

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 13 2008 (24th – 30th March 2008)

Summary

During week 13 2008, GP consultation rates for influenza-like illness (ILI) remained at low levels. Six influenza A and ten influenza B positive specimens were detected by the National Virus Reference Laboratory (NVRL) during week 13 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 29 ILI cases during week 13 2008, corresponding to an ILI consultation rate of 15.9 per 100,000 population, a slight increase from the updated rate of 10.4 per 100,000 in week 12 2008 (figure 1). Forty-three (82.7%) sentinel practices reported during week 13 2008.

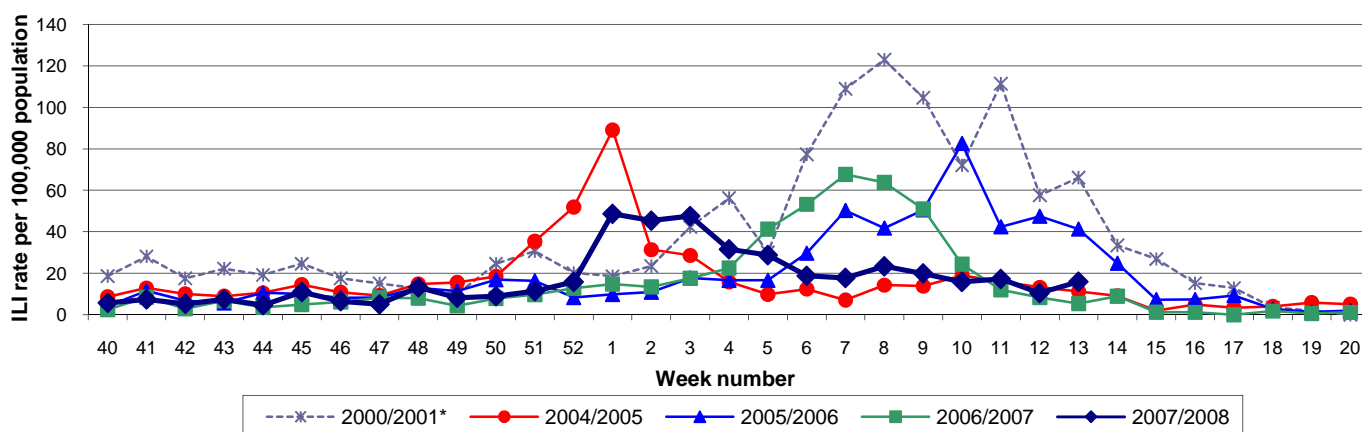


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2004/2005, 2005/2006, 2006/2007 & 2007/2008 influenza seasons *Highest recorded levels of ILI activity since initiation of sentinel surveillance

Results (continued)

During week 13 2008, two ILI cases were reported in the 0-4 year age group (15.3 per 100,000 population), one case was reported in the 5-14 year age group (4.1 per 100,000 population), 25 cases in the 15-64 year age group (19.9 per 100,000 population) and one case was reported in those aged 65 years or older (5.0 per 100,000 population), as shown in figure 2.

