

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 10 2008 (3rd – 9th March 2008)

Summary

During week 10 2008, GP consultation rates for influenza-like illness (ILI) decreased and remain at low levels. Five influenza B positive specimens were detected by the National Virus Reference Laboratory (NVRL) during week 10 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 27 ILI cases during week 10 2008, corresponding to an ILI consultation rate of 15.0 per 100,000 population, a decrease on the previous rate of 19.9 per 100,000 in week 9 2008 (figure 1). Forty-seven (90.4%) sentinel practices reported during week 10 2008.

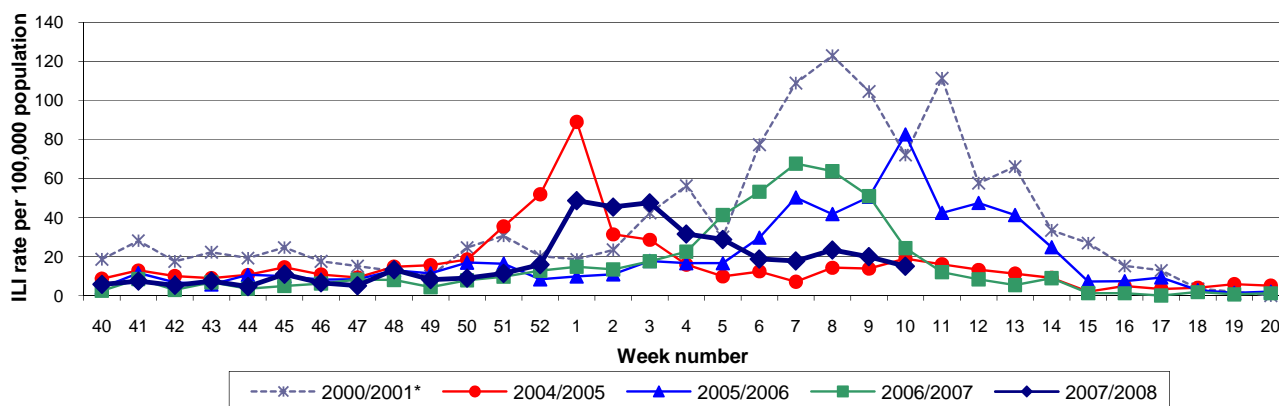


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2004/2005, 2005/2006, 2006/2007 & 2007/2008 influenza seasons *Highest recorded levels of ILI activity since initiation of sentinel surveillance

Results (continued)

During week 10 2008, there was a slight increase in ILI rates in 5-14 year olds, whilst ILI rates in all other age groups decreased. No ILI cases were reported in the 0-4 year age group, one case was reported in the 5-14 year age group (4.2 per 100,000 population), 23 cases in the 15-64 year age group (18.6 per 100,000 population) and three cases in those aged 65 years or older (15.0 per 100,000 population) during week 10 2008, as shown in figure 2.

