

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 3 2008 (14th – 20th January 2008)

Summary

During week 3 2008, GP consultation rates for influenza-like illness (ILI) increased slightly, with the highest increases reported in those aged 0-14 years. Four influenza positive specimens were detected by the NVRL during week 3 2008, the majority of which were influenza A. To date this season, influenza A is the predominant influenza type circulating and the majority of subtyped specimens are A (H1).

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 77 ILI cases during week 3 2008, corresponding to ILI consultation rates of 49.4 per 100,000 population, a slight increase from 46.0 per 100,000 in week 2 2008 (figure 1). Forty-two (84.0%) sentinel practices reported during week 3 2008.

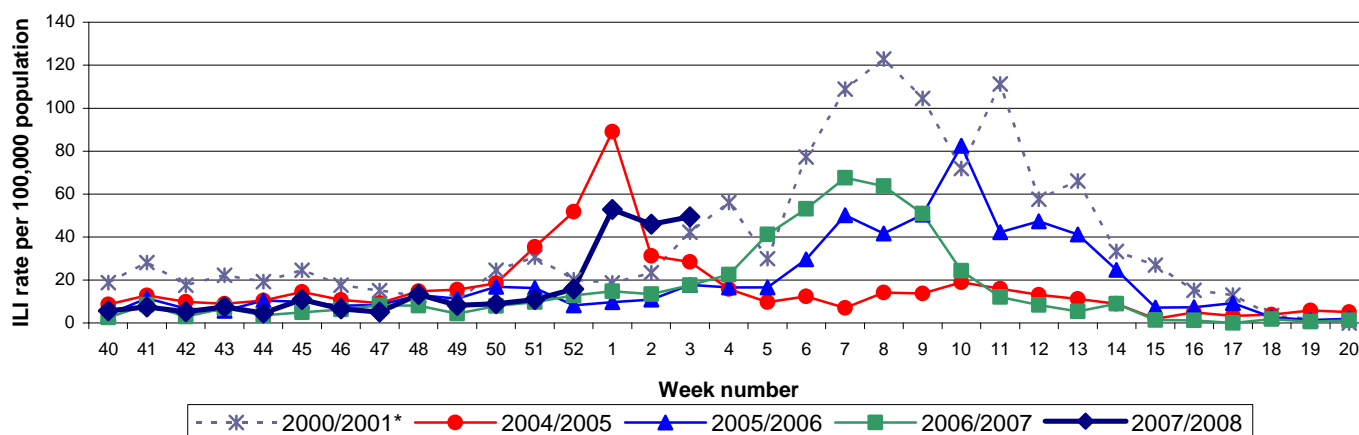


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2004/2005, 2005/2006, 2006/2007 & 2007/2008 influenza seasons *Highest recorded levels of ILI activity since initiation of sentinel surveillance

Results (continued)

During week 3 2008, ILI rates increased in all age groups, with the highest increases observed in those aged 0-14 years. For the last three weeks, ILI rates in 0-4 and 5-14 year olds have continued to increase. Six ILI cases were reported in the 0-4 year age group (54.0 per 100,000 population), ten cases in the 5-14 year age group (48.4 per 100,000 population), 59 cases in the 15-64 year age group (55.2 per 100,000 population) and two cases in those aged 65 year or older (11.6 per 1000,000 population) during week 3 2008, as shown in figure 2.