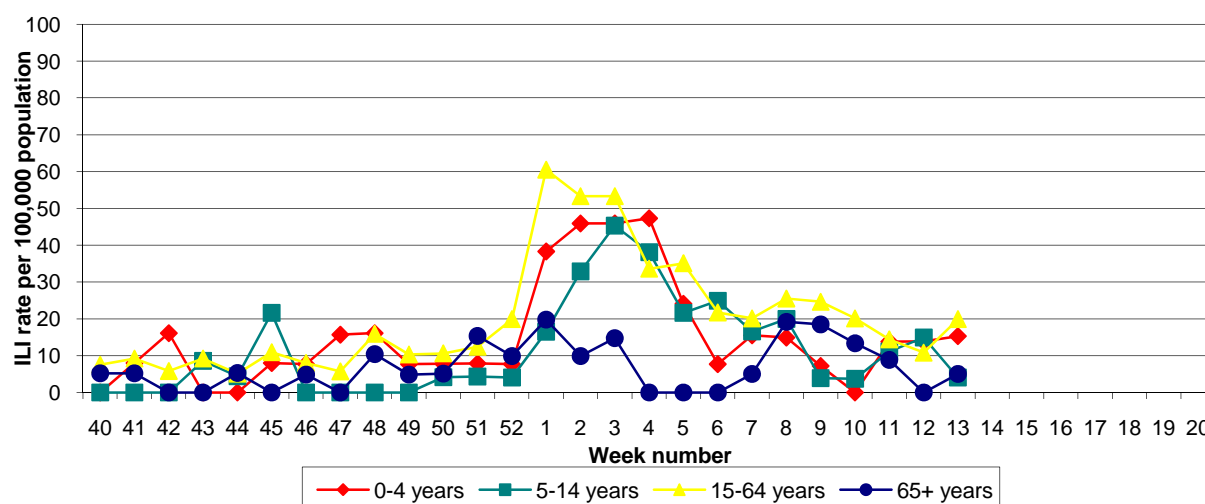


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2007/2008 influenza season
*Please note the denominator used in the age specific consultation rate is from the 2006 census data; this assumes that the age distribution of the sentinel general practices is similar 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 three specimens taken by sentinel GPs during week 13 2008, all of which were positive for influenza B. The NVRL also tested 103 non-sentinel specimens taken during week 13 2008, one was positive for influenza A (A H3), five were positive for influenza A (unsubtyped) and seven were positive for influenza B.

To date this season, 175 (8.3%) specimens have tested positive for influenza from sentinel and non-sentinel sources (n=2116): 30 A (unsubtyped), 73 A (H1), 7 A (H3) and 65 B viruses. Of the 110 influenza A positive specimens detected this season, influenza A (H1) accounts for 94.3% of subtyped (n=80) specimens. To date this season, the NVRL have completed genetic strain characterisation on 35 influenza A (H1) subtypes, all 35 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.

One non-sentinel specimen¹ was positive for respiratory syncytial virus (RSV) during week 13 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: 32 influenza A, 21 influenza B, 456 RSV, 9 Adenovirus, 2 parainfluenza virus (PIV) type-1, 13 PIV-2 and 12 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 13 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
13 2008	Sentinel	3	3	100.0	0	3	-	-
	Non-Sentinel	103	13	12.6	6	7	1	1.0
	Total	106	16	15.0	6	10	1	0.9
Season to date	Sentinel	289	122	42.2	78	44	-	-
	Non-Sentinel	1827	53	2.9	32	21	456	25.0
	Total	2116	175	8.3	110	65	456	21.6

Table 2: Total number of sentinel and non-sentinel influenza A and B positive specimens by HSE-Area, reported by the NVRL for week 13 2008 and the 2007/2008 season to date

	Week 13 2008			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-E	6	7	13	41	32	73
HSE-M	0	0	0	8	1	9
HSE-MW	0	1	1	7	4	11
HSE-NE	0	0	0	13	10	23
HSE-NW	0	1	1	2	4	6
HSE-SE	0	1	1	13	7	20
HSE-S	0	0	0	17	3	20
HSE-W	0	0	0	9	4	13
Total	6	10	16	110	65	175

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 13 2008 and the 2007/2008 season to date

	Week 13 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	2	10
15-64 years	2	10	12	76	57	133
65 years and older	4	0	4	15	3	18
Age group unknown	0	0	0	5	0	5
Total	6	10	16	110	65	175

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.