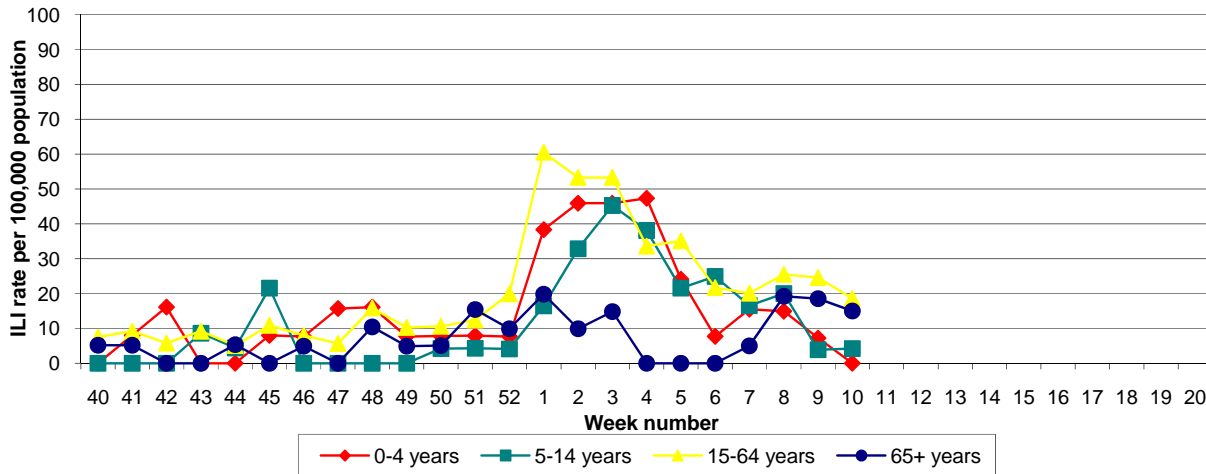


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2007/2008 influenza season
*Please note the denominator used in the age specific consultation rate is from the 2006 census data; this assumes that the age distribution of the sentinel general practices is similar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

Oseltamivir Resistance in Ireland

Preliminary results from the National Virus Reference Laboratory (NVRL) on antiviral drug susceptibility among seasonal influenza viruses circulating in Ireland has 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 January 2008. To date, five of 46 specimens (10.9%) tested by the NVRL have shown resistance to oseltamivir. The NVRL is currently arranging for further Irish samples to be tested. 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

Virological Data from the NVRL

The NVRL tested eight specimens taken by sentinel GPs during week 10 2008, five of which were positive for influenza B. The NVRL also tested 46 non-sentinel specimens taken during week 10 2008, mainly from hospitalised paediatric cases, all of which were negative for influenza virus.

To date this season, 131 (7.1%) specimens have tested positive for influenza from sentinel and non-sentinel sources (n=1846): 13 A (unsubtyped), 73 A (H1), 1 A (H3) and 44 B viruses. Of the 87 influenza A positive specimens detected this season, influenza A (H1) accounts for 98.6% of subtyped (n=74) specimens. To date this season, the NVRL have completed genetic strain characterisation on 15 influenza A (H1) subtypes, all 15 were A/Solomon Island/3/2006 (H1)-like viruses. A/Solomon Island/3/2006-like virus is the H1N1 strain included in the 2007/2008 influenza vaccine.

Two non-sentinel specimens¹ were positive for respiratory syncytial virus (RSV) during week 10 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: 10 influenza A, 8 influenza B, 450 RSV, 9 Adenovirus, 2 parainfluenza virus (PIV) type-1, 13 PIV-2 and 11 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 10 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
10 2008	Sentinel	8	5	62.5	0	5	-	-
	Non-Sentinel	46	0	0.0	0	0	2	4.3
	Total	54	5	9.3	0	5	2	3.7
Season to date	Sentinel	270	113	41.9	77	36	-	-
	Non-Sentinel	1576	18	1.1	10	8	450	28.6
	Total	1846	131	7.1	87	44	450	24.4

Table 2: Total number of sentinel and non-sentinel influenza A and B positive specimens by HSE-Area, reported by the NVRL for week 10 2008 and the 2007/2008 season to date

	Week 10 2008			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-E	0	2	2	19	18	37
HSE-M	0	0	0	8	1	9
HSE-MW	0	1	1	7	2	9
HSE-NE	0	1	1	12	10	22
HSE-NW	0	1	1	2	2	4
HSE-SE	0	0	0	13	6	19
HSE-S	0	0	0	17	3	20
HSE-W	0	0	0	9	2	11
Total	0	5	5	87	44	131

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 10 2008 and the 2007/2008 season to date

	Week 10 2008			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
0-4 years	0	0	0	6	3	9
5-14 years	0	0	0	8	0	8
15-64 years	0	5	5	71	39	110
65 years and older	0	0	0	1	2	3
Age group unknown	0	0	0	1	0	1
Total	0	5	5	87	44	131

¹ 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.

