

# Influenza Weekly Surveillance Report



A REPORT BY THE HEALTH PROTECTION SURVEILLANCE CENTRE IN COLLABORATION WITH THE IRISH COLLEGE OF GENERAL PRACTITIONERS, THE NATIONAL VIRUS REFERENCE LABORATORY & THE DEPARTMENTS OF PUBLIC HEALTH

Week 15 2008 (7<sup>th</sup> – 13<sup>th</sup> April 2008)

## Summary

During week 15 2008, GP consultation rates for influenza-like illness (ILI) decreased further and remain at low levels. Five influenza B positive specimens were detected by the National Virus Reference Laboratory (NVRL) during week 15 2008.

## Background

This is the eighth season of influenza surveillance using computerised sentinel general practices in Ireland. The Health Protection Surveillance Centre (HPSC) is working in collaboration with the Irish College of General Practitioners (ICGP), the National Virus Reference Laboratory (NVRL) and the Departments of Public Health on this sentinel surveillance project. Fifty-two sentinel general practices have been recruited to report on the number of patients with ILI on a weekly basis. ILI is defined as the sudden onset of symptoms with a temperature of 38°C or more, with two or more of the following: headache, sore throat, dry cough and myalgia.

Sentinel GPs send a combined nasal and throat swab, to the NVRL, on at least one patient per week where a clinical diagnosis of ILI is made during the influenza season. This report includes data on ILI cases reported by sentinel GPs, influenza test results from the NVRL, influenza notifications, registered deaths attributed to influenza, and regional influenza activity reported by the Departments of Public Health.

## Results

### Clinical Data

Sentinel GPs reported 13 ILI cases during week 15 2008, corresponding to an ILI consultation rate of 7.2 per 100,000 population, a decrease from the updated rate of 11.7 per 100,000 in week 14 2008 (figure 1). Forty-four (84.6%) sentinel practices reported during week 15 2008.

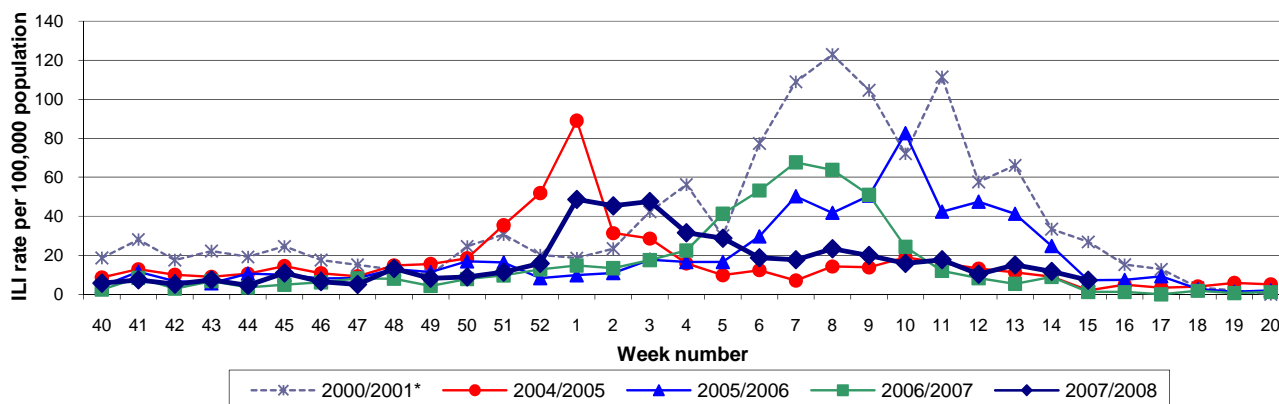
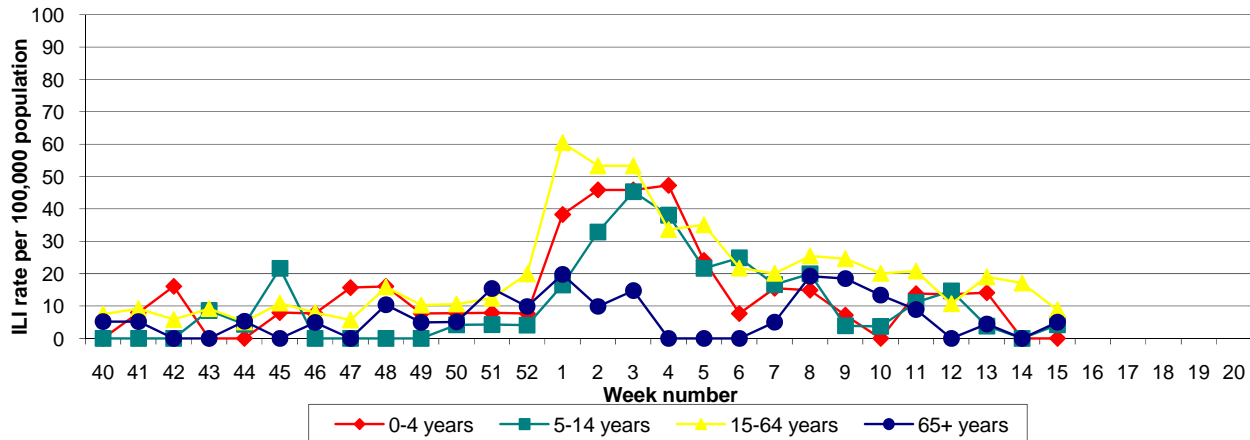


