

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 6 2008 (4th – 10th February 2008)

Summary

During week 6 2008, GP consultation rates for influenza-like illness (ILI) decreased for the third consecutive week. Four influenza A and one influenza B positive specimens were detected by the NVRL during week 6 2008. Influenza A (H1) is the predominant influenza subtype circulating this season. Preliminary results from a survey of antiviral drug susceptibility in Europe have revealed that some of the influenza A (H1N1) viruses in circulation this season are resistant to the antiviral drug, oseltamivir.

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 24 ILI cases during week 6 2008, corresponding to an ILI consultation rate of 15.5 per 100,000 population, a significant decrease from the updated rate of 28.7 per 100,000 in week 5 2008 (figure 1). Forty-two (84.0%) sentinel practices reported during week 6 2008.

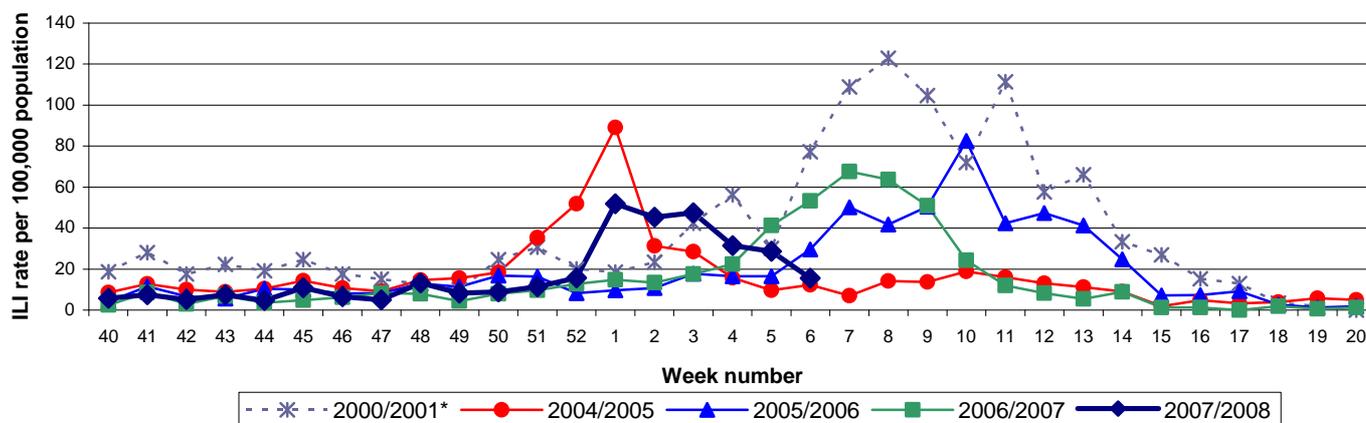


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2004/2005, 2005/2006, 2006/2007 & 2007/2008 influenza seasons *Highest recorded levels of ILI activity since initiation of sentinel surveillance

Results (continued)

During week 6 2008, there was a slight increase in ILI rates in the 5-14 year age group and ILI rates decreased or remained stable in all other age groups. One ILI case was reported in the 0-4 year age group (9.1 per 100,000 population), five cases in the 5-14 year age group (24.4 per 100,000 population), 18 cases in the 15-64 year age group (17.0 per 100,000 population) and no cases in those aged 65 year or older during week 6 2008, as shown in figure 2.