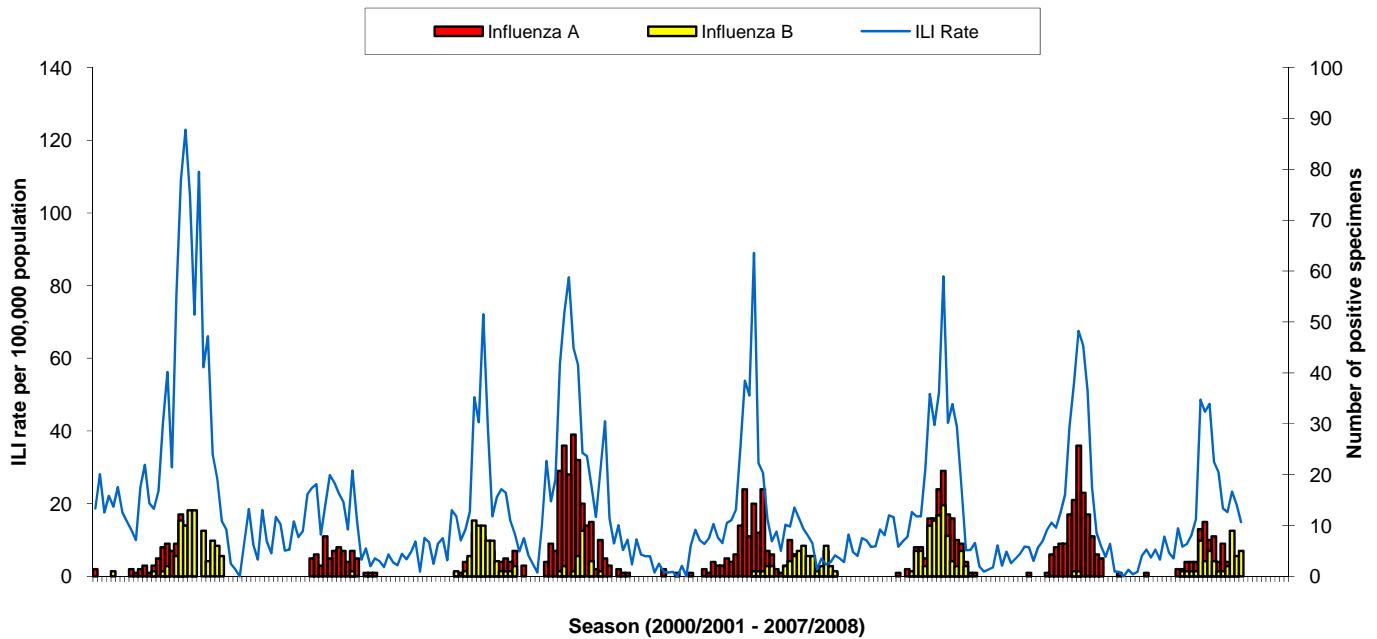


Figure 3: GP ILI consultation rate per 100,000 population and the number of positive influenza specimens detected by the NVRL by week and season, 2000/2001 - 2007/2008