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001\*, 2004/2005, 2005/2006, 2006/2007 & 2007/2008 influenza seasons \*Highest recorded levels of ILI activity since initiation of sentinel surveillance

## Results (continued)

During week 15 2008, ILI rates remained at low levels in all age groups. No ILI cases were reported in the 0-4 year age group. One ILI case was reported in the 5-14 year age group (4.2 per 100,000 population), 11 in the 15-64 year age group (8.8 per 100,000 population) and one ILI case was reported in those aged 65 years or older (5.0 per 100,000) during week 15 2008, as shown in figure 2.



**Figure 2:** Age specific GP consultation rate\* for ILI per 100,000 population by week during the 2007/2008 influenza season  
\*Please note the denominator used in the age specific consultation rate is from the 2006 census data; this assumes that the age distribution of the sentinel general practices is similar to the national age distribution.

### ***Oseltamivir Resistance in Ireland***

Results from the National Virus Reference Laboratory (NVRL) on antiviral drug susceptibility among seasonal influenza viruses circulating in Ireland have revealed that some of the A (H1N1) viruses in circulation this winter are resistant to the antiviral drug, oseltamivir (also known by the brand name Tamiflu). The NVRL conducted nucleotide sequencing on specimens taken by sentinel GPs between December 2007 and February 2008. Five of 55 specimens (9.1%) tested by the NVRL have shown resistance to oseltamivir. To date, oseltamivir resistant viruses have been detected in 15 European countries (including Ireland), the USA, Canada, Australia and Hong Kong.

Experts from the European Centre for Disease Prevention and Control (ECDC), the European Commission, the European Influenza Surveillance Scheme (EISS) and the World Health Organization (WHO) are currently assessing the significance of this information. An interim risk assessment has been published by ECDC.

Latest information on oseltamivir resistance in Europe: <http://ecdc.europa.eu/>  
ECDC Report on Interim risk assessment: [http://www.ecdc.europa.eu/pdf/080127\\_os.pdf](http://www.ecdc.europa.eu/pdf/080127_os.pdf)

### ***Virological Data from the NVRL***

The NVRL tested four specimens taken by sentinel GPs during week 15 2008, three of which were positive for influenza B. The NVRL also tested 52 non-sentinel specimens taken during week 15 2008, two of which were positive for influenza B.

To date this season, 187 (8.3%) specimens have tested positive for influenza from sentinel and non-sentinel sources (n=2264): 28 A (unsubtyped), 75 A (H1), 8 A (H3) and 76 B viruses. Of the 111 influenza A positive specimens detected this season, influenza A (H1) accounts for 90.4% of subtyped (n=83) specimens. Based on genetic characterisation of 52 viruses, 45 were A/Solomon Islands/3/2006 (H1N1)-like and seven were A/Wisconsin/67/2005 (H3N2)-like. A/Solomon Island/3/2006-like virus and A/Wisconsin/67/2005 (H3N2)-like virus are both included in the 2007/2008 influenza vaccine.

