

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 4 2008 (21st – 27th January 2008)

Summary

During week 4 2008, GP consultation rates for influenza-like illness (ILI) decreased. Two influenza A positive specimens were detected by the NVRL during week 4 2008. Influenza A is the predominant influenza type circulating this season and the majority of subtyped specimens are A (H1). To date this season, influenza activity has been mild compared to previous seasons.

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 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 52 ILI cases during week 4 2008, corresponding to ILI consultation rates of 34.5 per 100,000 population, a decrease from the updated rate of 49.2 per 100,000 in week 3 2008 (figure 1). Forty-three (86.0%) sentinel practices reported during week 4 2008.

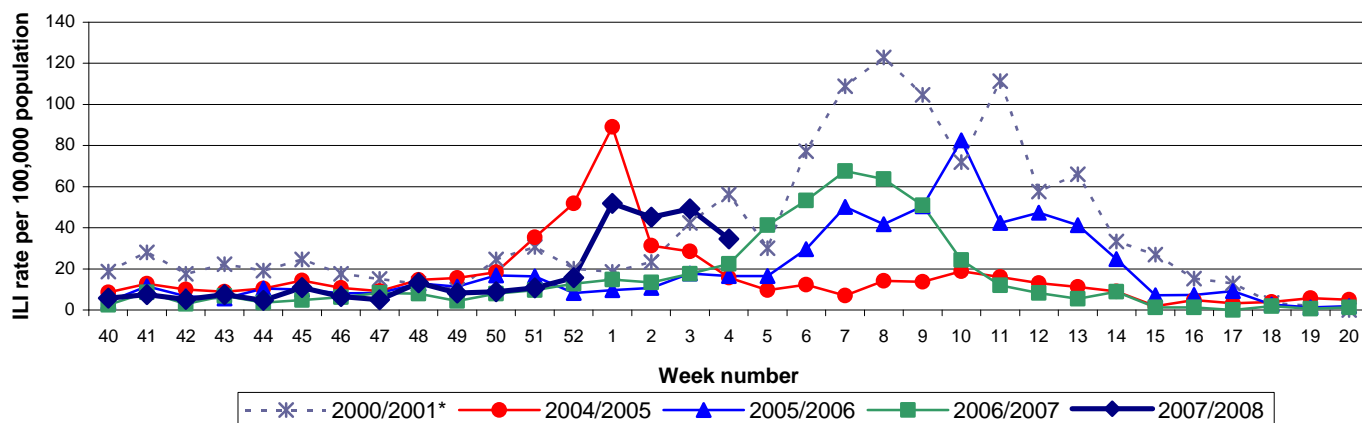


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2004/2005, 2005/2006, 2006/2007 & 2007/2008 influenza seasons *Highest recorded levels of ILI activity since initiation of sentinel surveillance

Results (continued)

During week 4 2008, ILI rates increased in the 0-4 year age group and decreased in all other age groups. For the last four weeks, ILI rates in the 0-4 year age group have continued to increase. Six ILI cases were reported in the 0-4 year age group (55.9 per 100,000 population), nine cases in the 5-14 year age group (45.1 per 100,000 population), 37 cases in the 15-64 year age group (35.8 per 100,000 population) and no cases in those aged 65 year or older during week 4 2008, as shown in figure 2.