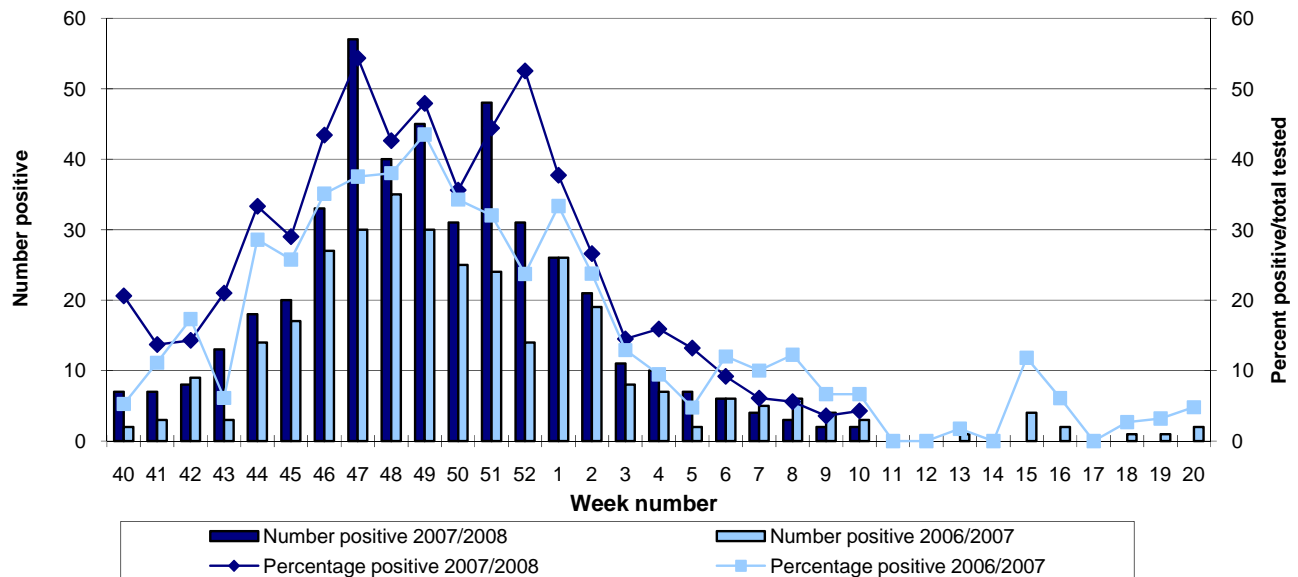


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2006/2007 and 2007/2008 influenza seasons

Weekly Influenza Notifications

Four influenza A and seven influenza B cases were notified to HPSC during week 10 2008: six from HSE-E, one from HSE-M, one from HSE-NE and three from HSE-S. One influenza A and four influenza B cases were notified to HPSC during week 11 2008: four from HSE-E and one from HSE-M. 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.

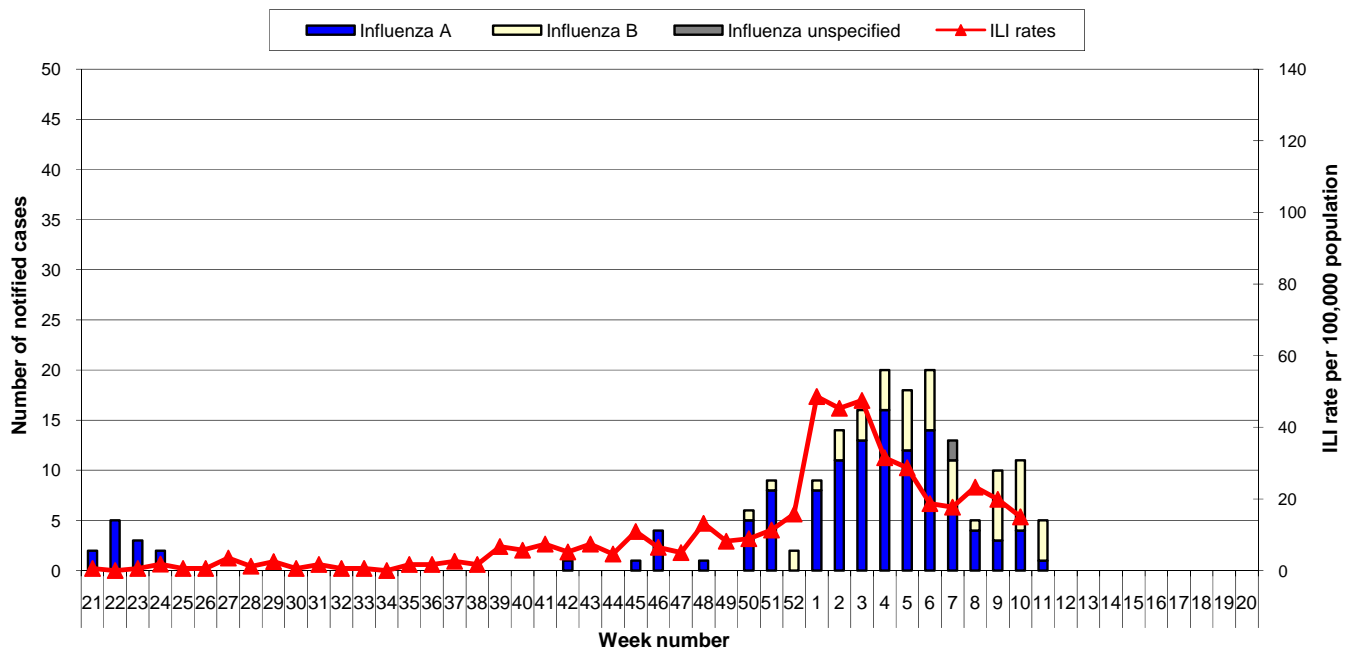


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2007 and the 2007/2008 influenza season
 *Notification data are provisional and were extracted from [CIDR](#) on the 13/03/2008 at 12:15

Mortality Data

One death attributed to influenza has been registered with the General Register Office this season to date. This death was an adult over 65 years of age (from HSE-NW) who died in December (week 51) 2007. Influenza was the primary cause of death in this case.