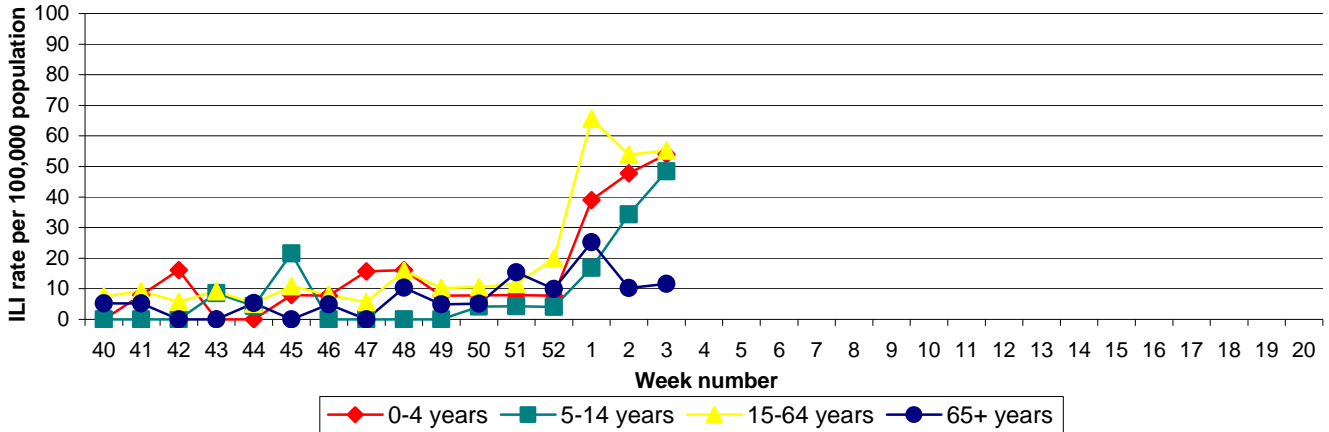


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2007/2008 influenza season
**Please note the denominator used in the age specific consultation rate is from the 2006 census data; this assumes that the age distribution of the sentinel general practices is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

NEWS: Recommendations on the use of antiviral drugs

The use of antiviral drugs for the prevention or treatment of influenza in at risk groups is now recommended, as per the National Institute of Clinical Excellence (NICE) guidelines, UK (2003). When ILI rates increase to levels observed during week 1 2008 and when influenza is known to be circulating in the community, it is recommended that antiviral drugs be used in at-risk groups. Further information on the use of antiviral neuraminidase inhibitors, oseltamivir and zanamivir for the treatment of influenza in at-risk groups and the NICE algorithm for prescribing oseltamivir for the prophylaxis of influenza are available on the HPSC website. <http://www.ndsc.ie/hpsc/>

Virological Data from the NVRL

The NVRL tested 14 specimens taken by sentinel GPs during week 3 2008, three (21.4%) of which were positive for influenza: 2 A (unsubtyped) and 1 B. The NVRL also tested 71 non-sentinel specimens taken during week 3 2008, mainly from hospitalised paediatric cases, one (1.4%) of which was positive for influenza A and none were positive for influenza B. To date this season, 58 (4.3%) specimens have tested positive for influenza from sentinel and non-sentinel sources (n=1340): 22 A (unsubtyped), 21 A (H1), 1 A (H3) and 14 B viruses. Influenza A is the dominant influenza type circulating this season, accounting for 75.9% of positive specimens. Of the 44 influenza A positive specimens detected this season, influenza A (H1) accounts for 95.5% of subtyped (n=22) specimens.

Eleven non-sentinel specimens were positive for respiratory syncytial virus (RSV) during week 3 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: 6 influenza A, 2 influenza B, 416 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 3 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
3 2008	Sentinel	14	3	21.4	2	1	-	-
	Non-Sentinel	71	1	1.4	1	0	11	15.5
	Total	85	4	4.7%	3	1	11	12.9
Season to date	Sentinel	171	50	29.2	38	12	-	-
	Non-Sentinel	1169	8	0.7	6	2	416	35.6
	Total	1340	58	4.3	44	14	416	31.0

*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 3 2008 and the 2007/2008 season to date

	Week 3 2008			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-E	1	0	1	12	4	16
HSE-M	0	0	0	4	0	4
HSE-MW	0	0	0	2	0	2
HSE-NE	0	0	0	7	4	11
HSE-NW	0	1	1	0	1	1
HSE-SE	0	0	0	6	4	10
HSE-S	2	0	2	11	0	11
HSE-W	0	0	0	2	1	3
Total	3	1	4	44	14	58

* 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 3 2008 and the 2007/2008 season to date