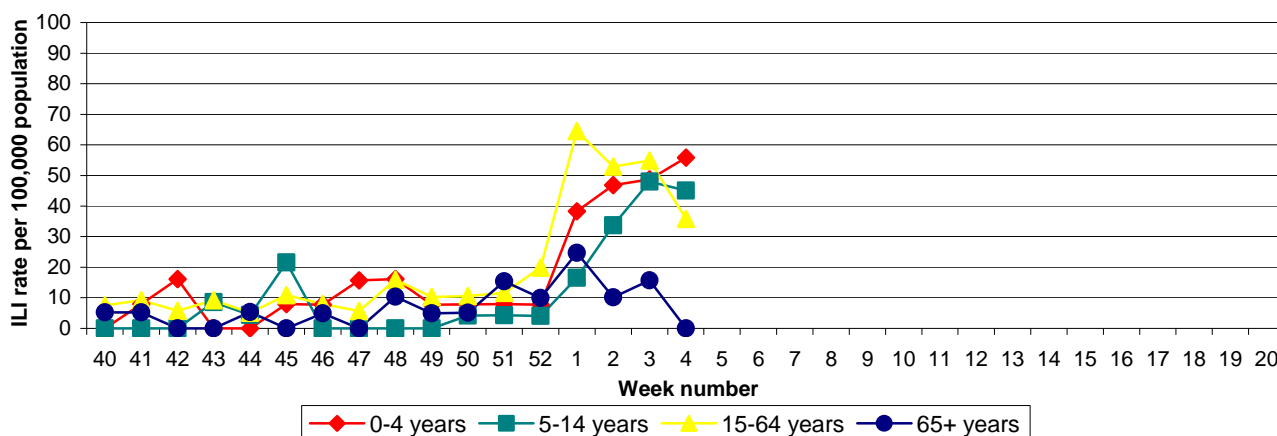


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2007/2008 influenza season
*Please note the denominator used in the age specific consultation rate is from the 2006 census data; this assumes that the age distribution of the sentinel general practices is similar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

Virological Data from the NVRL

The NVRL tested two specimens taken by sentinel GPs during week 4 2008, one (50.0%) of which was positive for influenza: 1 A (unsubtyped). The NVRL also tested 60 non-sentinel specimens taken during week 4 2008, mainly from hospitalised paediatric cases, one (1.7%) of which was positive for influenza A. To date this season, 71 (5.0%) specimens have tested positive for influenza from sentinel and non-sentinel sources (n=1414): 14 A (unsubtyped), 38 A (H1), 1 A (H3) and 18 B viruses. Influenza A is the dominant influenza type circulating this season, accounting for 74.6% of positive specimens. Of the 53 influenza A positive specimens detected this season, influenza A (H1) accounts for 97.4% of subtyped (n=39) specimens.

Nine non-sentinel specimens were positive for respiratory syncytial virus (RSV) during week 4 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: 7 influenza A, 2 influenza B, 425 RSV, 5 Adenovirus, 2 parainfluenza virus (PIV) type-1, 1 PIV-2 and 9 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 4 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
4 2008	Sentinel	2	1	50.0	1	0	-	-
	Non-Sentinel	60	1	1.7	1	0	9	15.0
	Total	62	2	3.2%	2	0	9	14.5
Season to date	Sentinel	181	62	34.3	46	16	-	-
	Non-Sentinel	1233	9	0.7	7	2	425	34.5
	Total	1414	71	5.0	53	18	425	30.1

*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

Table 2: Total number of sentinel and non-sentinel* influenza A and B positive specimens by HSE-Area, reported by the NVRL for week 4 2008 and the 2007/2008 season to date

	Week 4 2008			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-E	1	0	1	13	4	17
HSE-M	0	0	0	6	0	6
HSE-MW	1	0	1	4	1	5
HSE-NE	0	0	0	8	7	15
HSE-NW	0	0	0	1	1	2
HSE-SE	0	0	0	7	4	11
HSE-S	0	0	0	10	0	10
HSE-W	0	0	0	4	1	4
Total	2	0	2	53	18	71

* 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

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 4 2008 and the 2007/2008 season to date

	Week 4 2008			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
0-4 years	0	0	0	2	1	3
5-14 years	0	0	0	4	0	4
15-64 years	2	0	2	46	15	61
65 years and older	0	0	0	0	2	2
Age group unknown	0	0	0	1	0	0
Total	2	0	2	53	18	71

