

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 2 2007 (8th to 14th January 2007)

Summary

During week 2 2007, influenza activity was at low levels in Ireland, with 20 influenza-like illness (ILI) cases reported by sentinel GPs. Six specimens tested by the NVRL were positive for influenza virus during week 2.

Background

This is the seventh 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. Forty-six 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

Twenty ILI cases were reported from sentinel GPs during week 2 2007, corresponding to an ILI consultation rate of 14.8 per 100,000 population, a decrease from the updated rate of 15.8 in week 1 (figure 1).

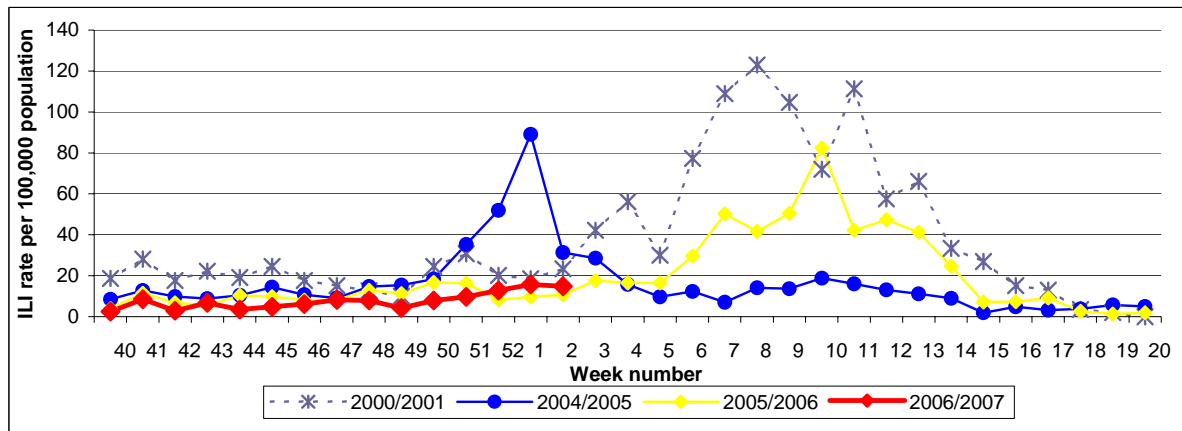


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2004/2005, 2005/2006 & 2006/2007 influenza seasons.

* Highest recorded levels of ILI activity since initiation of sentinel surveillance.

Results (continued)

One case was in the 0-4 year age group (10.4 per 100,000 population), two cases were in the 5-14 year age group (10.5 per 100,000 population) and 17 cases were in the 15-64 year age group (18.6 per 100,000 population) as shown in figure 2. Thirty-five of the 46 (76.1%) sentinel general practices reported during week 2 2007, with 12 reporting ILI.

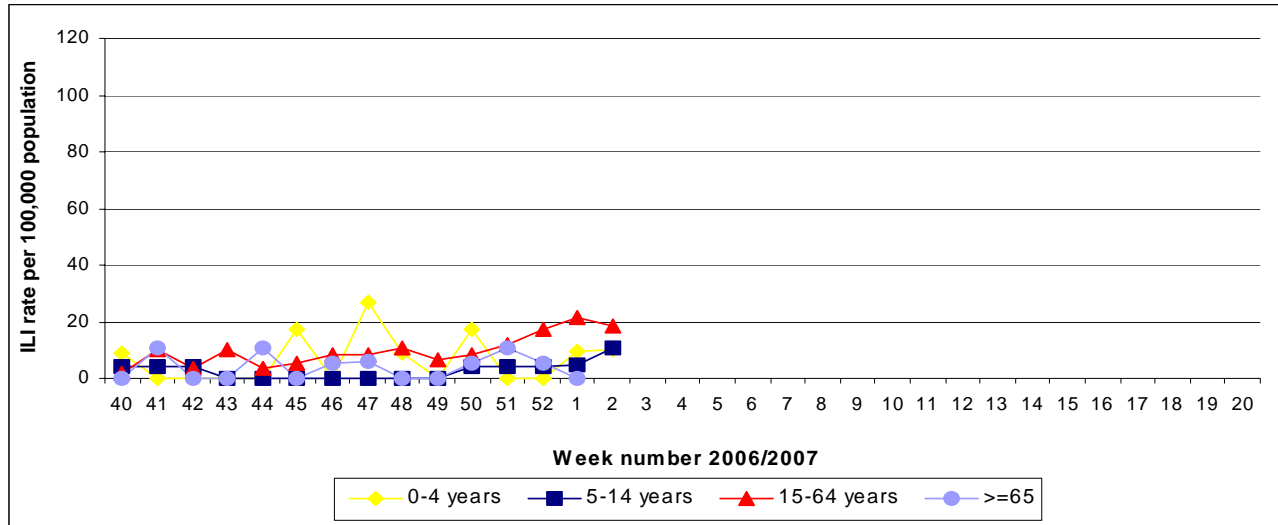


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2006/2007 influenza season. *Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is similar to the national age distribution.