	Week 3 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	1	0	1	4	0	4
15-64 years	2	1	3	38	11	49
65 years and older	0	0	0	0	2	2
Age group unknown	0	0	0	0	0	0
Total	3	1	4	44	14	58

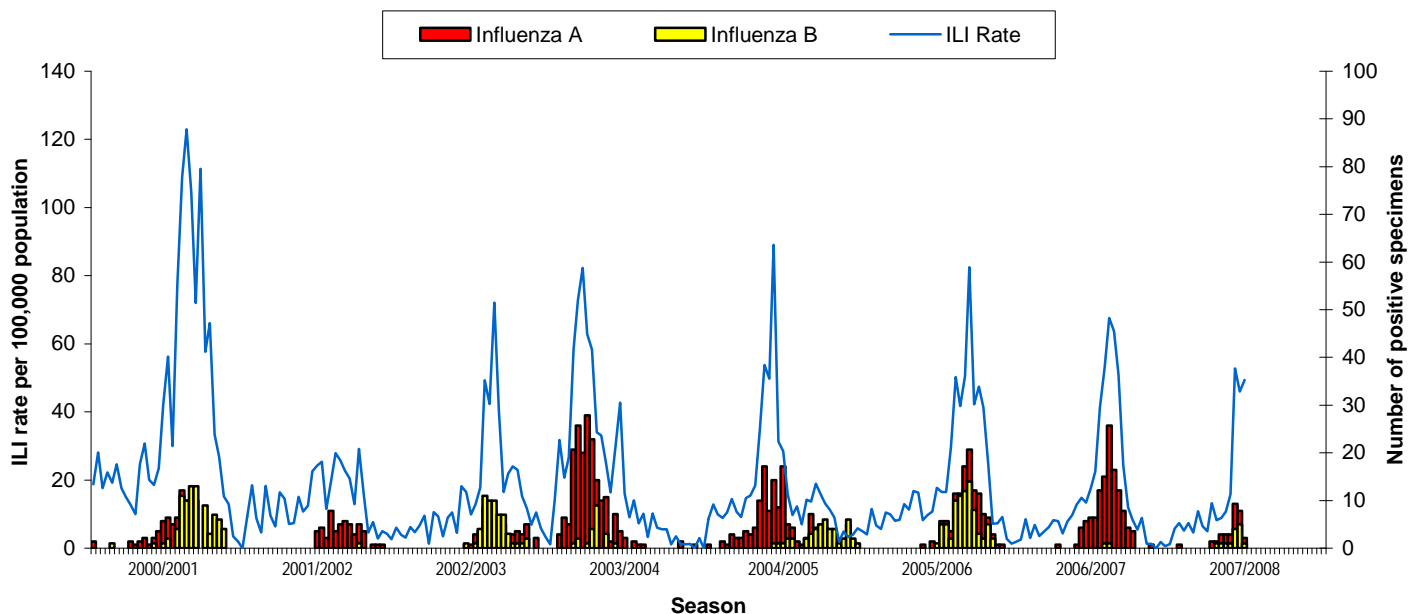


Figure 3: GP ILI consultation rate per 100,000 population and the number of positive influenza specimens detected by the NVRL by week and season, 2000/2001 - 2007/2008