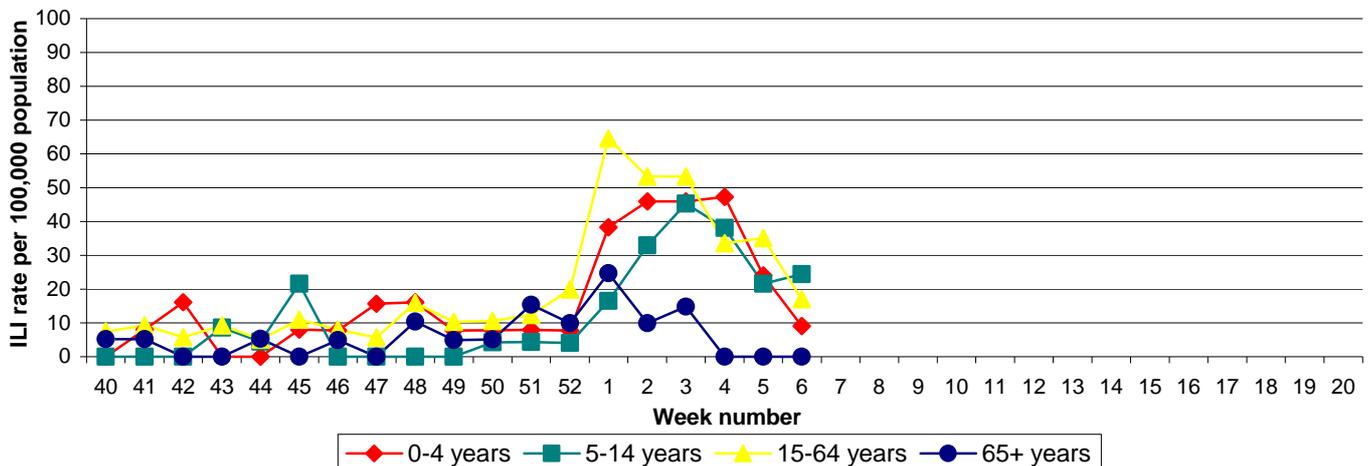


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2007/2008 influenza season
*Please note the denominator used in the age specific consultation rate is from the 2006 census data; this assumes that the age distribution of the sentinel general practices is similar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

Oseltamivir Resistance in Europe

Preliminary results from surveillance of antiviral drug susceptibility among seasonal influenza viruses circulating in Europe 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). As of February 7th 2008, 755 samples of influenza A (H1N1) viruses isolated between November 2007 and January 2008 in 19 European countries have been tested by the EU-funded VIRGIL network and National Influenza Centres. Of the 755 samples, 151 from nine countries (Finland, France, Germany, Greece, the Netherlands, Norway, Portugal, Sweden and the United Kingdom) showed evidence of resistance to oseltamivir. The highest level of resistance has been observed in Norway, where 42 of 66 samples (63.3%) were resistant. Experts from the European Centre for Disease Prevention and Control (ECDC), the European Commission, the European Influenza Surveillance Scheme and the World Health Organization (WHO) are currently assessing the significance of the data from the EISS VIRGIL network. An interim risk assessment has been published by ECDC. The National Virus Reference Laboratory is currently arranging for Irish samples to be tested. Experts from the European Centre for Disease Prevention and Control (ECDC), the European Commission and WHO are currently assessing the significance of this information.

Eurosurveillance article: http://www.eurosurveillance.org/edition/v13n05/080131_2.asp

ECDC Report on Interim risk assessment: http://www.ecdc.europa.eu/pdf/080127_os.pdf

Latest oseltamivir resistance data for Europe: http://ecdc.europa.eu/Health_topics/influenza/antivirals_table.html

Virological Data from the NVRL

The NVRL tested eleven specimens taken by sentinel GPs during week 6 2008, four of which were positive for influenza A and one for influenza B. The NVRL also tested 61 non-sentinel specimens taken during week 6 2008, mainly from hospitalised paediatric cases, one (1.6%) of which was positive for influenza A. To date this season, 95 (6.1%) specimens have tested positive for influenza from sentinel and non-sentinel sources (n=1570): 13 A (unsubtyped), 58 A (H1), 1 A (H3) and 23 B viruses. Influenza A is the dominant influenza type circulating this season, accounting for 75.8% of positive specimens. Of the 72 influenza A positive specimens detected this season, influenza A (H1) accounts for 98.3% of subtyped (n=59) 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.