Two non-sentinel specimens<sup>1</sup> were positive for respiratory syncytial virus (RSV) during week 15 2008 (table 1). NVRL detections of RSV from non-sentinel sources peaked during week 47 2007 (figure 4). To date this season, the NVRL has detected the following positive specimens from non-sentinel sources: 33 influenza A, 24 influenza B, 459 RSV, 10 Adenovirus, 2 parainfluenza virus (PIV) type-1, 13 PIV-2 and 14 PIV-3. Influenza positive specimens by HSE-Area and age group (in years) for the current week and the 2007/2008 season to date are shown in tables 2 and 3, respectively. Figure 3 compares the ILI consultation rates by season and the number of positive influenza specimens tested by the NVRL. Figure 4 compares the number and percentage of non-sentinel RSV positive specimens detected during the 2006/2007 and 2007/2008 influenza seasons.

**Table 1:** Number of sentinel and non-sentinel respiratory specimens and positive results reported by the NVRL for week 15 2008 and the 2007/2008 season to date

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV	% RSV Positive
<b>15 2008</b>	Sentinel	4	3	75.0	0	3	-	-
	Non-Sentinel	52	2	3.8	0	2	2	3.8
	<b>Total</b>	<b>56</b>	<b>5</b>	<b>8.9</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>3.6</b>
<b>Season to date</b>	Sentinel	307	130	42.3	78	52	-	-
	Non-Sentinel	1957	57	2.9	33	24	459	23.5
	<b>Total</b>	<b>2264</b>	<b>187</b>	<b>8.3</b>	<b>111</b>	<b>76</b>	<b>459</b>	<b>20.3</b>

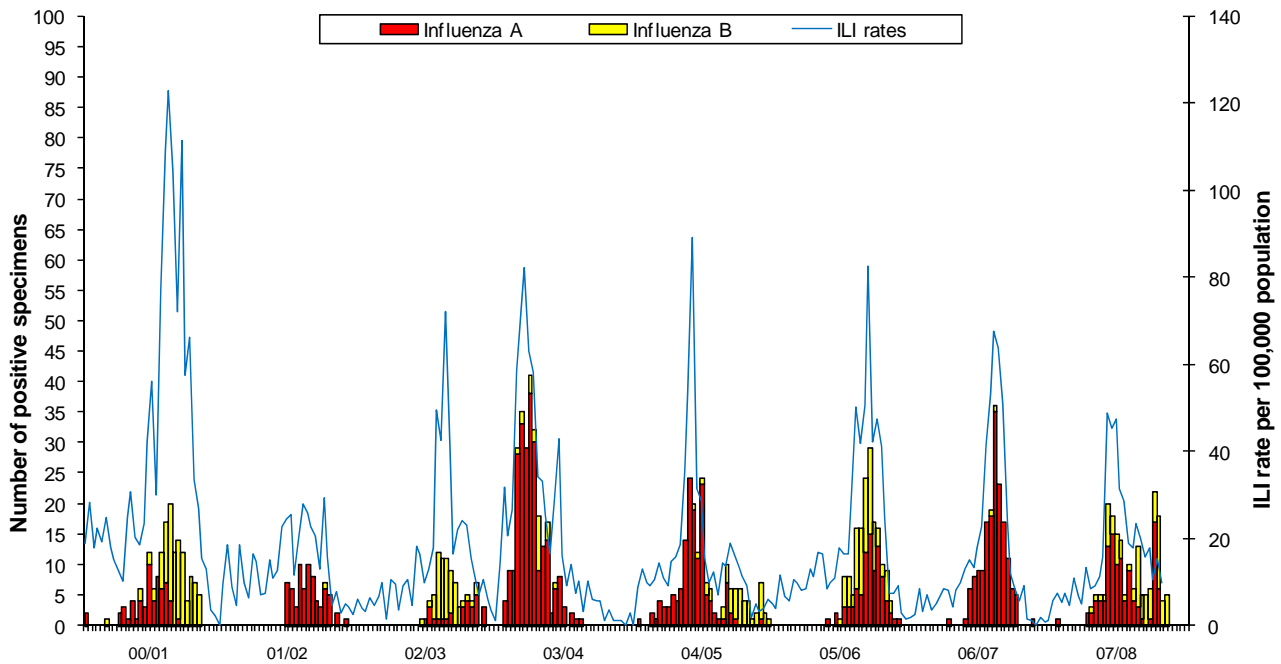
**Table 2:** Total number of sentinel and non-sentinel influenza A and B positive specimens by HSE-Area, reported by the NVRL for week 15 2008 and the 2007/2008 season to date