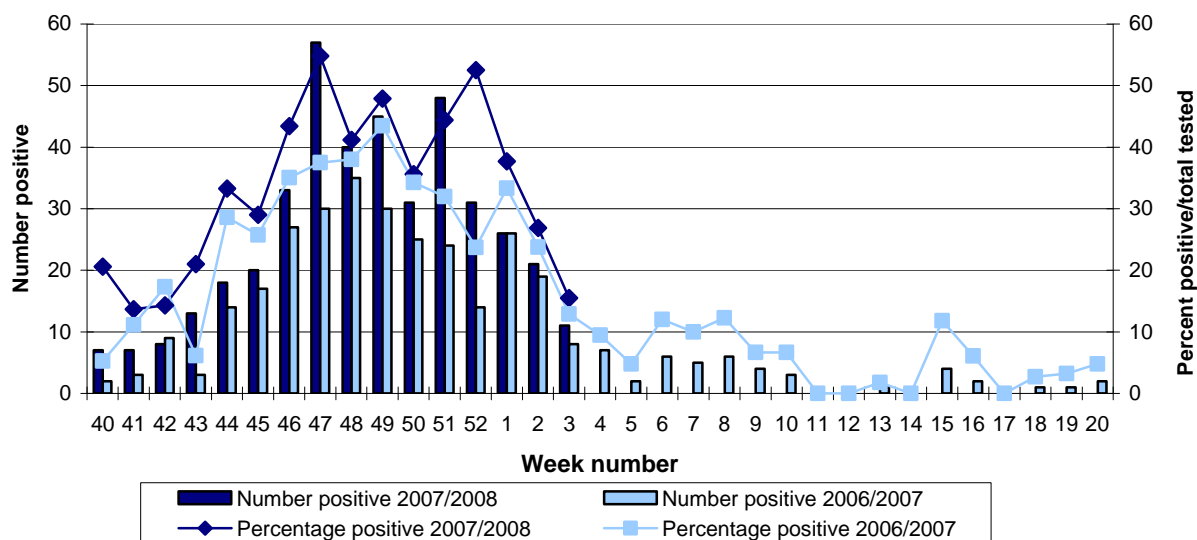


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2006/2007 and 2007/2008 influenza seasons

Weekly Influenza Notifications

Eight influenza A and three influenza B cases were notified to HPSC during week 3 2008: five from HSE-E, three from HSE-NE, one from HSE-SE and two from HSE-S. Seven influenza A and three influenza B cases were notified to HPSC during week 4 2008: two from HSE-E, two from HSE-M, two from HSE-NE, two from HSE-SE and two from HSE-S. 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.