Six non-sentinel specimens¹ were positive for respiratory syncytial virus (RSV) during week 6 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: 9 influenza A, 2 influenza B, 439 RSV, 5 Adenovirus, 2 parainfluenza virus (PIV) type-1, 6 PIV-2 and 10 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 6 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
6 2008	Sentinel	11	5	46.0	4	1	-	-
	Non-Sentinel	61	1	1.6	1	0	6	9.8
	Total	72	6	8.3	5	1	6	8.3
Season to date	Sentinel	220	84	38.2	63	21	-	-
	Non-Sentinel	1350	11	0.8	9	2	439	32.5
	Total	1570	95	6.1	72	23	439	28.0

Table 2: Total number of sentinel and non-sentinel influenza A and B positive specimens by HSE-Area, reported by the NVRL for week 6 2008 and the 2007/2008 season to date

	Week 6 2008			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-E	1	0	1	16	4	20
HSE-M	1	0	1	7	0	7
HSE-MW	1	0	1	6	1	7
HSE-NE	1	0	1	9	8	17
HSE-NW	0	0	0	2	1	3
HSE-SE	0	0	0	10	6	16
HSE-S	0	1	1	15	1	16
HSE-W	1	0	1	7	2	9
Total	5	1	6	72	23	95

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 6 2008 and the 2007/2008 season to date

	Week 6 2008			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
0-4 years	1	0	1	5	1	6
5-14 years	1	0	1	6	0	6
15-64 years	3	1	4	60	20	80
65 years and older	0	0	0	0	2	2
Age group unknown	0	0	0	1	0	1
Total	5	1	6	72	23	95

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.