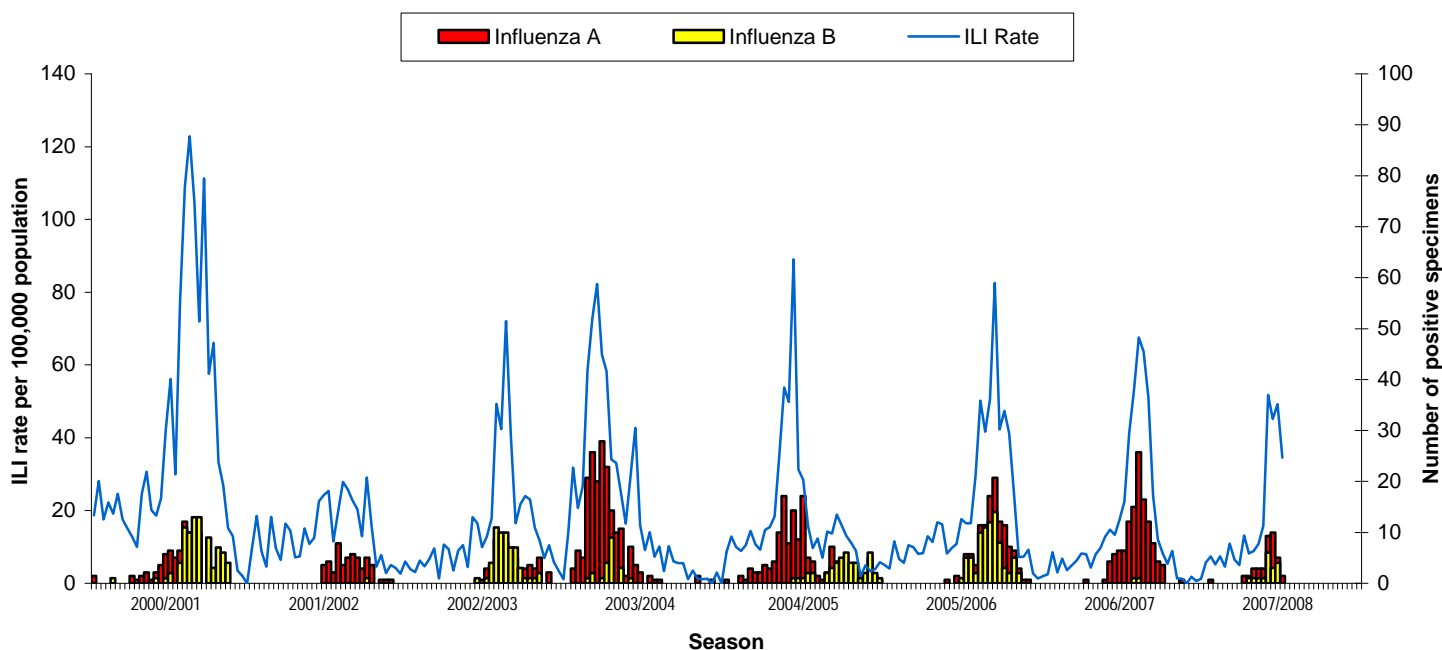


Figure 3: GP ILI consultation rate per 100,000 population and the number of positive influenza specimens detected by the NVRL by week and season, 2000/2001 - 2007/2008