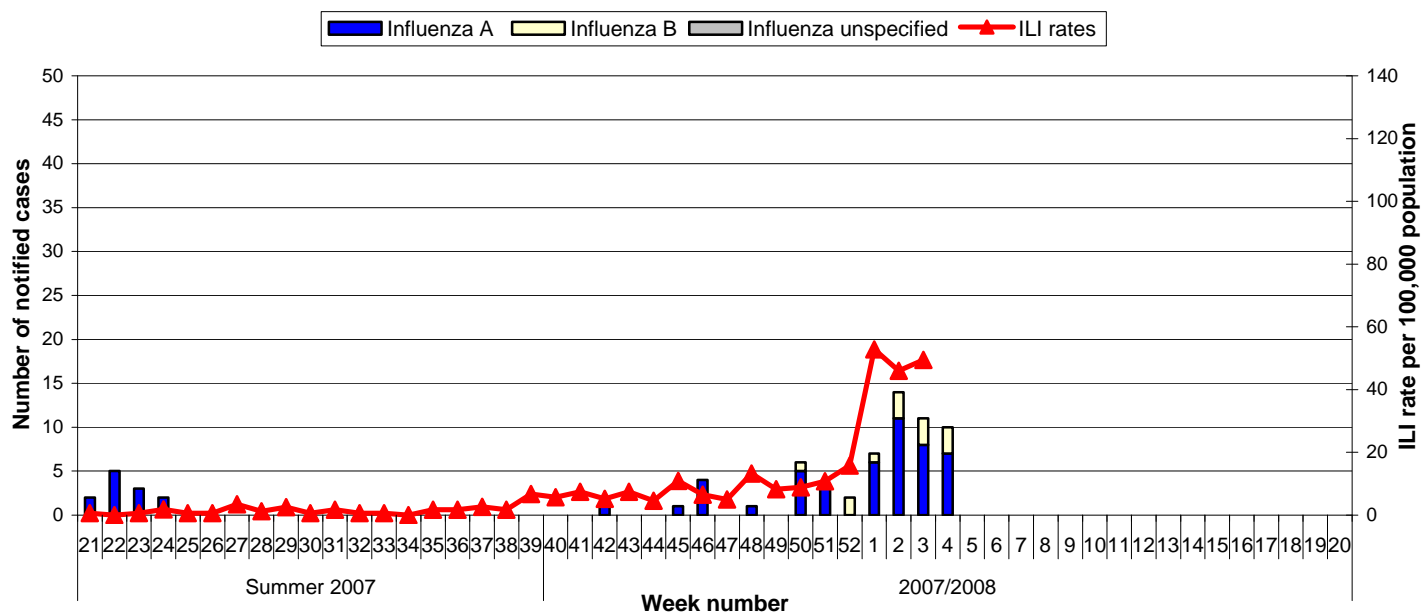


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2007 and the 2007/2008 influenza season
 *Notification data are provisional and were extracted from [CIDR](#) on the 24/01/2008 at 10:25

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 2 2008 in a sentinel hospital in HSE-M. Increases in hospital respiratory admissions were also reported in one sentinel hospital in HSE-E during week 1 2008. Increased absenteeism was reported in five sentinel secondary schools in HSE-E, HSE-M and HSE-MW and in three sentinel primary schools in HSE-E, HSE-MW and HSE-NW during week 2 2008. A sentinel secondary school in HSE-NW reported increased absenteeism associated with gastrointestinal illness, colds and ILI during week 3 2008.

During week 2 2008, localised influenza activity was reported in two HSE-Areas (HSE-SE and -S) and sporadic influenza activity was reported in the remaining six 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.

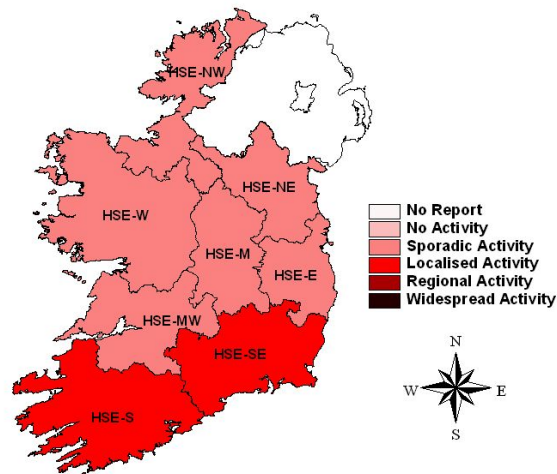


Figure 6: Map of influenza activity by HSE area for week 2 2008

Influenza Activity in Northern Ireland

During week 3 2008, seven cases of clinical influenza and 75 ILI cases were reported in Northern Ireland, corresponding to a combined rate of 57.3 per 100,000 population, a decrease from the updated rate of 63.4 per 100,000 for week 2 2008. Thirty-three non-sentinel specimens and 12 sentinel specimens were tested during week 3 2008, three were positive for influenza A and three were positive for influenza B. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

During week 3 2008, influenza activity decreased in Scotland and England and remained stable in Wales. Activity has returned to baseline levels in both England and Scotland and remains at baseline levels in Wales. ILI episode incidence rates decreased in England from 30.5 per 100,000 persons in week 2 2008 to 19.8 per 100,000 in week 3 2008. In Scotland, ILI consultation rates decreased from 50 per 100,000 in week 2 2008 to 36 per 100,000 in week 3 2008. In Wales, GP ILI consultation rates remained stable at 6.1 per 100,000 in week 2 2008 and 7.8 per 100,000 in week 3 2008. Of the samples referred to the Centre for Infection's Respiratory Virus Unit during this week, 21 tested positive for influenza A (H1), two for A (H3), three for B and two for RSV. <http://www.hpa.org.uk/infections/topics%5Faz/influenza/seasonal/flureports0708.htm>