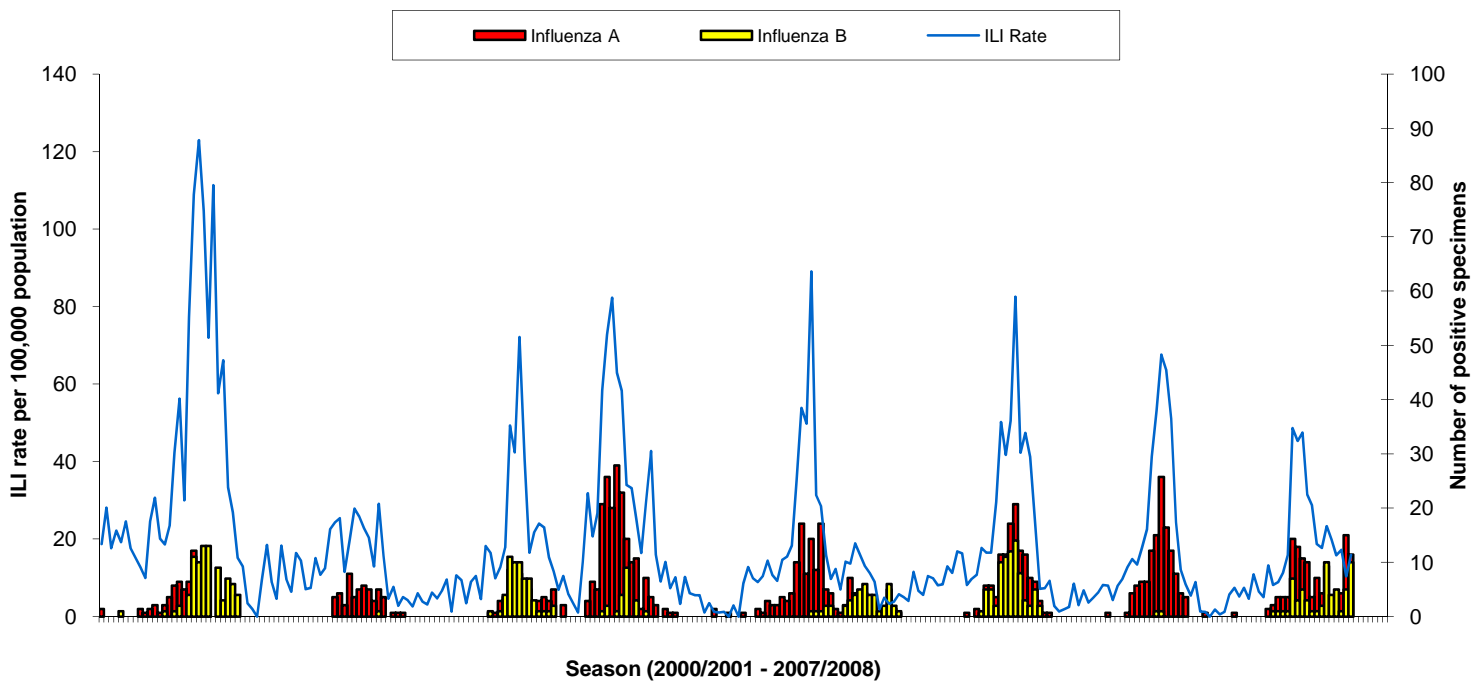


Figure 3: GP ILI consultation rate per 100,000 population and the number of positive influenza specimens detected by the NVRL by week and season, 2000/2001 - 2007/2008

