI seen by sentinel physicians ranged from 21/1000 office visits (week 3, ending Jan. 22) to 60/1000 office visits (week 8, ending Feb. 26).

Table 1: Influenza activity in Canada by Province, January 2- February 26, 2005

Provinces	Week ending Jan. 08	Week ending Jan. 15	Week ending Jan. 22	Week ending Jan. 29	Week ending Feb. 05	Week ending Feb. 12	Week ending Feb. 19	Week ending Feb. 26
ON	3-4	3-4	3-4	4	3	4	4	4
NF	1	1	1	1-2	1-2	3	4	3
PE	1	1	1	1-2	1	1	1-2	1-2
NS	3	3	1	3	4	3	3	3
NB	3	3	2-3	3	4	3	3	3
QC	3	3	3	3	3	3	3	3
MB	1-2	1-2	3-4	3	4	3	1-2	3
SK	3-4	3-4	4	4	4	4	4	3
AB	3-4	3-4	3-4	4	4	4	4	4
BC	3-4	3-4	3-4	4	4	4	3	4

- 1- No activity
- 2- Sporadic activity
- 3- Localized activity
- 4- Widespread activity

Strain Characterization

A total of 558 influenza viruses were characterized by National Microbiology Lab between August 22, 2004 and February 26, 2005. Of these 507 cases were identified as influenza A, including 85.4% (433/507) of A/Fujian/411/02-like (H3N2); and 14.6% (74/507) A/California/7/04-like viruses. For the same period of time, 51 influenza B, (50 were B/Shanghai/361/02-like viruses and 1 B/Hong Kong/330/01-like virus) were also identified (Table 2).

Table 2. Influenza strain identified by the National Microbiology Lab. August 22, 2004 to February 26, 2005

Strain	Number	(%)
A/Fujian/411/02-like virus	433	(77.6)
A/California/7/04-like virus	74	(13.3)
B/Shanghai/361/02-like virus	50	(9.0)
B/Hong Kong/330/01-like virus	1	(0.1)

Activity in the United States

Influenza activity was increased during weeks 1 to 7 (January 2, February 19, 2005) in the United State, mostly in the eastern parts and started to decline in week 8 (week ending February 26, 2005). The CDC antigenically characterized 378 influenza viruses collected by U.S. laboratories between October 1, 2004 and February 26, 2005: 284 influenza A (H3N2) viruses, 4 influenza A (H1) viruses and 90 influenza B viruses.

Antigenic Characterization:

From October 3, 2004 to February 26, 2005, WHO and National Respiratory and Enteric Virus Surveillance System (NREVSS) laboratories in the United States isolated 13,759 influenza viruses, 11,415 (83%) were influenza A viruses and 2,344 (17.0%) were influenza B viruses. Three thousand five hundred fifty-four (31.1%) of influenza A viruses have been subtyped; 3,543 (99.7%) were influenza A (H3N2) and 11 (0.3%) were influenza A (H1N1) subtype.

For information on activity in the United States please visit:

<http://www.cdc.gov/flu/weekly/>

Activity in Europe

Influenza activity increased sharply throughout January, 2005 in Spain, The Iberian Peninsula and Italy. By the end of January, activity had decreased in Spain, while an increase in influenza activity was reported by the majority of countries participating in European Influenza Surveillance Scheme (EISS). In week 6 ending February 13, 2005 most of the

European countries were experiencing medium intensity activity and by the end of week 7 the flu “wave” moved further to the North-East of Europe. Influenza activity rose for the week ending Feb. 27, in the Czech Republic, while other countries in Central Europe had probably reached their peak.

Based on the sub-typing of all influenza viruses detected from September 5, 2004 to week 8, week ending February 27, 2005 (N=8,084; sentinel and non-sentinel data), 3,933 (49%) were influenza A (not subtyped), 2,938 (36%) were A(H3) [1,122 of these were A(H3N2)], 430 (5%) were A(H1) [201 of these were A(H1N1)] and 783 (10%) were B.