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested 11 specimens taken by sentinel GPs during week 2 2007, four of which were positive for influenza A virus. The NVRL also tested 74 non-sentinel specimens taken during week 2 2007, mainly from hospitalised paediatric cases. 19 non-sentinel specimens were positive for respiratory syncytial virus (RSV) and two were positive for influenza A virus (table 1). During the 2006/2007 season to date, 14 influenza A viruses have been detected, five of which have been subtyped as A(H3). Influenza positive specimens have been detected in five of the eight HSE-Areas so far this season (table 2). 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 2005/2006 and 2006/2007 influenza seasons.

Table 1: Number of sentinel and non-sentinel* respiratory specimens and positive results for week 2 2007 and the 2006/2007 season to date

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
2 2007	Sentinel	11	4	36.4	4	0	NA
	Non-Sentinel	74	2	2.7	2	0	19
	Total	85	6	7.1	6	0	19
40 2006 - 2 2007	Sentinel	95	10	10.5	10	0	NA
	Non-Sentinel	958	4	0.4	4	0	278
	Total	1053	14	1.3	14	0	278

*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-Health Area for week 2 2007 and the 2006/2007 season to date

	Week 2 2007			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	3	0	3	8	0	8
HSE-MA	1	0	1	1	0	1
HSE-MWA	1	0	1	2	0	2
HSE-NEA	0	0	0	0	0	0
HSE-NWA	0	0	0	2	0	2
HSE-SEA	0	0	0	0	0	0
HSE-SA	1	0	1	1	0	1
HSE-WA	0	0	0	0	0	0
Total	6	0	6	14	0	14

* 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.