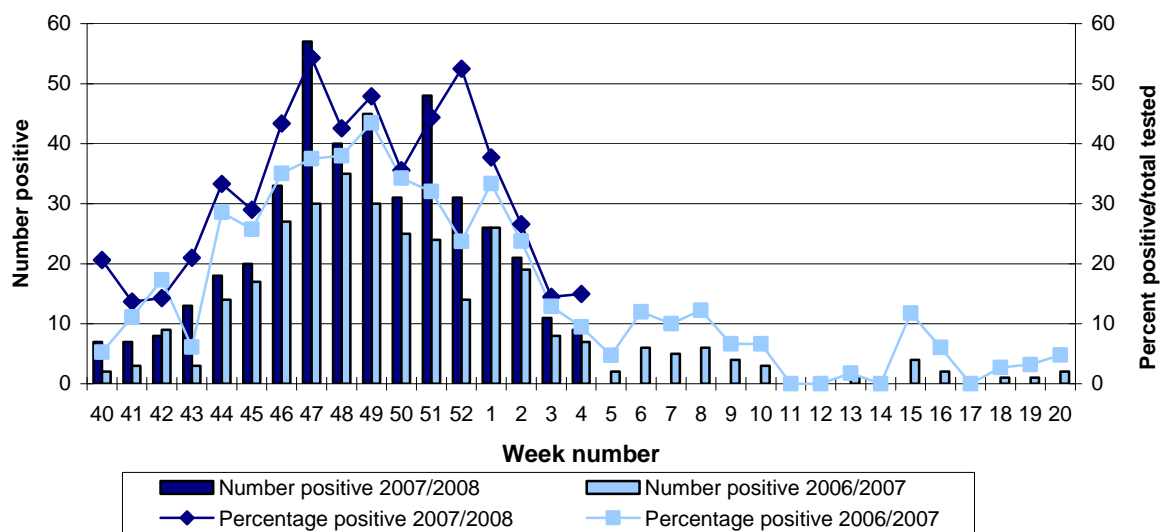


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2006/2007 and 2007/2008 influenza seasons

Weekly Influenza Notifications

Nine influenza A and three influenza B cases were notified to HPSC during week 4 2008: three from HSE-E, two from HSE-M, two from HSE-NE, three from HSE-SE and two from HSE-S. Eight influenza A and four influenza B cases were notified to HPSC during week 5 2008: one from HSE-E, two from HSE-M, six from HSE-NE, one from HSE-NW and two from HSE-SE. 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.

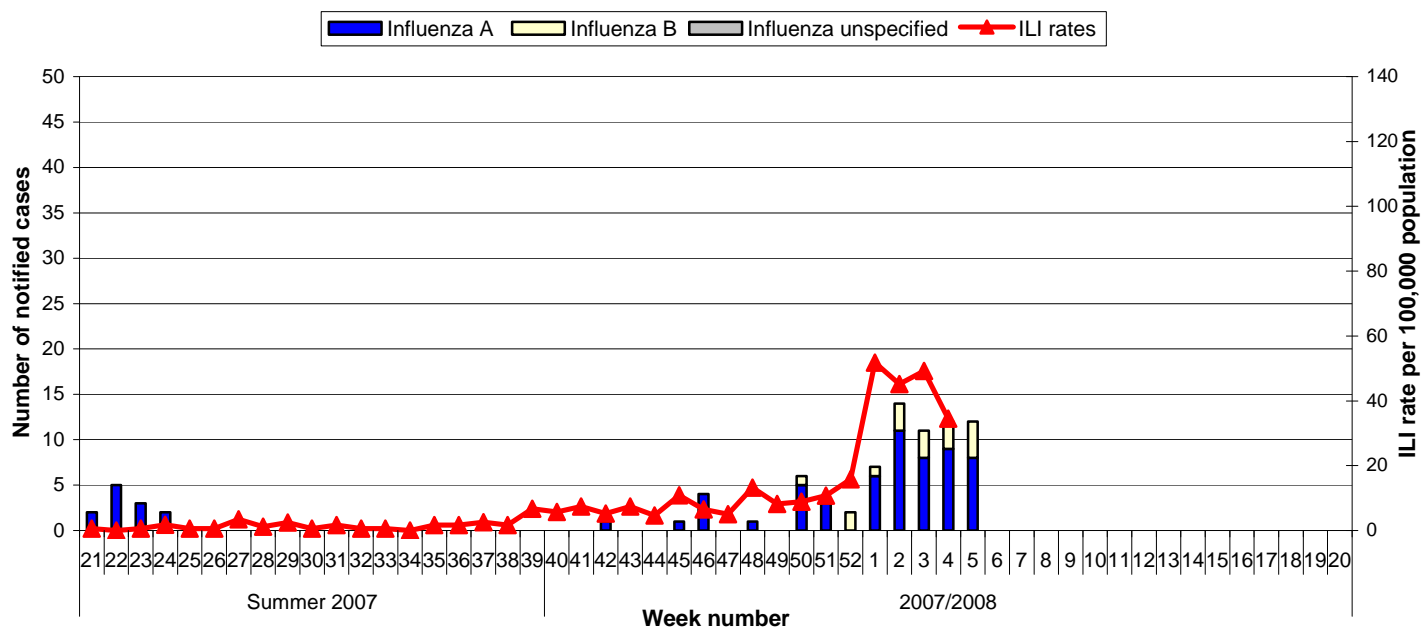


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2007 and the 2007/2008 influenza season
 *Notification data are provisional and were extracted from [CIDR](#) on the 31/01/2008 at 10:37

Mortality Data

No influenza associated deaths were registered with the GRO and reported to HPSC to date this season.