A total of 1,324 influenza viruses (16% of all isolates) were antigenically and/or genetically characterized: 631 A/Wellington/1/2004 (H3N2)-like viruses, 152 A/California/7/2004 (H3N2)-like viruses, 76 A/Fujian/411/2002 (H3N2)-like viruses, two A/Panama/2007/99 (H3N2)-like viruses, 262 A/New Caledonia/20/99 (H1N1)-like viruses, 121 B/Jiangsu/10/2003-like viruses and 80 B/Hong Kong/330/2001-

like viruses.

For information on influenza activity in Europe please visit:

http://www.eiss.org/cgi-files/bulletin_v2.cgi

Activity Internationally

Influenza activity began in October 2004 in North America and increased gradually in countries in the northern hemisphere. In January, some countries in Africa, Europe and North America saw influenza activity gradually increase. The overall levels of influenza activity remained “medium-low” in most parts of the world by the end of January 2005.

For more information please visit the WHO’s website for the weeks 1-8, 2005 at:

<http://www.who.int/wer/2005/en/>

Appendix 1. Respiratory viruses isolated and reported to the CIDPC (2004/05 Season)

Organism Time interval	Influenza Viruses			Other Respiratory Viruses						
	A & B	A	B	RSV	PIV1	PIV2	PIV3	PIV4	Other PIVs	Adenoviruses
Total number until end of week 53	113	109	4	222	39	12	23	6	2	92
Week ending January 8, 2005 (week 1)	57 [170]	55 [164]	2 [6]	67 [289]	2 [41]	2 [14]	1 [24]	0 [6]	0 [2]	9 [101]
Week ending January 15, 2005 (week 2)	118 [288]	114 [278]	4 [10]	77 [366]	4 [45]	2 [16]	4 [28]	3 [9]	1 [3]	17 [118]
Week ending January 22, 2005 (week 3)	139 [427]	130 [408]	9 [19]	70 [436]	5 [50]	0 [16]	2 [30]	1 [10]	0 [3]	11 [129]
Week ending January 29, 2005 (week 4)	178 [605]	170 [578]	8 [27]	131 [567]	6 [56]	1 [17]	3 [33]	1 [11]	0 [3]	8 [137]
Week ending February 5, 2005 (week 5)	220 [825]	199 [777]	21 [48]	74 [641]	3 [59]	1 [18]	0 [33]	1 [12]	0 [3]	8 [145]
Week ending February 12, 2005 (week 6)	288 [1113]	253 [1030]	35 [83]	135 [776]	5 [64]	0 [18]	1 [34]	0 [12]	0 [3]	12 [157]
Week ending February 19, 2005 (week 7)	324 [1437]	275 [1305]	49 [132]	186 [962]	7 [71]	0 [18]	4 [38]	0 [12]	0 [3]	12 [169]
Week ending February, 2005 (week 8)	388 [1825]	325 [1630]	63 [195]	125 [1087]	1 [72]	0 [18]	2 [40]	1 [13]	0 [3]	10 [179]
Number of late reports, from August 22, 2004 to February 26, 2005	[662]	[636]	[26]	[235]	[4]	[5]	[0]	[1]	[0]	[30]
Total number of isolates, from August 22, 2004 to February 26, 2005*	[2,487]	[2,266]	[221]	[1322]	[76]	[23]	[40]	[14]	[3]	[209]

[] Accumulative numbers from August 22, 2004
* Late reports are included

Appendix 2. Weekly Lab. Confirmed Cases of Influenza by Health units, week 1-8 (January 2 to February 26,2005. Source of data: RDIS)