	Week 15 2008			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-E	0	0	0	42	34	76
HSE-M	0	0	0	8	1	9
HSE-MW	0	1	1	7	6	13
HSE-NE	0	2	2	13	12	25
HSE-NW	0	1	1	2	8	10
HSE-SE	0	0	0	13	7	20
HSE-S	0	0	0	17	3	20
HSE-W	0	0	0	9	4	13
Unknown	0	1	1	0	1	1
<b>Total</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>111</b>	<b>76</b>	<b>187</b>

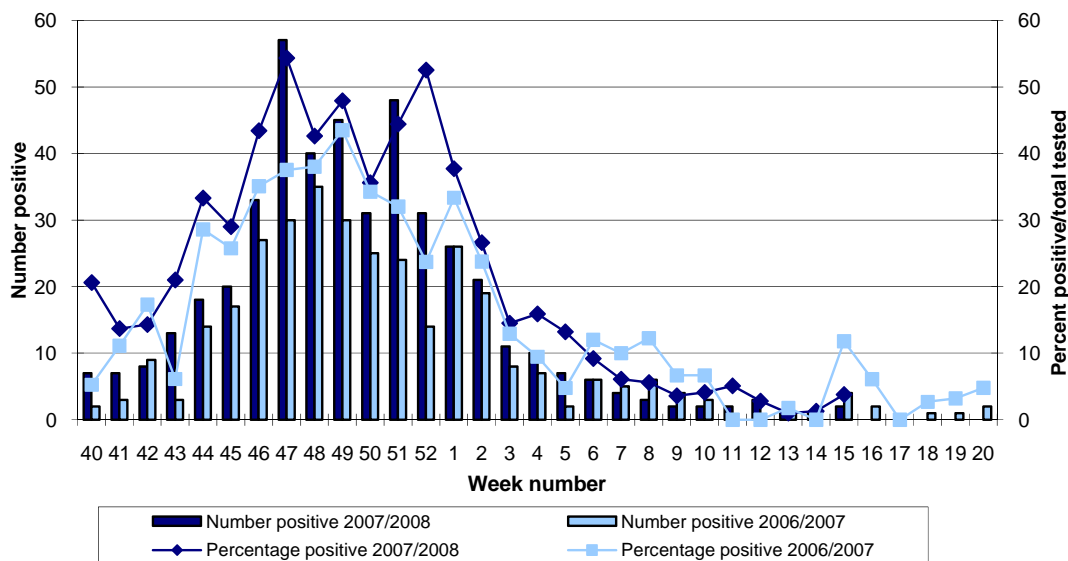
**Table 3:** Total number of sentinel and non-sentinel influenza A and B positive specimens by age group (in years) reported by the NVRL for week 15 2008 and the 2007/2008 season to date

	Week 15 2008			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
<b>0-4 years</b>	0	0	0	6	3	9
<b>5-14 years</b>	0	1	1	8	3	11
<b>15-64 years</b>	0	4	4	76	67	143
<b>65 years and older</b>	0	0	0	16	3	19
<b>Age group unknown</b>	0	0	0	5	0	5
<b>Total</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>111</b>	<b>76</b>	<b>187</b>

<sup>1</sup> Please note that non-sentinel specimens include all specimens referred to the NVRL, these specimens are mainly from hospitals and some GPs and may include more than one specimen from each case.