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.

Hospital respiratory admissions were at elevated levels between weeks 52 2007 and 3 2008 in a sentinel hospital in HSE-M, although levels started decreasing during weeks 2 and 3 2008. Increased absenteeism was reported in three sentinel primary schools in HSE-M, HSE-MW and HSE-NE and in three sentinel secondary schools in HSE-E and HSE-MW during week 3 2008. Three sentinel primary schools in HSE-NW reported increased absenteeism during week 4 2008, with one school reporting increased absenteeism due to colds and ILI.

During week 3 2008, sporadic influenza activity was reported in all 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.

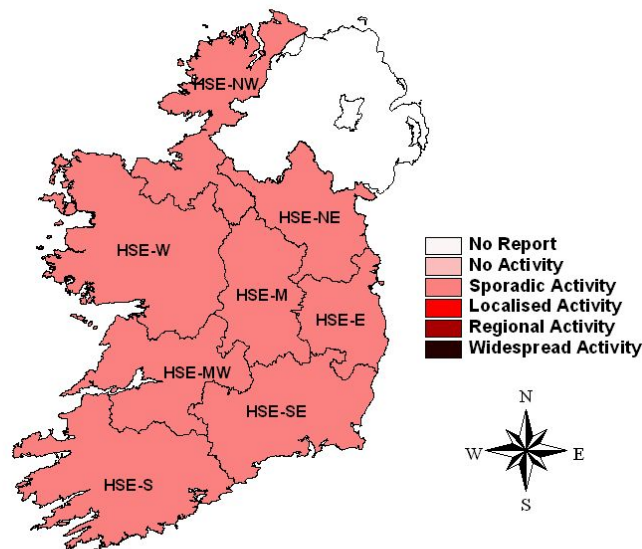


Figure 6: Map of influenza activity by HSE area for week 3 2008

Influenza Activity in Northern Ireland

During week 4 2008, twelve cases of clinical influenza and 77 ILI cases were reported in Northern Ireland, corresponding to a combined rate of 64.4 per 100,000 population, a slight increase from the updated rate of 61.1 per 100,000 for week 3 2008. Forty-five sentinel and non-sentinel specimens were tested during week 4 2008, four were positive: 2 A and 2 B. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

During week 4 2008, influenza activity decreased and is at baseline level in Scotland, England and Wales. In England, the ILI episode incidence rates decreased from 18.8 per 100,000 persons in week 3 2008 to 15.1 per 100,000 in week 4 2008. In Scotland, GP consultation rates for ILI decreased from 36 per 100,000 in week 3 2008 to 27 per 100,000 in week 4 2008. In Wales, GP consultation rates for influenza declined from 7.8 per 100,000 in week 3 2008 to 5.8 per 100,000 in week 4 2008. Of the samples referred to the Centre for Infection's Respiratory Virus Unit during week 4 2008, 10 tested positive for influenza A (H1) and one for influenza B. Of the influenza viruses characterised to date this season, there have been 175 A/Solomon Island/3/2006 (H1) like-viruses, 42 A/Solomon Island/3/2006 (H1N1) like viruses, two A/Wisconsin/67/05 (H3N2) like viruses and 11 B/Florida/4/2006-like viruses.

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

Influenza Activity in Europe

During week 3 2008, medium or high influenza activity was reported in 16 European countries (Austria, Belgium, Bulgaria, France, Hungary, Ireland, Italy, Lithuania, Luxembourg, Northern Ireland, Poland, Portugal, Romania, Slovenia, Spain and Switzerland). A further increase in ILI consultations and/or acute respiratory infection (ARI) was reported by several countries and was most obvious for Hungary, Luxembourg, Portugal, Slovenia and Switzerland during week 3 2008. Eleven countries reported widespread activity, three countries regional activity, five countries local activity, seven countries sporadic activity and one country reported no influenza activity during week 3 2008. The total number of respiratory specimens collected by sentinel physicians in week 3 2008 was 1529, of which 504 (33%) were influenza virus positive: 210 (42%) A (unsubtyped), 205 (41%) A (H1) [of which 98 were A (H1N1)], 1 A (H3N2) and 88 (17%) B. In addition, 345 influenza virus detections were reported from non-sentinel sources, of which 251 (73%) were A (unsubtyped), 43 (12%) A (H1) [of which 15 were A (H1N1)] and 51 (15%) B. Based on (sub)typing data of all influenza virus detections to date this season (N=3447; sentinel and non-sentinel data), 1567 (45%) were A (unsubtyped), 1241 (36%) were A (H1), 32 (1%) were A (H3) and 607