Health Unit	Week ending January 8, 2005 (week 1)		Week ending January 15, 2005 (week 2)		Week ending January 22, 2005 (week 3)		Week ending January 29, 2005 (week 4)		Week ending February 5, 2005 (week 5)		Week ending February 12, 2005 (week 6)		Week ending February 19, 2005 (week 7)		Week ending February 26, 2005 (week 8)	
	Influenza A	Influenza B	Influenza A	Influenza B	Influenza A	Influenza B	Influenza A	Influenza B	Influenza A	Influenza B	Influenza A	Influenza B	Influenza A	Influenza B	Influenza A	Influenza B
Algoma			4 [4]		[4]		1 [5]		5 [10]		9 [19]		5 [24]		3 [27]	
Brant	1 [1]		[1]		[1]		1 [2]		[2]		3 [5]		11 [16]		8 [24]	
Chatham - Kent											2 [2]		[2]		[2]	
Durham	6 [7]		2 [9]		5 [14]		2 [16]		[16]		[16]		[16]		[16]	
Eastern Ontario	13 [39]		9 [48]		15 [63]		4 [67]		2 [69]		5 [74]		6 [80]		2 [82]	
Elgin - St. Thomas																
Grey-Bruce	1 [1]		1 [2]		1 [3]		3 [6] 1 [1]		7 [13] [1]		[13] [1]		6 [19] 2 [3]		7 [26] [3]	
Haldimand-Norfolk		[2]	[2]		[2]		[2]		[2]		1 [3]		4 [7] 1 [1]		[7] [1]	
Haliburton KPR	1 [3]		6 [9]		7 [16]		2 [18]		7 [25] 1 [1]		9 [34] 1 [2]		6 [40] 3 [5]		12 [52] 2 [7]	
Halton	1 [1]		2 [3]		[3]		8 [11]		18 [29]		23 [52] 1 [1]		21 [73] 2 [3]		14 [87] 2 [5]	
Hamilton-Wentworth	6 [8] 1 [1]		[8] [1]		[8] [1]		[8] [1]		[8] [1]		[8] [1]		[8] [1]		[8] [1]	
Hastings - P.E.	[1]		3 [4]		4 [8]		[8]		2 [10] 2 [2]		2 [12] 2 [4]		4 [16] [4]		6 [22] 3 [7]	
Huron							[4]		1 [5]		[5]		2 [7]		1 [8]	
Kingston & FLA		[1]	2 [2] [1]		3 [5] [1]		2 [7] [1]		1 [8] [1]		1 [9] [1]		[9] [1]		[9] [1]	
Lambton																
Leeds - Grenville					1 [1]		[1]		[1]		[1]		[1]		[1]	
Middlesex-London											1 [1]		2 [3]		[3]	
Muskoka-Parry Sound	2 [2]		[2]		[2]		[2]		[2]		18 [20]		20 [40]		[40]	
Niagara	1 [1]		2 [3]		6 [9]		[9]		16 [25]		7 [32] 1 [1]		11 [43] [1]		6 [49] 3 [4]	
Northwest																
North Bay			2 [2]		6 [8]		4 [12]		8 [20]		13 [33]		4 [37]		8 [45]	
Ottawa-Carleton	61 [83] [1]		23 [106] [1]		22 [128] 1 [2]		13 [141] 1 [3]		8 [149] [3]		9 [158] 1 [4]		3 [161] [4]		14 [175] [4]	
Oxford											5 [5]		10 [15] 1 [1]		1 [16] [1]	
Peel	1 [5]		2 [7]		2 [9]		7 [16]		4 [20]		27 [47] 3 [3]		19 [66] [3]		13 [79] 1 [4]	
Perth					2 [2]		[2]		1 [3]		[3] 1 [1]		5 [8] [1]		6 [14] [1]	
Peterborough			4 [4] 2 [2]		1 [5] [2]		[5] 1 [3]		6 [11] 2 [5]		6 [17] 1 [6]		9 [26] 4 [10]		10 [36] 1 [11]	
Porcupine			4 [4]		[4]		1 [5]		[5]		8 [13]		12 [25]		5 [30]	
Renfrew	2 [2]		[2]		[2]		6 [8]		[8]		[8]		[8]		2 [10]	
Simcoe	6 [6]		1 [7]		4 [11] 1 [1]		3 [14] [1]		3 [17] [1]		12 [29] 1 [2]		25 [54] 5 [7]		4 [58] [7]	
Sudbury													5 [5] 3 [3]		11 [16] 2 [5]	
Timiskaming	1 [1]		[1]		[1]		[1]		7 [8]		[8]		[8]		[8]	
Thunder Bay									1 [1]		1 [2]		2 [4]		[4]	
Toronto	6 [25]		11 [36] 1 [1]		22 [58]		29 [87] 1 [2]		49 [136] 4 [6]		47 [183] 10 [16]		55 [238] 1 [17]		92 [330] 17 [34]	
Waterloo	1 [1]		1 [2]		1 [3]		4 [7] 4 [4]		1 [8] [4]		[8] [4]		12 [20] 4 [8]		15 [35] 1 [9]	
Wel - Duf - Guelph							3 [3]		5 [8]		5 [13]		6 [19] 2 [2]		15 [34] 2 [4]	
Windsor - Essex					1 [1]		[1]		[1]		3 [4] 1 [1]		[4] [1]		[4] [1]	
York	1 [27] 1 [2]		[27] [2]		[27] [2]		[27] [2]		5 [32] [2]		128 [160] 1 [3]		38 [198] 1 [4]		18 [216] 2 [6]	
Total	111 [216] [15]		79[295] [38]		101[396] [210]		99[495] [818]		157[652] [927]		345[997] [2451]		303[1300] [2980]		273[1573] [36116]	