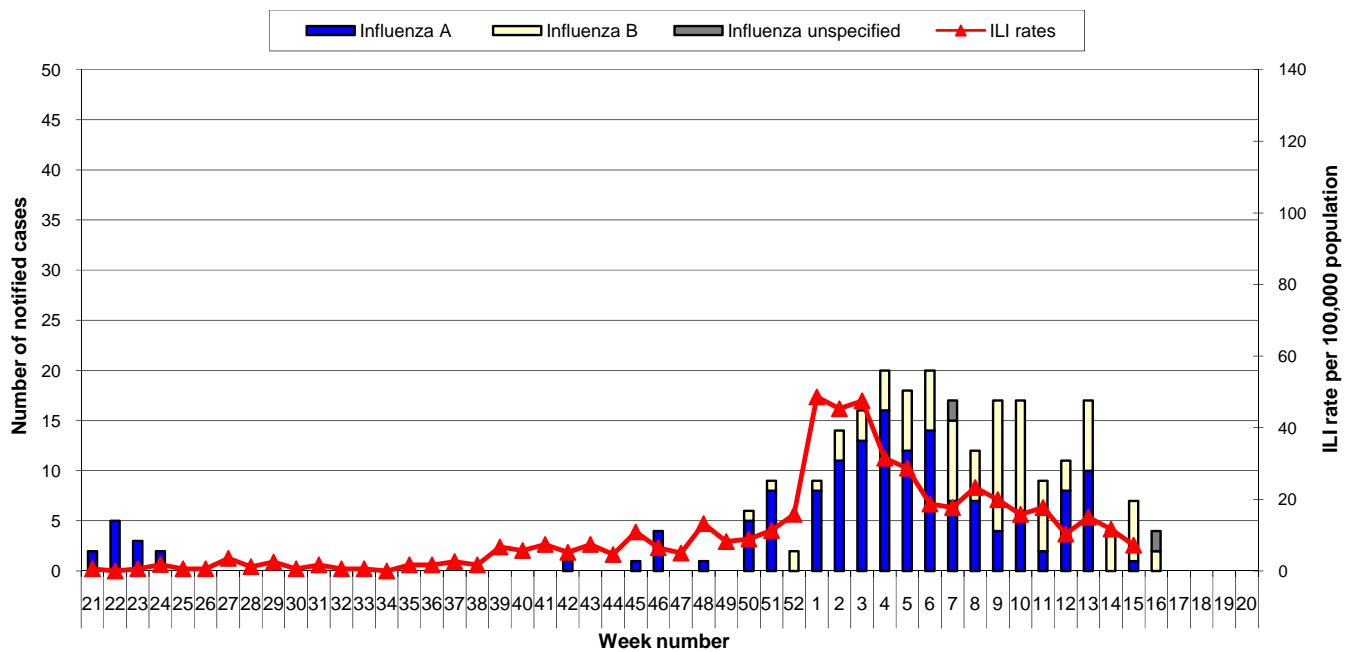
**Figure 3:** GP ILI consultation rate per 100,000 population and the number of positive influenza specimens detected by the NVRL by week and season, 2000/2001 - 2007/2008



**Figure 4.** Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2006/2007 and 2007/2008 influenza seasons

**Weekly Influenza Notifications**

One influenza A and six influenza B cases were notified to HPSC during week 15 2008: three from HSE-E, two from HSE-NE, one from HSE-NW and one from HSE-S. Two influenza B and two influenza type unspecified cases were notified to HPSC during week 16 2008: all from HSE-E. Influenza cases notified to HPSC during the summer of 2007 and during the 2007/2008 influenza season are shown in figure 5 and compared to GP ILI consultation rates.



**Figure 5:** Number of notifications\* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2007 and the 2007/2008 influenza season  
 \*Notification data are provisional and were extracted from [CIDR](#) on the 16/04/2008 at 11:02.

**Mortality Data**

To date this season, two deaths attributed to influenza have been registered with the General Register Office (GRO). These deaths were both in adults over 65 years of age, one in HSE-NW registered in week 8 2008 and one in HSE-S registered in week 14 2008.

**Outbreak Reports**

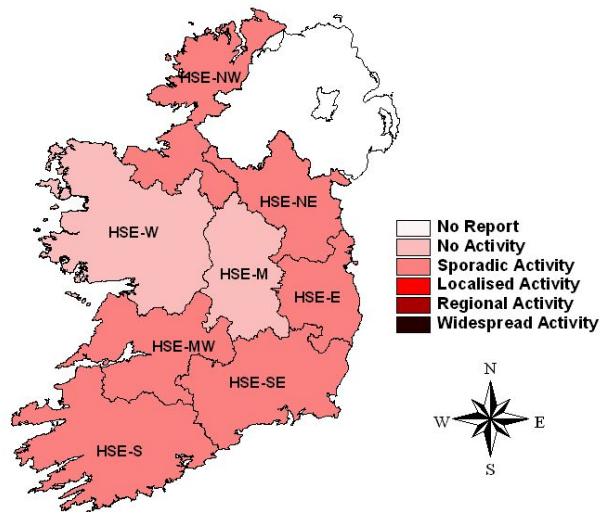
One outbreak of ILI/influenza has been reported to HPSC to date this season, this outbreak was reported from HSE-E during week 12 2008.