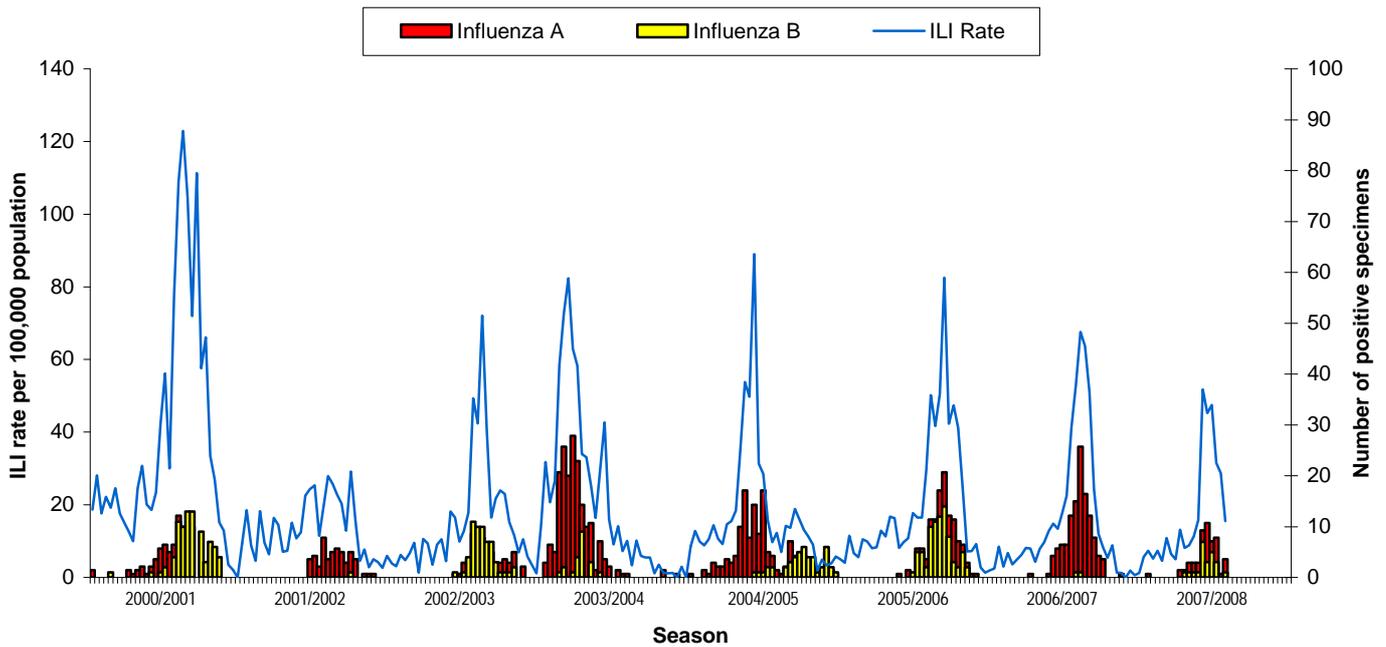


Figure 3: GP ILI consultation rate per 100,000 population and the number of positive influenza specimens detected by the NVRL by week and season, 2000/2001 - 2007/2008

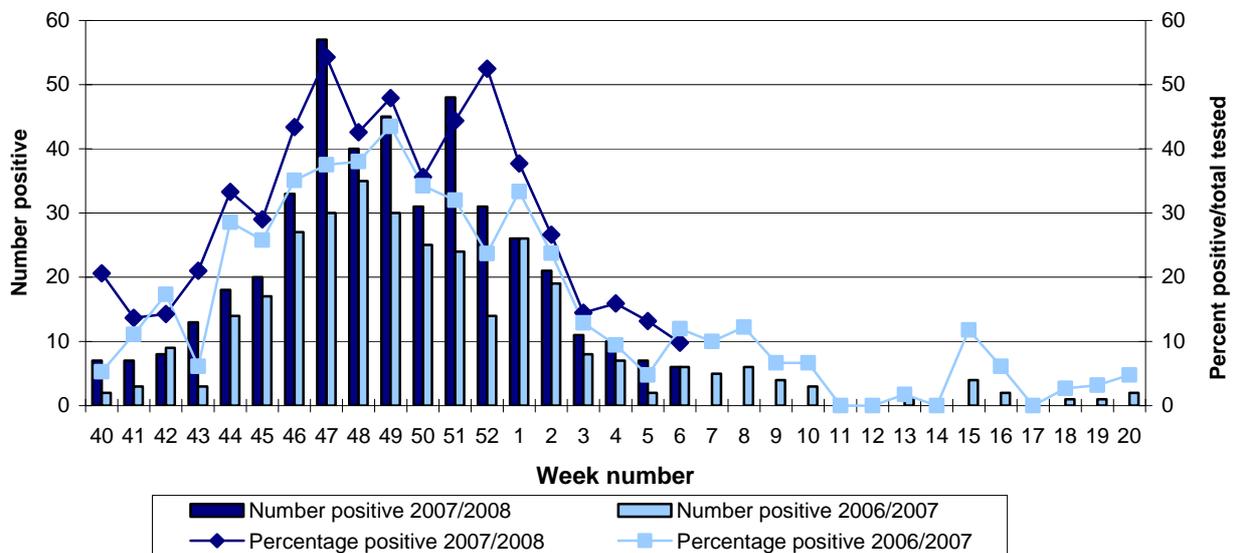


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2006/2007 and 2007/2008 influenza seasons

Weekly Influenza Notifications

Seven influenza A and two influenza B cases were notified to HPSC during week 6 2008: one from HSE-E, one from HSE-NE, one from HSE-NW, three from HSE-SE and three from HSE-S. Three influenza A and two influenza B cases were notified to HPSC during week 7 2008: two from HSE-E, one from HSE-NE, one from HSE-SE and one 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.