Outbreak Reports

No ILI/influenza outbreaks have been reported to HPSC to date this season.

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.

There were no increases in hospital respiratory admissions reported from sentinel hospitals and no significant increases in absenteeism reported from sentinel schools during weeks 9 or 10 2008.

During week 9 2008, no influenza activity was reported in HSE-S and HSE-W and sporadic influenza 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.

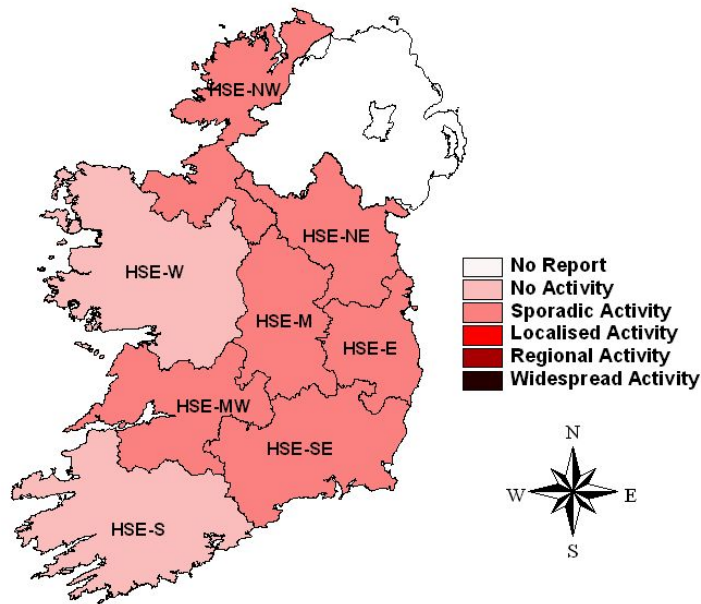


Figure 6: Map of influenza activity by HSE-Area for week 9 2008

Influenza Activity in Northern Ireland

During week 10 2008, 16 cases of clinical influenza and 70 ILI cases were reported in Northern Ireland, corresponding to a combined rate of 63.4 per 100,000 population, a decrease from the updated rate of 69.8 per 100,000 for week 9 2008. Fifty sentinel and non-sentinel specimens were tested during week 10 2008, two were positive for influenza A and 11 for influenza B. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

During week 10 2008, influenza activity decreased in England and Wales and remained at approximately the same level in Scotland. Activity remains at baseline levels in England, Scotland and Wales. In England, the ILI episode incidence rate decreased from 15.7 per 100,000 persons in week 9 2008 to 11.0 per 100,000 in week 10 2008. In Scotland, GP consultation rates for ILI were at 12 per 100 000 in week 9 2008 and 11 per 100 000 in week 10 2008. In Wales, GP consultation rates for influenza decreased from 2.4 per 100,000 in week 9 2008 to 0.7 per 100,000 in week 10 2008. Of the samples referred to the Centre for Infection's Respiratory Virus Unit during week 9 2008, influenza B continues to account for the majority of detections although the numbers are low. Of the influenza viruses characterised this season, there have been 304 A/Solomon Island/3/2006 (H1 and H1N1) like viruses, five A/Wisconsin/67/05 (H3N2)-like viruses and 46 B/Florida/4/2006-like viruses.