**Regional Influenza Activity by HSE-Area**

Influenza activity is reported on a weekly basis from the Departments of Public Health. Influenza activity is based on sentinel GP ILI consultation rates, laboratory confirmed influenza cases and ILI/influenza outbreaks. Each Department of Public Health has established one sentinel hospital in each HSE area, to report total hospital admissions, accident and emergency admissions and respiratory admissions data on a weekly basis. Sentinel primary and secondary schools were also established in each HSE-Area in close proximity to the sentinel GPs, reporting absenteeism data on a weekly basis.

No significant increases in hospital respiratory admissions were reported from sentinel hospitals during week 14 2008. School absenteeism increased in two sentinel secondary schools during week 14 2008, one in HSE-E and one in HSE-MW.

During week 14 2008, no influenza activity was reported in HSE-M and HSE-W and sporadic activity was reported in all other HSE-Areas (figure 6). Regional or widespread influenza activity has not been reported from any HSE-Area this season. To date this season, influenza positive specimens have been detected in all HSE-Areas.



**Figure 6:** Map of influenza activity by HSE-Area for week 14 2008

#### ***Influenza Activity in Northern Ireland***

During week 15 2008, the influenza/ILI GP consultation rate decreased in Northern Ireland from 60.2 per 100,000 population in week 14 2008 to 44.6 per 100,000 population in week 15 2008. Two influenza A and five influenza B positive specimens were detected during week 15 2008. <http://www.cdscni.org.uk>

#### ***Influenza Activity in England, Scotland & Wales***

During week 15 2008, influenza activity decreased in England and remained at approximately the same level in Scotland and Wales. Activity is still at baseline levels in England, Scotland and Wales. Of the samples referred to the Centre for Infections' Respiratory Virus Unit (RVU) during week 15 2008, one was positive for influenza A (H1), one for influenza A (H3) and three for influenza B. Of the influenza viruses characterised this season, there have been 321 A/Solomon Island/3/2006 (H1 and H1N1) like viruses, nine A/Wisconsin/67/05 (H3N2) like viruses and 123 B/Florida/4/2006-like viruses.

<http://www.hpa.org.uk/infections/topics%5Faz/influenza/seasonal/flureports0708.htm>

#### ***Influenza Activity in Europe***

Influenza activity has returned to low levels for all countries in Europe. Widespread influenza activity was reported in the Netherlands, regional activity in Norway, local activity in Slovakia, sporadic activity in 17 countries and no activity in four countries. Influenza B accounted for 84% of the total positive specimens collected in week 14 2008, however the majority of virus detections since the start of the season have been influenza A (H1N1) viruses. Based on (sub)typing data of all influenza virus detections this season (N=15222; sentinel and non-sentinel data), 4979 (33%) were A (unsubtyped), 4632 (30%) were A (H1), 153 (1%) were A (H3) and 5458 (36%) were B. Based on the antigenic and/or genetic characterisation of 3521 influenza viruses, 60 were A/New Caledonia/20/99 (H1N1)-like, 2164 were A/Solomon Island/3/2006 (H1N1)-like, 20 were A/Wisconsin/67/2005 (H3N2)-like, 115 were A/Brisbane/10/2007 (H3N2)-like, 1147 were B/Florida/4/2006-like (B/Yamagata/16/88 lineage) and 15 were B/Malaysia/2506/2004-like (B/Victoria/2/87 lineage). <http://www.eiss.org/index.cgi>

#### ***Influenza Activity in Canada***

During week 14 2008, overall influenza activity in Canada increased from the previous week with the majority of provinces having reported localised or widespread activity in at least one of their surveillance regions this week. Widespread influenza activity was reported by two regions, localised influenza activity by 25 regions, 20 reported sporadic activity and six regions reported no activity. The ILI consultation rate was 19 per 1,000 patient visits, which is within the expected range for this week. In week 14 2008, the percentage of specimens that tested positive

for influenza increased slightly to 17.5% (827/4,726). Based on antigenic characterisation of 1022 viruses, 416 were A/Solomon Islands/3/2006 (H1N1)-like, 16 were A/Brisbane/59/2007 (H1N1)-like, five were A/Wisconsin/67/2005 (H3N2)-like, 130 were A/Brisbane/10/2007 (H3N2)-like, seven were B/Malaysia/2506/2004-like and 448 were B/Florida/4/2006-like. <http://www.phac-aspc.gc.ca/fluwatch/index-eng.php>