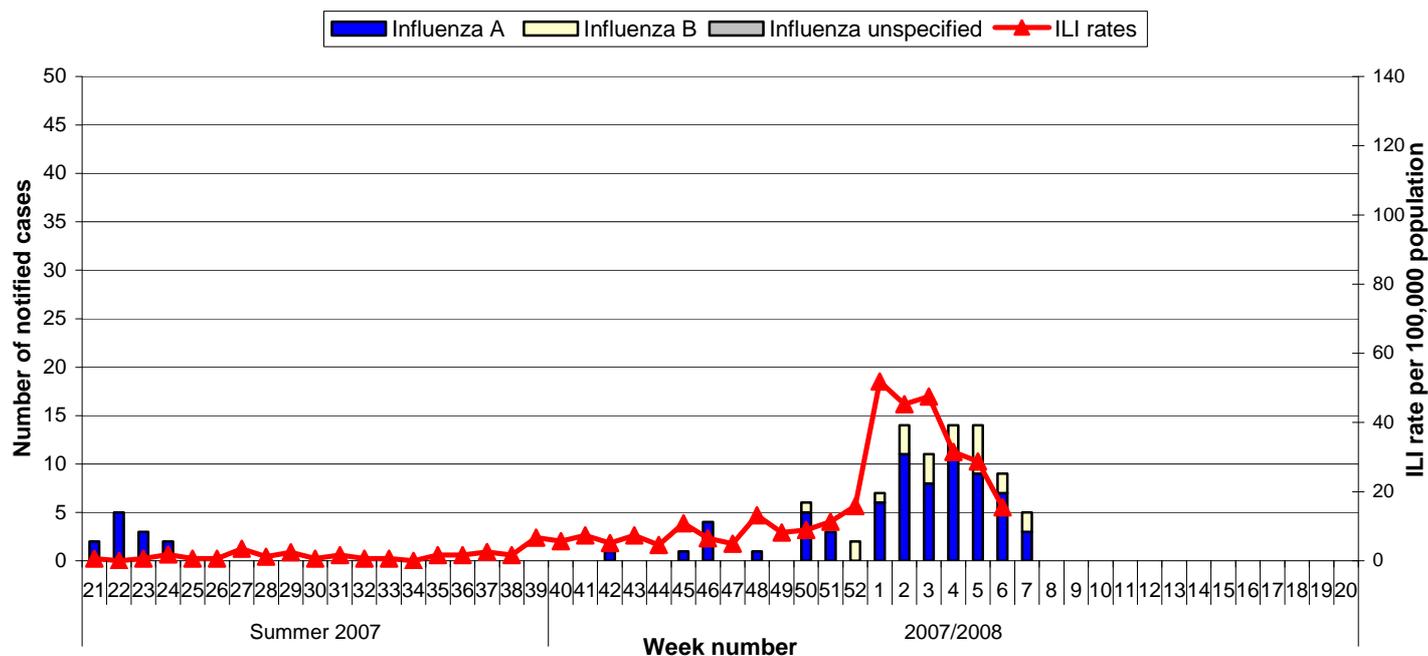


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2007 and the 2007/2008 influenza season
 *Notification data are provisional and were extracted from [CIDR](#) on the 14/02/2008 at 11:39

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.

There were no reports of increases in hospital respiratory admissions in sentinel hospitals during week 5 2008. Increased absenteeism was reported in one sentinel secondary school during week 5 2008 in HSE-MW.

During week 5 2008, localised influenza activity was reported in HSE-SE, 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.

