

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 2007 (5th to 11th February 2007)

Summary

During week 6 2007, influenza activity was at medium levels in Ireland, with 81 influenza-like illness (ILI) cases reported by sentinel GPs. Seven specimens tested by the NVRL were positive for influenza A virus during week 6.

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-seven 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

Eighty-one ILI cases were reported from sentinel GPs during week 6 2007, corresponding to an ILI consultation rate of 53.1 per 100,000 population, an increase from the updated rate of 41.2 in week 5 (figure 1).

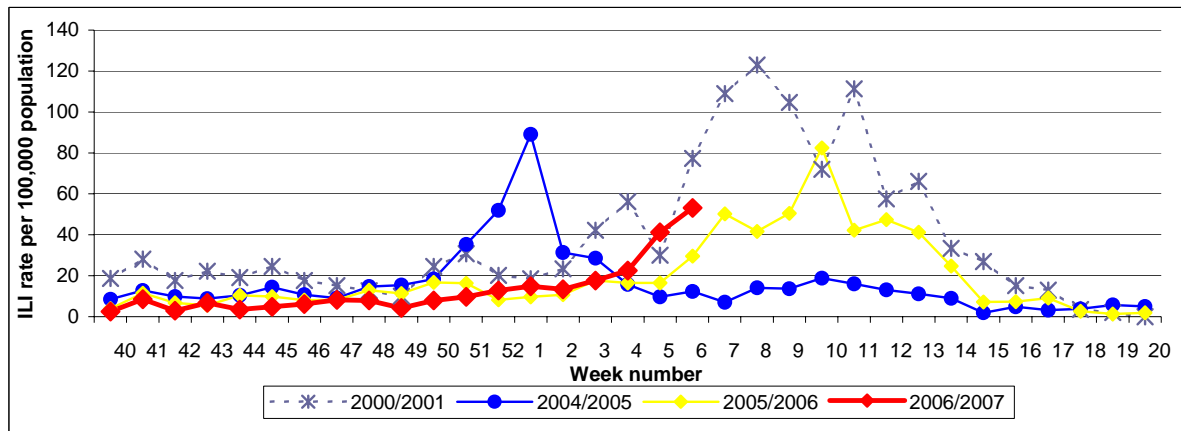


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2004/2005, 2005/2006 & 2006/2007 influenza seasons.

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

Results (continued)

One case was in the 0-4 year age group (9.2 per 100,000 population), seven cases in 5-14 year age group (32.7 per 100,000 population), 67 cases were in the 15-64 year age group (64.8 per 100,000 population) and six cases were in the 65 years or older age group (35.3 per 100,000 population) as shown in figure 2. Forty-one of the 47 (87%) sentinel general practices reported during week 6 2007, with 26 reporting ILI.