### ***Influenza Activity in the United States***

During week 14 2008, influenza activity continued to decrease in the United States. Six states reported widespread influenza activity; 11 states reported regional influenza activity; 23 states reported local influenza activity; and 10 states and the District of Columbia reported sporadic influenza activity. The proportion of outpatient visits for ILI and the proportion of outpatient visits for acute respiratory illness (ARI) were below national baseline levels. The proportion of deaths attributed to pneumonia and influenza has been above the epidemic threshold for 13 consecutive weeks. During week 14 2008, WHO and NREVSS laboratories reported 2,839 specimens tested for influenza viruses, 376 (13.2%) of which were positive: 13 A (H3), 166 A untyped, and 197 influenza B. Antigenic characterisation data indicate similarities and differences between a sample of circulating strains and the 2007/2008 vaccine strains as determined by laboratory studies. Clinical vaccine effectiveness cannot be accurately predicted using these data, and in previous years, influenza vaccination has been shown to provide measurable protection against influenza illness and influenza-related complications, even when vaccine strains are antigenically distinct from circulating strains. <http://www.cdc.gov/flu/weekly/fluactivity.htm>

### ***Influenza Activity Worldwide***

During week 14 2008, sporadic influenza activity was reported in China (46 A H1, 145 A H3 & 5 A untyped), Mongolia and Sri-Lanka (1 A untyped & 1 B). No influenza activity was reported in Cameroon and South Africa. <http://gamapserver.who.int/GlobalAtlas/home.asp>

### ***Avian Influenza***

As of April 17<sup>th</sup> 2008, 381 confirmed human cases and 240 (63.0%) deaths from avian influenza A (H5N1) have been reported to the WHO from Azerbaijan, Cambodia, China, Djibouti, Egypt, Indonesia, Iraq, Lao Peoples Democratic Republic, Myanmar, Nigeria, Pakistan, Thailand, Turkey and Viet Nam.

WHO [http://www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/)  
HPSC <http://www.ndsc.ie/hpsc/A-Z/Respiratory/Influenza/AvianInfluenza/>  
ECDC <http://www.ecdc.eu.int/>  
HPA [http://www.hpa.org.uk/infections/topics\\_az/influenza/avian/default.htm](http://www.hpa.org.uk/infections/topics_az/influenza/avian/default.htm)

### ***Northern Hemisphere Influenza Vaccine for the 2007/2008 Season***

The members of the WHO Collaborating Centres on Influenza have recommended that influenza vaccines for the 2007/2008 influenza season in the Northern Hemisphere contain the following strains:

- an A/Solomon Island/3/2006 (H1N1)-like virus
- an A/Wisconsin/67/2005 (H3N2)-like virus<sup>a</sup>
- a B/Malaysia/2506/2004-like virus

Candidate vaccine viruses include:

- <sup>a</sup>A/Wisconsin/67/2005 (H3N2) and A/Hiroshima/52/2005

<http://www.who.int/csr/disease/influenza/recommendations2007north/en/print.html>

### ***Northern Hemisphere Influenza Vaccine for the 2008/2009 Season***

The members of the WHO Collaborating Centres on Influenza have recommended that influenza vaccines for the 2008/2009 influenza season in the Northern Hemisphere contain the following strains:

- an A/Brisbane/59/2007 (H1N1)-like virus;
- an A/Brisbane/10/2007 (H3N2)-like virus;\*
- a B/Florida/4/2006-like virus.#

\* A/Brisbane/10/2007 is a current southern hemisphere vaccine virus.

# B/Florida/4/2006 and B/Brisbane/3/2007 (a B/Florida/4/2006-like virus) are current southern hemisphere vaccine viruses. [http://www.who.int/csr/disease/influenza/recommendations2008\\_9north/en/index.html](http://www.who.int/csr/disease/influenza/recommendations2008_9north/en/index.html)



Further information on influenza can be found on the [HPSC website](#)

### **Acknowledgements**

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**This report was produced by Dr. Lisa Domegan and Dr. Joan O'Donnell, HPSC**