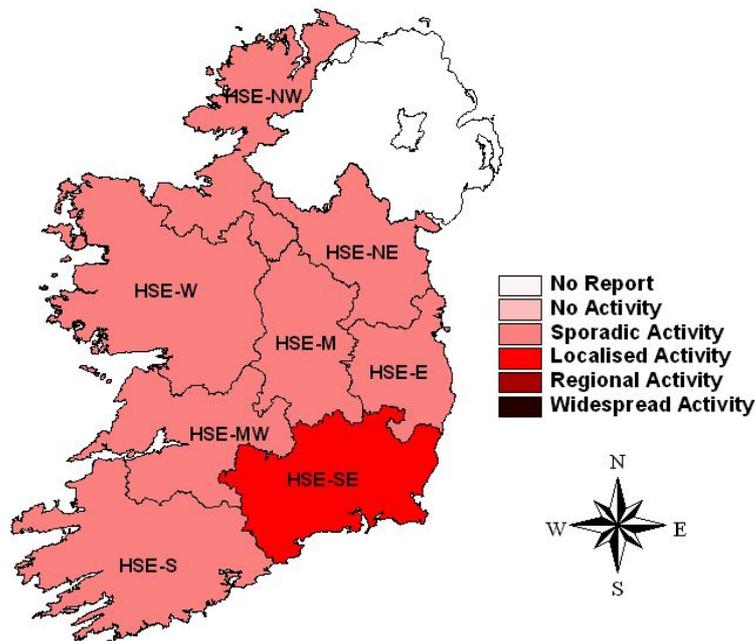


Figure 6: Map of influenza activity by HSE area for week 5 2008

Influenza Activity in Northern Ireland

During week 6 2008, ten cases of clinical influenza and 61 ILI cases were reported in Northern Ireland, corresponding to a combined rate of 57.0 per 100,000 population, a decrease from the updated rate of 64.5 per 100,000 for week 5 2008. Sixty-five sentinel and non-sentinel specimens were tested during week 6 2008, one was positive for influenza A and six were positive for influenza B. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

During week 6 2008, influenza activity decreased in Scotland and remained at approximately the same low level in Wales and England. Activity was at baseline levels in England, Scotland and Wales during week 6 2008. In England, the ILI episode incidence rate remained at about the same level at 13.1 per 100,000 persons in week 5 2008 and 12.6 per 100,000 in week 6 2008. In Scotland, GP ILI consultation rates decreased from 24 per 100,000 in week 5 2008 to 21 per 100,000 in week 6 2008. In Wales, GP consultation rates for influenza remained low at 1.7 per 100,000 in week 5 2008 and 3.4 per 100,000 in week 6 2008. Of the samples referred to the Centre for Infection's Respiratory Virus Unit during week 6 2008, four tested positive for influenza A (H1), five for B and one for RSV. Of the influenza viruses characterised this season, 188 were A/Solomon Island/3/2006 (H1)-like viruses, 62 were A/Solomon Island/3/2006 (H1N1)-like viruses, two were A/Wisconsin/67/05 (H3N2) like viruses and 15 were B/Florida/4/2006-like viruses.

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

Influenza Activity in Europe

During week 5 2008, influenza activity was high in only one country (Bulgaria) in Europe, medium in 20 and low in eight other countries. Clinical influenza activity continued to decline in Spain and is reaching its peak in Bulgaria, Hungary, Switzerland and the United Kingdom. Eleven countries reported widespread activity, eight countries regional activity, two countries localised activity, seven countries sporadic activity and one country reported no influenza activity during week 5 2008. Eleven countries indicated an increase in clinical influenza activity in week 5 2008 compared to week 4 2008, with substantial increases observed in Latvia and Estonia. A number of countries have not yet observed consultation rates above the national baseline threshold. In the majority