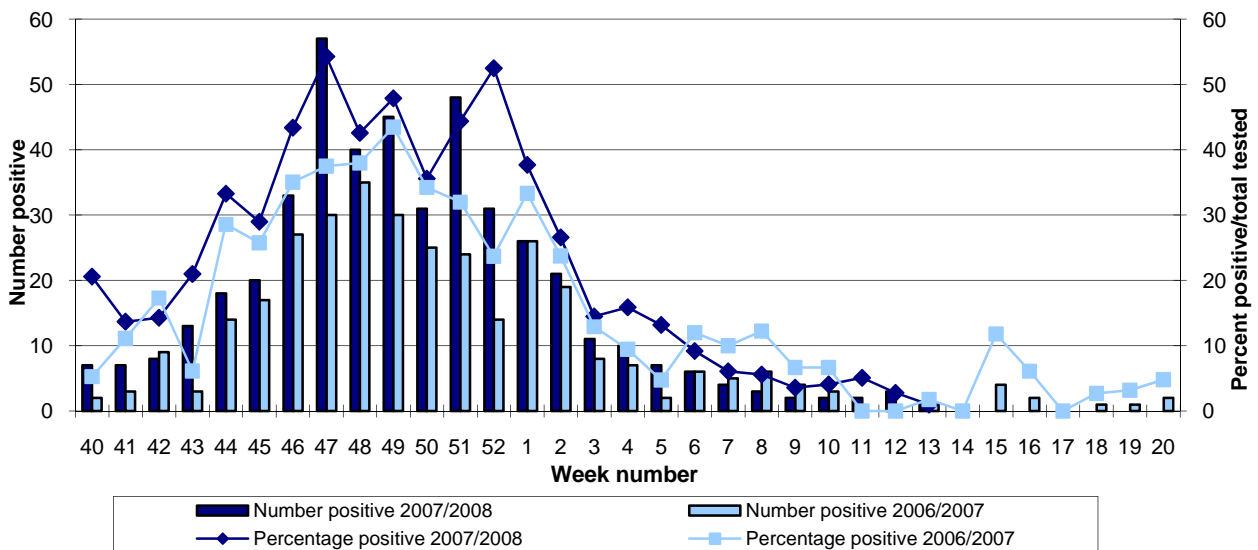


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2006/2007 and 2007/2008 influenza seasons

Weekly Influenza Notifications

Eight influenza A and seven influenza B cases were notified to HPSC during week 13 2008: 11 from HSE-E, two from HSE-NE, one from HSE-NW and one from HSE-SE. Three influenza B cases were notified to HPSC during week 14 2008: two from HSE-E and one from HSE-NW. 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.