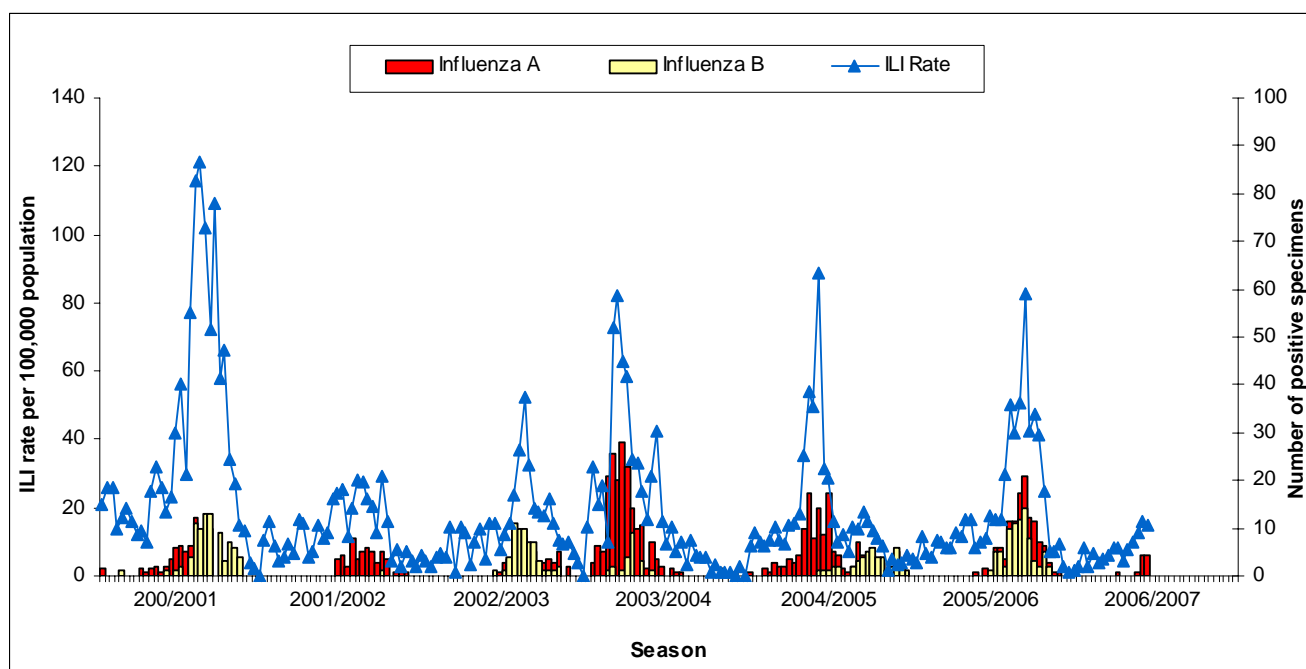


Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005, 2005/2006 & 2006/2007 seasons.

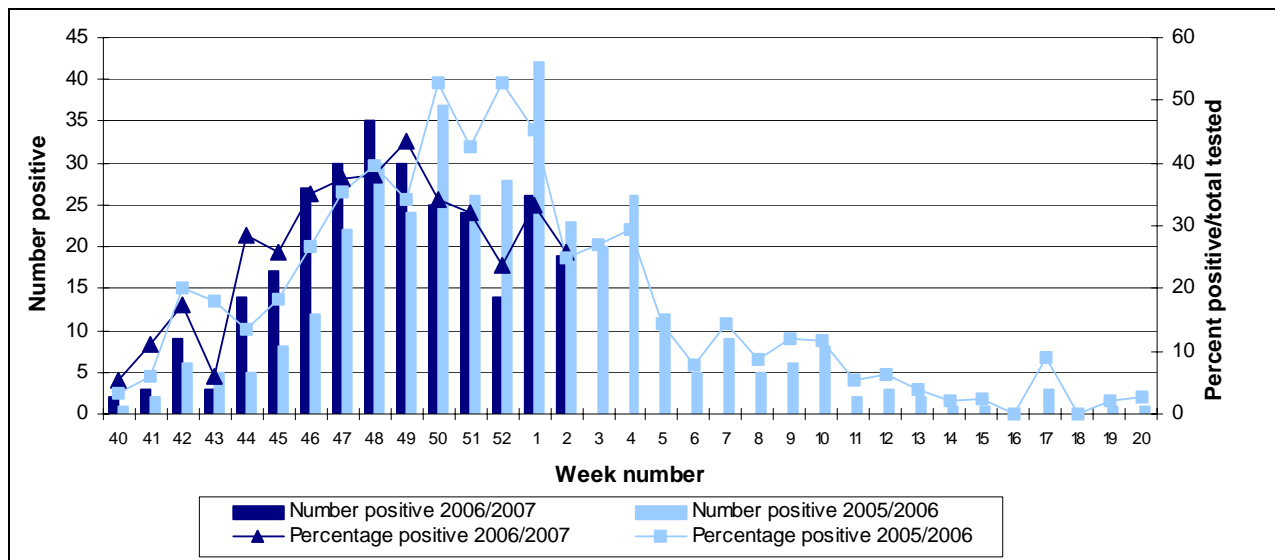


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2006/2007 influenza seasons.

Weekly Influenza Notifications

One influenza case was notified to HPSC during week 2 2007. Influenza cases notified to HPSC during the summer of 2006 and during the 2006/2007 influenza season are shown in figure 5 and compared to ILI consultation rates.