of countries influenza activity is either unchanging or declining. The total number of respiratory specimens collected by sentinel physicians in week 5 2008 was 1940, of which 643 (33%) were influenza virus positive: 237 (37%) A (unsubtyped), 218 (34%) A (H1) [of which 132 were A (H1N1)], 10 (<2%) A (H3) [of which four were A (H3N2)] and 178 (28%) B. In addition, 389 influenza virus detections were reported from non-sentinel sources, of which 251 (65%) were A (unsubtyped), 47 (12%) A (H1) [of which 26 were A (H1N1)], two (0.5%) A (H3) [of which one was A (H3N2)] and 89 (23%) B. Based on (sub)typing data of all influenza virus detections this season (N=6354; sentinel and non-sentinel data), 2778 (44%) were A (unsubtyped), 2270 (36%) were A (H1), 59 (1%) were A (H3) and 1247 (20%) were B. Although influenza A (H1) is the dominant virus strain circulating in Europe this season, influenza B still represents 20% of the total influenza virus detections since the start of the season and, in Spain, influenza B is currently the dominant virus. There is a good match between the dominant virus strain circulating in Europe (influenza A(H1)) and the corresponding vaccine strain A/Solomon Island/3/2006 which is included in the 2007/2008 influenza vaccine. Despite a mismatch of the majority of characterised influenza B viruses with the influenza B virus strain included in the vaccine, it is expected that the vaccine offers still valuable protection due to cross reactive antibodies between both lineages of influenza B viruses. <http://www.eiss.org/index.cgi>

Influenza Activity in Canada

During week 5 2008, overall influenza activity levels in Canada remained similar to previous weeks. Only one region reported widespread influenza activity, nine regions reported localised activity, 22 reported sporadic activity and 16 reported no activity. The ILI consultation rate during week 5 2008 was 22 per 1,000 patient visits, which is below the expected range for this week. In week 5 2008, the percentage of specimens that tested positive for influenza was 12% (498/4,006) with both influenza A and B detections having increased from the previous week. Of the influenza detections to date, 75% were influenza A and 25% were influenza B. Based on antigenic characterisation of 327 viruses, 203 were A/Solomon Islands/3/2006 (H1N1)-like, five were A/Wisconsin/67/2005 (H3N2)-like, 27 were A/Brisbane/10/2007 (H3N2)-like, three were B/Malaysia/2506/2004-like and 89 were B/Florida/4/2006-like. <http://www.phac-aspc.gc.ca/fluwatch/index.html>

Influenza Activity in the United States

During week 5 2008, influenza activity continued to increase in the United States. The proportion of outpatient visits for ILI and acute respiratory illness (ARI) was above national baseline levels. Thirty-one states reported widespread influenza activity; 17 states reported regional influenza activity; and two states and the District of Columbia reported local influenza activity. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold for the fourth consecutive week. During week 5 2008, WHO and NREVSS laboratories reported 6,430 specimens tested for influenza viruses, 1,538 (23.9%) of which were positive: 916 A (unsubtyped), 81 A (H1), 248 A (H3) and 293 B. Although influenza A (H1) viruses have been the predominant subtype overall this season, influenza A (H3) viruses have been reported more frequently than A (H1) viruses in the past two weeks. <http://www.cdc.gov/flu/weekly/fluactivity.html>

Influenza Activity Worldwide

During week 5 2008, localised influenza activity was reported in Tunisia (2 A H1, 1 A H3 & 1 B). Sporadic influenza activity was reported in Chile (2 A H1), China (2 A untyped, 31 A H1, 22 A H3 and 2 B), Mongolia and Peru (1 A untyped). No influenza activity was reported in Cameroon during week 5 2008. <http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of February 12th 2008, 360 confirmed human cases and 226 (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 a new case of human infection of H5N1 avian influenza. A 15-year-old female from West Jakarta, Jakarta Province developed symptoms on February 2nd and is currently in hospital in a critical condition. The case is the daughter of a previously confirmed case, the 38-year-old female from West Jakarta, Jakarta Province who developed symptoms on January 23rd. Investigations into the source of her infection are ongoing. However, she was exposed to her sick mother on January 27th and 28th and spent time in a neighbourhood where chickens and other birds were found. Samples from these birds have been taken and are undergoing tests to determine whether they may have been the source of infection. Of the 127 cases confirmed to date in Indonesia, 103 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>

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

Acknowledgements

HPSC, ICGP and NVRL wish to thank the sentinel GPs who have participated in the GP sentinel surveillance system and who have contributed towards this report

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