(18%) were B. While the majority of countries in Europe reported influenza H1 as dominant type, Sweden and Germany reported a relatively high proportion of influenza B compared to other countries. Based on the antigenic and/or genetic characterisation of 788 influenza viruses this season, 57 were A/New Caledonia/20/99 (H1N1)-like, 593 were A/Solomon Island/3/2006 (H1N1)-like, two were A/Wisconsin/67/2005 (H3N2)-like, nine were A/Brisbane/10/2007 (H3N2)-like, 116 were B/Florida/4/2006-like (B/Yamagata/16/88 lineage) and 11 were B/Malaysia/2506/2004-like (B/Victoria/2/87 lineage). Influenza A (H1) is the dominant virus circulating in Europe this season and there is a good match between this virus and the corresponding vaccine strain A/Solomon Island/3/2006 which is included in the 2007/2008 vaccine. <http://www.eiss.org/index.cgi>

Influenza Activity in Canada

During week 3 2008, influenza activity levels in Canada still remained fairly low overall; however, some influenza indicators (laboratory detections, ILI consultations and activity levels) increased slightly from the previous week. In week 3 2008, one region reported widespread activity, six reported localised influenza activity and the rest reported either no activity (n=23) or sporadic activity (n=25). During week 3 2008, the ILI consultation rate increased to 26 per 1,000 patient visits, which is within the expected range for this week. The number of specimens that tested positive for influenza was 8.2% (297/3640) in week 3 2008. Of the influenza detections to date, 79% were influenza A and 21% were influenza B. Based on antigenic characterisation of 205 viruses, 140 were A/Solomon Islands/3/2006 (H1N1)-like, five were A/Wisconsin/67/2005 (H3N2)-like, nine were A/Brisbane/10/2007 (H3N2)-like, three were B/Malaysia/2506/2004-like and 48 were B/Florida/4/2006-like. <http://www.phac-aspc.gc.ca/fluwatch/index.html>

Influenza Activity in the United States

During week 3 2008, influenza activity continued to increase in the United States. The proportion of outpatient visits for ILI was above national baseline levels, and the proportion of outpatient visits for ARI was below national baseline levels. Six states reported widespread influenza activity; 17 states reported regional influenza activity; 17 states and the District of Columbia reported localised influenza activity; 10 states and Puerto Rico reported sporadic influenza activity. During week 3 2008, WHO and NREVSS laboratories reported 2,971 specimens tested for influenza viruses, 329 (11.1%) of which were positive, including 38 A (H1), 38 A (H3), 190 A (unsubtyped) and 63 influenza B viruses. The proportion of deaths attributed to pneumonia and influenza was slightly above the epidemic threshold. It is too early in the influenza season to determine which influenza viruses will predominate or how well the vaccine and circulating strains will match.

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

Influenza Activity Worldwide

During week 3 2008, regional influenza activity was reported in Japan (13 A H1 and 1 B), sporadic influenza activity was reported in China (2 A unsubtyped, 12 A H1, 42 A H3 and 13 B), Israel (5 A unsubtyped and 4 B), Madagascar (12 A H1) and Mongolia and no influenza activity was reported in Sri-Lanka. Five influenza A (H1) virus detections were reported from Iran during week 3 2008. <http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of January 30th 2008, 357 confirmed human cases and 224 (62.7%) 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 of Indonesia has announced the death of a previously confirmed case of H5N1 infection. The 32-year-old male from Tangerang Municipality, Banten Province died on January 29th 2008. Of the 124 cases confirmed to date in Indonesia, 101 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 Islands/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>

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