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

Influenza Activity in Europe

During week 9 2008, influenza activity was declining or stable in most European countries. Eight countries reported widespread activity, one country reported regional activity, six countries local activity, 13 countries sporadic activity and one country reported no influenza activity during week 9 2008. The proportion of influenza B detections has steadily increased since week 1 2008 and accounted for 55% of the total number of positive specimens in week 9 2008. However, cumulatively the majority of the virus detections since the start of the season (N=12156), were influenza A (72%) of which about 97% were of the H1 subtype. Based on (sub)typing data of all influenza virus detections this season (N=12156; sentinel and non-sentinel data), 4709 (39%) were type A (unsubtyped), 3957 (33%) were A (H1), 112 (1%) were A (H3) and 3378 (28%) were B. Based on the antigenic and/or genetic characterisation of 2815 influenza viruses, 60 were A/New Caledonia/20/99 (H1N1)-like, 2053 were

A/Solomon Island/3/2006 (H1N1)-like, 11 were A/Wisconsin/67/2005 (H3N2)-like, 51 were A/Brisbane/10/2007 (H3N2)-like, 628 were B/Florida/4/2006-like (B/Yamagata/16/88 lineage) and 12 were B/Malaysia/2506/2004-like (B/Victoria/2/87 lineage). Despite the mismatch of the circulating influenza B viruses with the vaccine strain, it is expected that the 2007/2008 vaccine still provides valuable protection due to cross reactive antibodies induced by the vaccine. A number of recent A (H1N1) viruses are distinguishable from the vaccine virus in antigenic analyses. As these viruses show better antigenic match to A/Brisbane/59/2007, the WHO has recommended that an A/Brisbane/59/2007-like virus is included in the vaccine for the 2008/2009 season. As there is still significant antigenic similarity, the present vaccine is expected to provide protection against the current H1N1 viruses. <http://www.eiss.org/index.cgi>

Influenza Activity in Canada

During week 9 2008, overall influenza activity in Canada increased slightly compared to previous weeks. Widespread influenza activity was reported by five regions and localised influenza activity by 17 regions. Nine regions reported no activity and 25 reported sporadic activity. During week 9 2008, the ILI consultation rate rose to 21 per 1,000 patient visits, which is below the expected range for this week. The percentage of specimens that tested positive for influenza during week 9 2008 was 17.0% (852/5,033). The proportion of influenza B detections in Canada continued to increase, accounting for 38.0% of detections in week 9; however, the majority of influenza detections were still influenza A viruses. Based on antigenic characterisation of 555 viruses, 309 were A/Solomon Islands/3/2006 (H1N1)-like, five were A/Wisconsin/67/2005 (H3N2)-like, 38 were A/Brisbane/10/2007 (H3N2)-like, three were B/Malaysia/2506/2004-like and 200 were B/Florida/4/2006-like. <http://www.phac-aspc.gc.ca/fluwatch/index-eng.php>

Influenza Activity in the United States

During week 9 2008, influenza activity continued to decrease in the United States. Forty-seven states reported widespread influenza activity; three states reported regional influenza activity; and the District of Columbia reported local influenza activity. The proportion of outpatient visits for ILI and acute respiratory illness (ARI) was above national baseline levels. During week 9 2008, WHO and NREVSS laboratories reported 8,814 specimens tested for influenza viruses, 2,401 (27.2%) of which were positive: 1,280 A (unsubtyped), 54 A (H1), 327 A (H3), and 740 influenza B viruses. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold for the eighth consecutive week. <http://www.cdc.gov/flu/weekly/fluactivity.htm>

Influenza Activity Worldwide

During week 9 2008, widespread influenza activity was reported in Tunisia (7 A H1) and localised activity was reported in Chile (1 A unsubtyped), China (8 A unsubtyped, 50 A H1, 47 A H3 & 166 B), Egypt (2 A unsubtyped), Madagascar (6 A H1) and Mongolia. No influenza activity was reported in Cameroon and Sri-Lanka. <http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of March 11th 2008, 372 confirmed human cases and 235 (63.2%) 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.

The Ministry of Health and Population of Egypt has announced a new human case of avian influenza A (H5N1) virus infection. The case is an 8-year-old male from Etsa District, Fayum Governorate. He was hospitalised with symptoms on March 3rd 2008. He is receiving treatment and is in a stable condition. Investigations into the source of his infection indicate a history of contact with sick and dead poultry. Of the 47 cases confirmed to date in Egypt, 20 have been fatal.

WHO 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

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^a
- a B/Malaysia/2506/2004-like virus

Candidate vaccine viruses include:

- ^aA/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

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

Acknowledgements

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