[] Cumulative number from September 1,2004

Appendix 3. Respiratory infection outbreaks in institutions from January 2 to February 26, 2005

Respiratory Infection Outbreaks in Institutions

	Week ending January 8, 05 (week 1)	Week ending January 15, 05 (week 2)	Week ending January 22, 05 (week 3)	Week ending January 29, 05 (week 4)	Week ending February 5, 05 (week 5)	Week ending February 12, 05 (week 6)	Week ending February 19, 05 (week 7)	Week ending February 26, 05 (week 8)
Total Respiratory Infection Outbreaks in Institutions	52 [265]	36 [301]	40 [341]	42 [379]	59 [435]	86 [517]	69 [582]	60 [635]
Influenza A	20	12	25	25	41	62	53	37
Influenza A & B	1	0	0	0	2	4	1	3
Influenza A & other organism	1	1	0	3	1	3	0	0
Influenza B	0	0	0	0	2	1	0	2
Influenza B & other organism	0	0	0	1	0	0	0	0
Other organisms	3	1	1	0	2	3	2	4
No organism isolated	23	20	11	12	9	11	12	11
Laboratory results pending	3	2	3	1	2	2	1	3
No specimen sent for laboratory testing	1	0	0	0	0	0	0	0

Ongoing Outbreaks

Influenza A	5	4	5	6	9	12	17	16
Influenza A & B	3	1	3	4	6	7	14	10
Influenza A & other organism	0	0	0	0	0	1	0	0
Influenza B	0	0	0	0	0	0	0	0
Influenza B & other organism	0	0	0	0	0	0	0	0
Other organisms	0	0	0	0	0	0	0	0
No organism isolated	2	2	1	1	0	2	1	1
Laboratory results pending	0	1	1	1	2	2	1	2
No specimen sent for laboratory testing	0	0	0	0	0	0	0	0

Types of Institutions

LTCFs	36	26	30	33	45	63	50	37
Hospitals	4	3	7	5	5	9	10	10
Other*	12	7	3	4	9	14	9	13

[] The number represents the total number of institutional outbreaks from the beginning of this season, September 1, 2004 to date indicated.
 * Retirement Homes, 10 beds, children's residences, facilities operated under the Developmental Services Act etc.