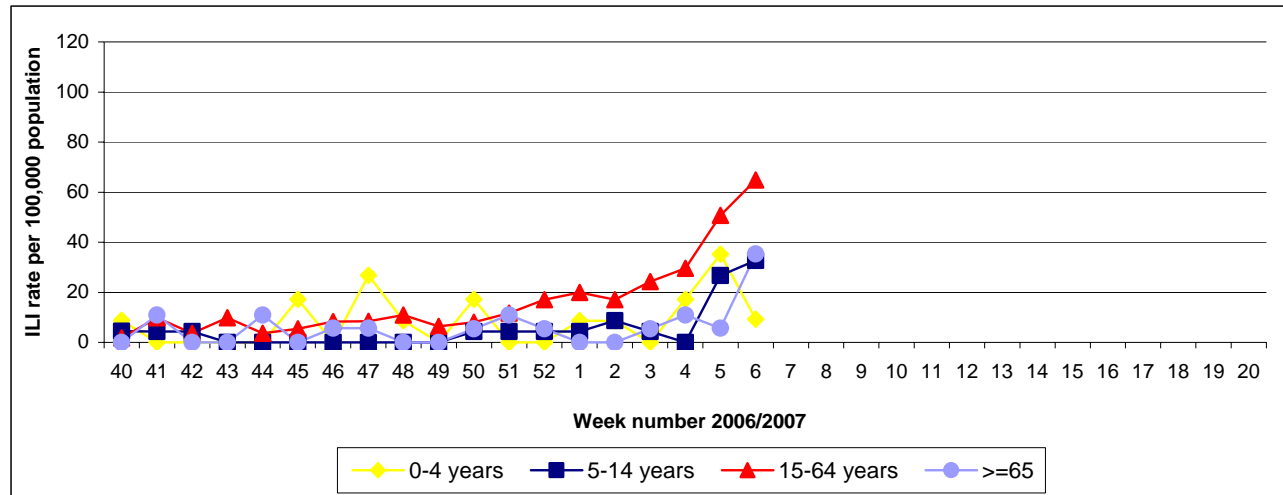


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2006/2007 influenza season. *Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is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

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested 23 specimens taken by sentinel GPs during week 6 2007, four of which were positive for influenza A unsubtype. The NVRL also tested 42 non-sentinel specimens taken during week 6 2007, mainly from hospitalised paediatric cases. Three non-sentinel specimens were positive for respiratory syncytial virus (RSV) and three were positive for influenza A unsubtype (table 1). During the 2006/2007 season to date, 56 influenza A viruses have been detected. Of the 56, two have been subtyped as A(H1) and 14 have been subtyped as A(H3). Influenza positive specimens have been detected in all of the eight HSE-Areas so far this season (table 2). Table 3 shows influenza positive specimens detected by the NVRL by age group in years for week 6 2007 and for the 2006/2007 season to date. 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 6 2007 and the 2006/2007 season to date

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
6 2007	Sentinel	23	4	17.4	4	0	NA
	Non-Sentinel	42	3	7.1	3	0	3
	Total	65	7	10.8	7	0	3
40 2006 - 6 2007	Sentinel	192	39	20.3	39	0	NA
	Non-Sentinel	1184	17	1.4	17	0	301
	Total	1376	56	4.1	56	0	301

*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 for week 6 2007 and the 2006/2007 season to date

	Week 6 2007			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	4	0	4	19	0	19
HSE-MA	0	0	0	2	0	2
HSE-MWA	0	0	0	6	0	6
HSE-NEA	0	0	0	2	0	2
HSE-NWA	0	0	0	9	0	9
HSE-SEA	1	0	1	4	0	4
HSE-SA	1	0	1	8	0	8
HSE-WA	1	0	1	6	0	6
Total	7	0	7	56	0	56

* 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) for week 6 2007 and the 2006/2007 season to date

	Week 6 2007			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
0-4 years	0	0	0	14	0	14
5-14 years	2	0	2	3	0	3
15-64 years	5	0	5	38	0	38
65 years and older	0	0	0	0	0	0
Age group unknown	0	0	0	1	0	1
Total	7	0	7	56	0	56