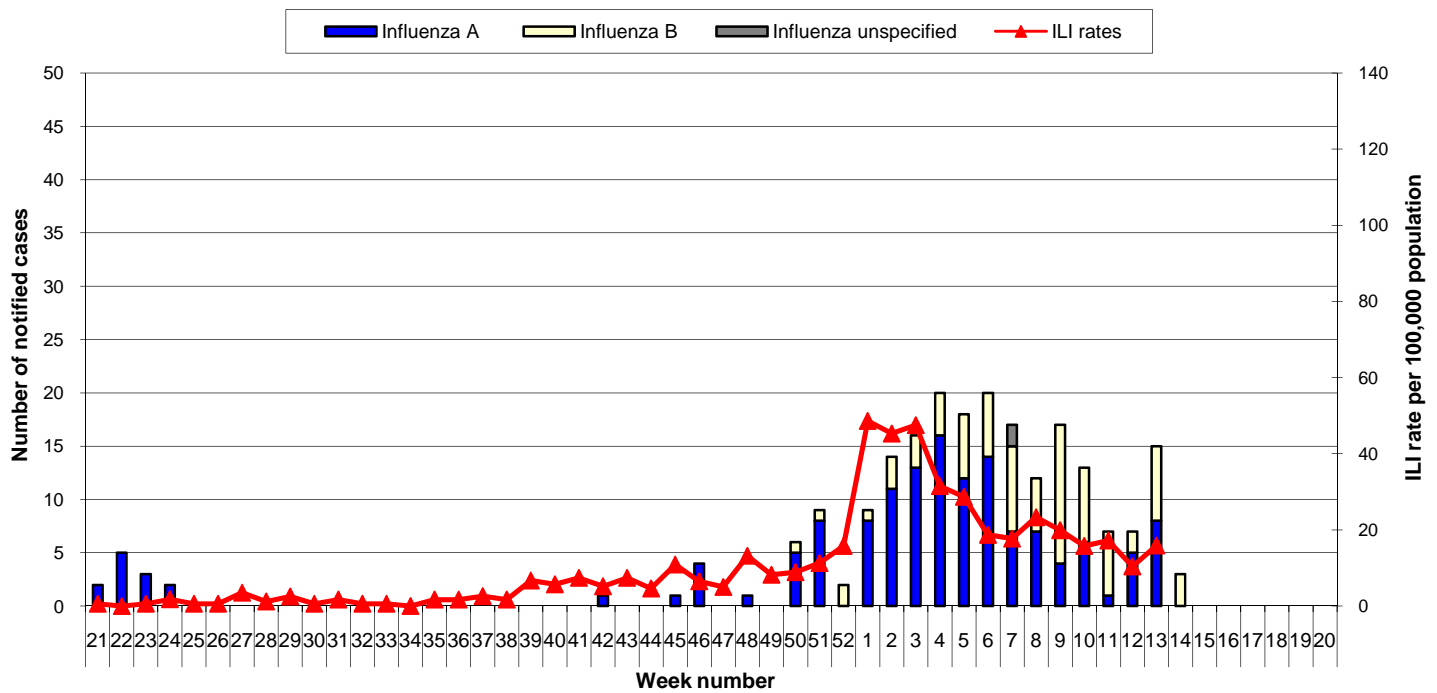


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2007 and the 2007/2008 influenza season
 *Notification data are provisional and were extracted from [CIDR](#) on the 03/04/2008 at 14:21

Mortality Data

One death attributed to influenza was 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

An outbreak of ILI/influenza was reported to HPSC from HSE-E during week 12 2008. The outbreak occurred in a long-stay residential unit of a healthcare institution. Thirty-one patients and 14 staff with ILI symptoms were reported. Of the 31 patients, eight were hospitalised, of whom three died. The majority of clinical specimens from these patients tested positive for influenza A.

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 significant increases in hospital respiratory admissions reported from sentinel hospitals during week 12 2008. No school absenteeism data are available for weeks 11 and 12 2008 due to the Easter holiday period.

During week 12 2008, no influenza activity was reported in HSE-NW 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.

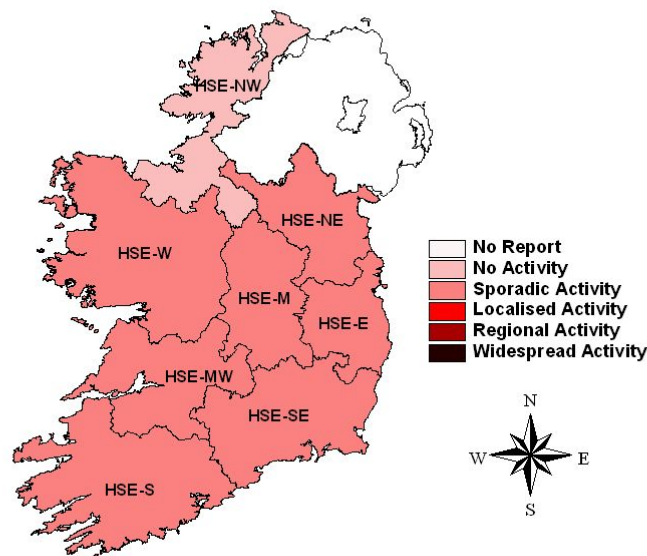


Figure 6: Map of influenza activity by HSE-Area for week 12 2008

Influenza Activity in Northern Ireland

During week 13 2008, seven cases of clinical influenza and 52 ILI cases were reported in Northern Ireland, corresponding to a combined rate of 41.2 per 100,000 population, a decrease from the updated rate of 55.9 per 100,000 for week 12 2008. Three influenza A and five influenza B positive specimens were detected during week 13 2008. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