Influenza Activity in Europe

During week 2 2008, increased influenza activity was reported in the following, mainly western, European countries: Austria, Bulgaria, England, France, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Northern Ireland, Portugal, Slovenia, Spain and Switzerland. In the rest of Europe low levels of influenza activity were reported. Eight countries (England, France, Hungary, Italy, Luxembourg, the Netherlands, Spain and Switzerland) reported widespread activity, two countries regional activity, five countries local activity, ten countries sporadic activity and two countries reported no influenza activity during week 2 2008. The total number of respiratory specimens collected by sentinel physicians in week 2 2008 was 1196, of which 399 (33%) were influenza virus positive; 191 (48%) A (unsubtyped), 121 (31%) A (H1) [of which 46 were A (H1N1)], one A (H3) and 85 (21%) type B. In addition, 315 influenza virus detections were reported from non-sentinel sources, of which 193 (61%) were A (unsubtyped), 73 (23%) A (H1) [of which 14 were A (H1N1)] and 49 (16%) B. Based on (sub)typing data of all influenza virus detections to date this season (N=2379), 1075 (45%) were A (unsubtyped), 855 (36%) were A (H1), 31 (1%) were A (H3) and 416 (18%) were B. Based on the antigenic and/or genetic characterisation of 490 influenza viruses, 20 were A/New Caledonia/20/99 (H1N1)-like, 380 were A/Solomon Island/3/2006 (H1N1)-like, two were A/Wisconsin/67/2005 (H3N2)-like, eight were A/Brisbane/10/2007 (H3N2)-like, 71 were B/Florida/4/2006-like (B/Yamagata/16/88 lineage) and 9 were B/Malaysia/2506/2004-like (B/Victoria/2/87 lineage). In 14 of the 27 European countries that reported epidemiological data for week 2 2008, levels of influenza activity are above baseline levels. This is a substantial increase compared to week 1 2008 when only seven

countries showed increased levels of influenza activity. Moreover, the number of positive specimens sharply increased from 198 in week 50 2007 to 714 detections in week 2 2008. These findings indicate that the annual influenza season has started in Europe. Influenza A (H1) is the dominant virus strain circulating in Europe this season and there is a good match between the strain 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 2 2008, influenza activity levels in Canada remained fairly low overall; with most indicators having remained similar to, or decreased from the previous week. In week 2 2008, seven influenza surveillance regions reported localised influenza activity, while the rest reported either no activity (n=26) or sporadic activity (n=23). The ILI consultation rate declined to 15 per 1,000 patient visits, which is below the expected range for week 2. The number of specimens that tested positive for influenza during week 2 2008 declined to 6.1% (260/4281). Of the influenza detections to date this season, 79% were influenza A and 21% were influenza B. Based on antigenic characterisation of 176 viruses, 119 were A/Solomon Islands/3/2006 (H1N1)-like, five were A/Wisconsin/67/2005 (H3N2)-like, seven were A/Brisbane/10/2007 (H3N2)-like, three were B/Malaysia/2506/2004-like and 26 were B/Florida/4/2006-like. <http://www.phac-aspc.gc.ca/fluwatch/index.html>

Influenza Activity in the United States

During week 2 2008, influenza activity continued to increase in the United States. Four states reported widespread influenza activity; 11 states reported regional influenza activity; the District of Columbia and 15 states reported localised influenza activity; 19 states reported sporadic influenza activity; and one state reported no influenza activity. The proportion of outpatient visits for ILI was above national baseline levels, and the proportion of outpatient visits for acute respiratory illness was below national baseline levels. The proportion of deaths attributed to pneumonia and influenza was equal to the epidemic threshold. During week 2 2008, WHO and NREVSS laboratories reported 2,880 specimens tested for influenza viruses, 283 (9.8%) of which were positive: 60 A (H1), 17 A (H3) viruses, 166 A (unsubtyped) and 40 B. 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 2 2008, sporadic influenza activity was reported in China (2 A unsubtyped, 7 A H1, 16 A H3 and 56 B), Israel (2 A unsubtyped and 7 B) and Mongolia and no influenza activity was reported in South Africa. One influenza A (H1) virus detection was reported from Iran and 17 A (H1) virus detections were reported from Japan during week 2 2008. <http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of January 23rd 2008, 352 confirmed human cases and 219 (62.2%) 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 of Indonesia has announced a new case of human infection of influenza A (H5N1). A 30-year-old male from Tangerang District developed symptoms on January 13th 2008, was hospitalised on January 19th and is currently in hospital. Investigations into the source of his infection are ongoing. Of the 120 cases confirmed to date in Indonesia, 97 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