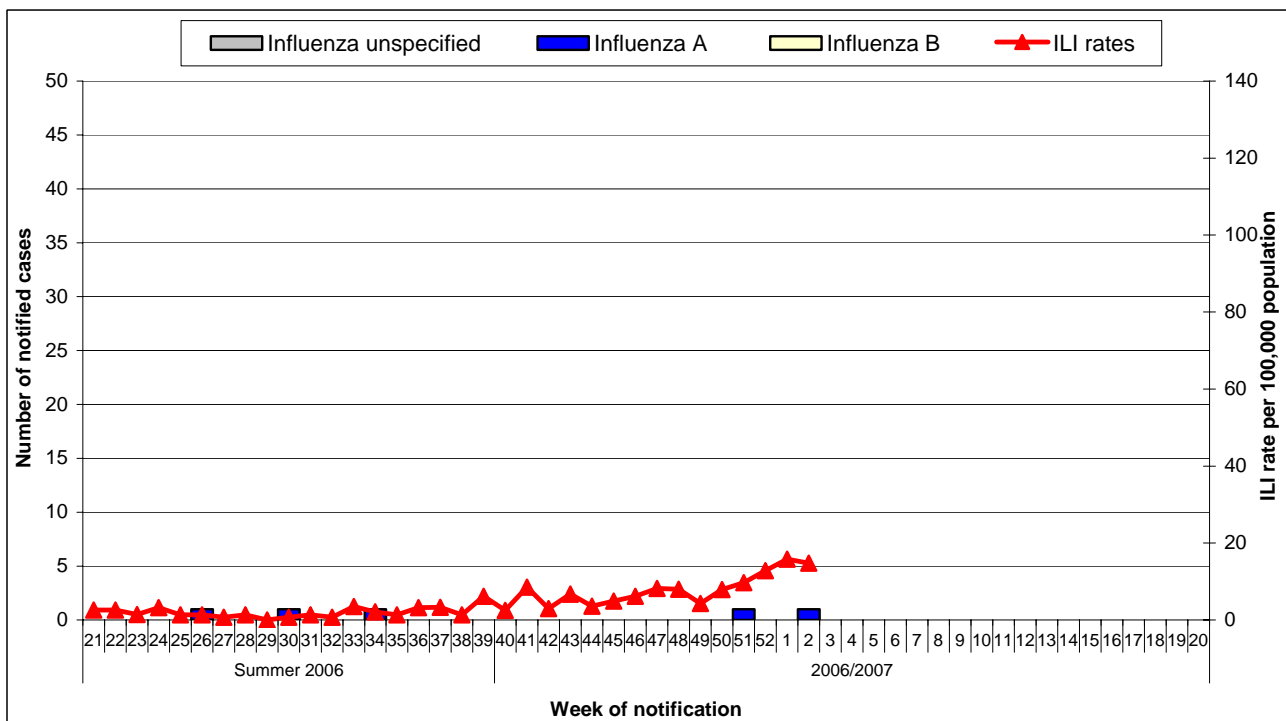


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2006 and the 2006/2007 influenza season.
 *Notification data are provisional and were extracted from [CIDR](#) on the 17/01/2007 at 12.27

Mortality Data

No deaths registered during week 2 2007 were attributed to influenza.

Outbreak Reports

No influenza/ILI outbreaks were reported to HPSC during week 2 2007.

Regional Influenza Activity by HSE-Health 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 influenza/ILI 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. Sporadic influenza activity, based on isolated cases of ILI, was reported by HSE-ER, -MWA, -NEA, -NWA and -SEA. No activity was reported from, HSE-MA, -SA and -WA during week 1 2007 (figure 6).

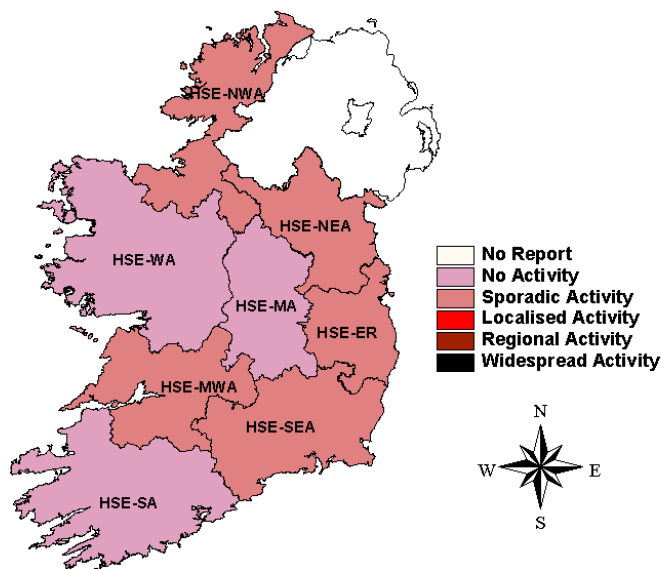


Figure 6: Map of influenza activity by HSE-Health Area during week 1 2007

Influenza Activity in Northern Ireland

One hundred and twenty-one ILI cases and 18 cases of clinical influenza were reported from sentinel GPs in Northern Ireland during week 2 2007, corresponding to a combined rate of 136.4 per 100,000 population, an increase from the updated rate of 94.6 per 100,000 population during week 1. Influenza A viruses were detected in two non-sentinel swabs from hospitalised patients (one child and one adult) and from two sentinel swabs (one infant and one adult). All influenza virus detections typed so far have been influenza A(H3).