Data for week 13 2008 was not available at the time of publication of this report. During weeks 11 2008 and 12 2008, influenza activity decreased in England and remained at about the same level in Scotland and Wales. Activity is at baseline levels in England, Scotland and Wales. In England, the ILI episode incidence rate decreased from 13.4 per 100,000 population in week 11 2008 to 9.0 per 100,000 in week 12 2008. Both weeks are below the English baseline activity threshold of 30 per 100 000 population. In Scotland, GP consultation rates for ILI were 8 per 100 000 population in week 11 2008 and 9 per 100,000 in week 12 2008. Both weeks are below the Scottish baseline threshold of 50 consultations per 100,000 population. In Wales, GP consultation rates for influenza were 2.0 per 100,000 population in week 11 2008 and 1.3 per 100,000 population in week 12 2008. Both weeks are below the Welsh baseline threshold of 25 consultations per 100 000 population. Of the samples referred to the Centre for Infections' Respiratory Virus Unit (RVU) during week 12 2008, two were positive for influenza A(H3) and three were positive for influenza B; in week 11 2008 six were positive for influenza B and one for influenza A(H1). Of the influenza viruses characterised since week 40/07, there have been 308 A/Solomon Island/3/2006 (H1 and H1N1) like viruses, five A/Wisconsin/67/05 (H3N2) like viruses and 67 B/Florida/4/2006-like viruses. <http://www.hpa.org.uk/infections/topics%5Faz/influenza/seasonal/flureports0708.htm>

Influenza Activity in Europe

The 2007/2008 influenza season is coming to an end in Europe. All countries are reporting declining levels of clinical influenza activity and only three countries (Bulgaria, Luxembourg and Romania) reported levels of clinical influenza activity that are above the national baseline in week 12 2008. Widespread influenza activity was reported in the Netherlands, local activity in three countries, sporadic activity in 12 countries and no activity was reported in six countries. Influenza virus detections of influenza are clearly declining for Europe as a whole. Whilst influenza activity was predominantly caused by the influenza A (H1N1) virus during most of the season, in recent weeks (since week 9 2008) influenza B has been dominant in Europe. Influenza B accounted for 71% of the total positive specimens collected in week 12 2008. Based on the antigenic and/or genetic characterisation of 3203 influenza

viruses this season, 62 were A/New Caledonia/20/99 (H1N1)-like, 2113 were A/Solomon Island/3/2006 (H1N1)-like, 17 were A/Wisconsin/67/2005 (H3N2)-like, 20 were A/Brisbane/10/2007 (H3N2)-like, 977 were B/Florida/4/2006-like (B/Yamagata/16/88 lineage) and 14 were B/Malaysia/2506/2004-like (B/Victoria/2/87 lineage). <http://www.eiss.org/index.cgi>

Influenza Activity in Canada

During week 12 2008, overall influenza activity in Canada increased slightly. Widespread influenza activity was reported by four regions and localised influenza activity by 16 regions. Five regions reported no activity and 29 reported sporadic activity. The ILI consultation rate was 24 per 1,000 patient visits, which is within the expected range for this week. In week 12, the percentage of specimens that tested positive for influenza was 19% (881/4,740). Based on antigenic characterisation of 848 viruses, 388 were A/Solomon Islands/3/2006 (H1N1)-like, 14 were A/Brisbane/59/2007 (H1N1)-like, five were A/Wisconsin/67/2005 (H3N2)-like, 87 were A/Brisbane/10/2007 (H3N2)-like, four were B/Malaysia/2506/2004-like and 350 were B/Florida/4/2006-like. <http://www.phac-aspc.gc.ca/fluwatch/index-eng.php>

Influenza Activity in the United States

During week 12 2008, influenza activity continued to decrease in the United States. Seventeen states reported widespread influenza activity; 30 states reported regional influenza activity; two states and the District of Columbia reported local influenza activity; and one state and Puerto Rico reported sporadic influenza activity. The proportion of outpatient visits for ILI was above national baseline levels, while the proportion of outpatient visits for acute respiratory illness (ARI) was below national baseline levels. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold for the eleventh consecutive week. During week 12, WHO and NREVSS laboratories reported 4,625 specimens tested for influenza viruses, 986 (21.3%) of which were positive: 27 A (H1), 156 A (H3), 363 A untyped and 440 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 12 2008, regional influenza activity was reported in Tunisia (2 A H1 & 1 B) and sporadic activity was reported in China (10 A untyped, 108 A H1, 68 A H3 & 250 B), Israel (2 A untyped & 3 B) and Mongolia (2 A H3 & 1 B). No influenza activity was reported in Cameroon, Kazakhstan and Sri-Lanka.

<http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of April 3rd 2008, 378 confirmed human cases and 238 (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/

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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