<http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

During week 2, clinical influenza activity in England and Scotland increased while the rate in Wales remained very low. ILI episode incidence rates in England have increased to 20.7 per 100,000 in week 2 compared to 17.2 per 100,000 in week 1. This is still below the baseline activity threshold of 30 per 100,000 persons. The GP ILI consultation rate in Wales was 5.13 per 100,000 in week 2, a slight increase compared to 3.02 per 100,000 in week 1 but well below the baseline threshold of 25 per 100,000 population. Only Scotland has increased above the baseline threshold. GP ILI consultation rates in Scotland increased to 158 per 100,000 in week 2 from 140 per 100,000 in week 1. Rates for both weeks exceed the Scottish baseline threshold of 50 consultations per 100,000. Two samples referred to the Centre for Infections Respiratory Virus Unit (RVU), tested positive for RSV during week 2. Both were from community samples. There were 35 influenza A detections during week 2. They were all influenza A(H3) subtype. Thirty were from community sources and five were from hospital sources. There was one influenza B isolate detected from a community source in central England.

<http://www.hpa.org.uk/infections/topics%5Faz/influenza/seasonal/activity0607/flureport.htm>

Influenza Activity in Europe

During week 1 2007, national network levels of influenza-like illness (ILI) and/or acute respiratory infection (ARI) were medium in Greece. In the other 23 countries the intensity was low. So far this season, the consultation rates for ILI and/or ARI have been below the baseline threshold in most countries in Europe. It was well above the national baseline threshold in Greece in week 1 2007. The total number of respiratory specimens collected by sentinel physicians was 463, of which 74 (16%) were positive for influenza virus (all type A). In addition, 82 specimens from non-sentinel sources (e.g. specimens collected for diagnostic purposes in hospitals) tested positive for influenza virus, of which 81 (99%) were influenza A and one (1%) influenza B. Based on subtyping data of all influenza virus detections (N=681; sentinel and non-sentinel data), 467 (69%) were type A unsubtype, 22 (3%) were A(H1), nine (1%) were A(H1N1), 80 (12%) were A(H3), 77 (11%) were A(H3N2) and 26 (4%) were type B. Based on the characterisation data of all influenza virus detections, 122 have been antigenically and/or genetically characterised: 105 were A/Wisconsin/67/2005 (H3N2)-like, eight were A/California/7/2004 (H3)-like [a strain of the A(H3N2) virus that emerged during the 2004-2005 season, circulated during the 2005-2006 season, and is closely related to the A/Wisconsin/67/2005 (H3N2) reference virus], eight were A/New Caledonia/20/99 (H1N1)-like and one was B/Malaysia/2506/2004-like.

<http://www.eiss.org/index.cgi>

Influenza Activity in Canada

During week 1, overall influenza activity in Canada increased slightly from the previous week. Six regions reported localised or widespread activity (5/6 from Ontario) which is an increase from two regions in week 52. Sporadic influenza activity was reported in regions in the West, Ontario, Quebec and Nova Scotia while the rest of the country reported no activity. Note that three of the four Atlantic provinces, Manitoba and the three Territories have reported "no activity" in all of their regions to date this season. In week 1, 4% (130/3078) of the specimens tested for influenza virus were positive, which is similar to the previous week. Of the influenza virus detections to date this season, 99% (776/785) were influenza A viruses. The ILI consultation rate increased to 47 per 1,000 patient visits this week compared to 29 per 1,000 in week 52; however it is still within the expected range for this week. The sentinel response rate was 67%. During week 1, eight new laboratory-confirmed influenza outbreaks were reported: seven in Ontario [three were in a long term care facility (LTCF)] and one (in a LTCF) in Quebec. The percent positive for RSV detections decreased from the previous week but remains high (25%), with the majority of detections coming from Quebec, Ontario and the Prairies. The National Microbiology Laboratory (NML) has characterised 139 influenza viruses for the 2006-2007 influenza season: 64 were A/Wisconsin/67/05(H3N2)-like, 72 were A/New Caledonia/20/1999(H1N1)-like, 2 B/Malaysia/2506/2004-like, and 1 B/Shanghai/361/2002-like. All but the B/Shanghai/361/2002-like strain are included in the composition of the 2006-2007 Canadian influenza vaccine. Of the influenza A viruses characterised, 90% (65/72) of the A(H1N1) viruses were from the West and 89% (57/64) of the A(H3N2) viruses were from Ontario. Note that the proportion of strains characterised as A(H3N2) increased from 36% in the previous week to 46% this week.

<http://www.phac-aspc.gc.ca/fluwatch/index.html>

Influenza Activity in the United States

During week 1, laboratory and outpatient influenza-like illness (ILI) surveillance data indicated a decrease in influenza activity in the United States from week 52 to week 1. Among specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories for influenza, 7.6% were positive. The proportion of visits for ILI may have been influenced by a reduction in routine healthcare visits during the holiday season as has been seen in past seasons. However, ILI remained above baseline for the fourth consecutive week this season. Five states reported widespread influenza activity, 11 states reported regional influenza activity, 15 states reported local influenza activity, 19 states, the District of Columbia and New York City reported sporadic influenza activity and one state reported no influenza activity. The reporting of widespread or regional influenza activity increased from 14 states for week 52 to 16 states for week 1. The percent of deaths due to pneumonia and influenza remained below baseline level.

During week 1, WHO and NREVSS laboratories reported 2,939 specimens tested for influenza viruses, 222 (7.6%) of which were positive: 62 influenza A (H1) viruses, one influenza A (H3) virus, 120 influenza A viruses that were not subtyped, and 39 influenza B viruses. Since October 1, 2006, WHO and NREVSS laboratories have tested a total of 50,666 specimens for influenza viruses and 2,787 (5.5%) were positive. Among the 2,787 influenza viruses, 2,256 (80.9%) were influenza A viruses and 531 (19.1%) were influenza B viruses. Six hundred ninety-five (30.8%) of the 2,256 influenza A viruses have been subtyped: 669 (96.3%) were influenza A (H1) viruses and 26 (3.7%) were influenza A (H3) viruses.

<http://www.cdc.gov/flu/>

Influenza Activity Worldwide

During week 1 2007 the following influenza isolates were reported; China 19 (1 A unsubtype, 6 A(H1), 8 A(H3) and 4 B) and Japan 3 A(H3).

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

Avian Influenza

As of the 17th January 2007, 267 confirmed human cases and 161 (60%) deaths from avian influenza A (H5N1) have been reported to the WHO from Azerbaijan, Cambodia, China, Djibouti, Egypt, Indonesia, Iraq, Thailand, Turkey and Vietnam.

The Ministry of Health of Indonesia has confirmed the death of a 22-year-old woman from Tangerang City, Banten Province. The woman, whose infection was announced on 12 January, died later that day. The 14 year old boy from West Jakarta whose infection was also announced on 9 January, died on 10 January after being hospitalised. Of the 79 cases confirmed to date in Indonesia, 61 (77%) have been fatal.

The Ministry of Health of Indonesia also confirmed two additional cases of human infection of H5N1 avian influenza on 12 January 2007. A 22-year-old woman from South Jakarta who developed symptoms on 6 January 2007 and died on 12 January 2007. Investigations into the source of her exposure found reports of bird deaths near her home in the days prior to symptom onset. The 18-year-old son of the 37-year-old woman (whose infection was announced on 9 January) from Tangerang City, Banten Province has now also been confirmed as infected with H5N1 avian influenza. He remains in hospital in a critical condition. Investigations into the source of his infection indicate similar environmental exposure as his mother.

Further information on avian influenza is available on the following websites:

WHO http://www.who.int/csr/disease/avian_influenza/en/

HPSC <http://www.ndsc.ie/hpsc/A-Z/Respiratory/AvianInfluenza/>

ECDC <http://www.ecdc.eu.int/>

Northern Hemisphere Influenza Vaccine for the 2006/2007 Season

The members of the WHO Collaborating Centres on Influenza recommended that influenza vaccines for the 2006/2007 influenza season in the Northern Hemisphere contain the following strains:

- an A/New Caledonia/20/99(H1N1)-like virus;
- an A/Wisconsin/67/2005 (H3N2)-like virus^a;
- a B/Malaysia/2506/2004-like virus^b

Candidate vaccine viruses include:

^aA/Wisconsin/67/2005 (H3N2) and A/Hiroshima/52/2005

^bB/Malaysia/2506/2004 virus and B/Ohio/1/2005

<http://www.who.int/csr/disease/influenza/recommendations2007north/en/index.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

This report was produced by Sarah Jackson & Dr. Joan O'Donnell, HPSC