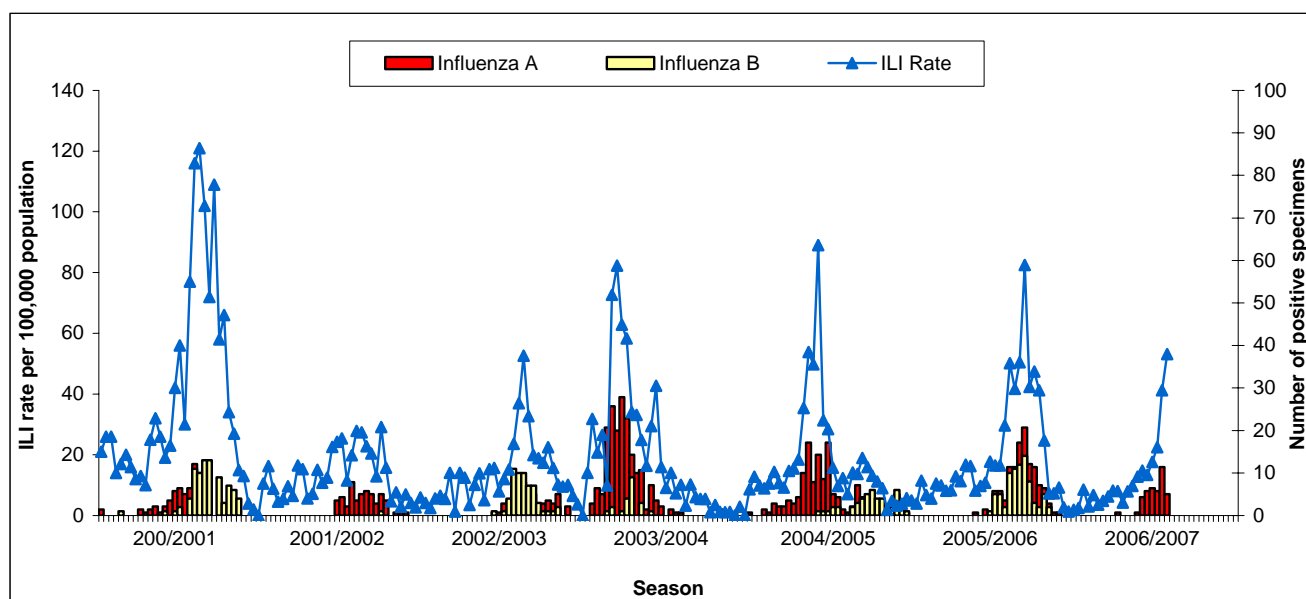


Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005, 2005/2006 & 2006/2007 seasons.

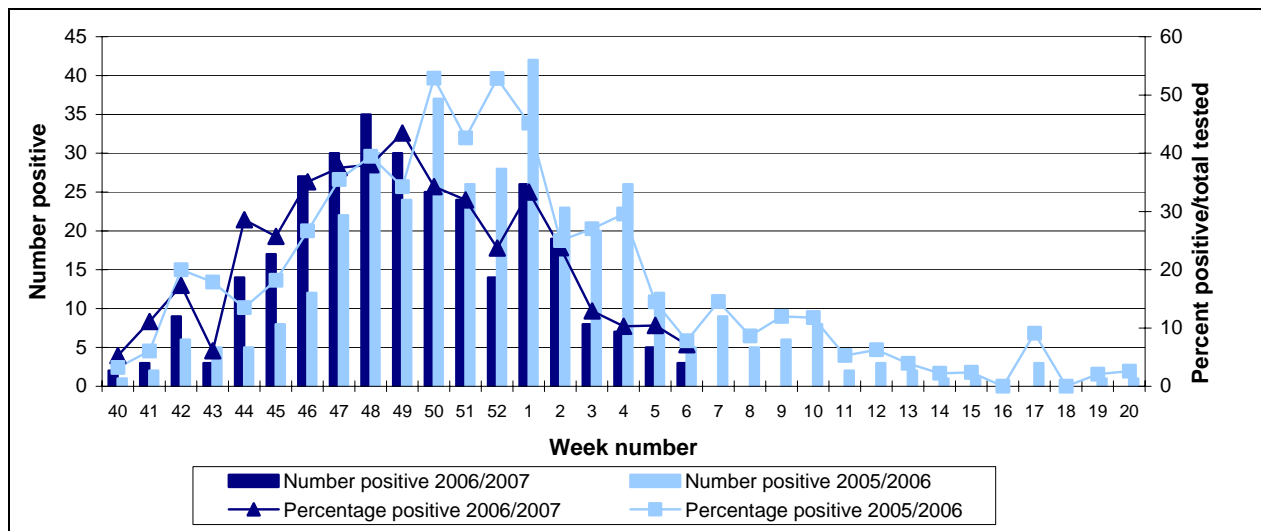


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2006/2007 influenza seasons.

Weekly Influenza Notifications

Fourteen influenza cases were notified to HPSC during week 6 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.

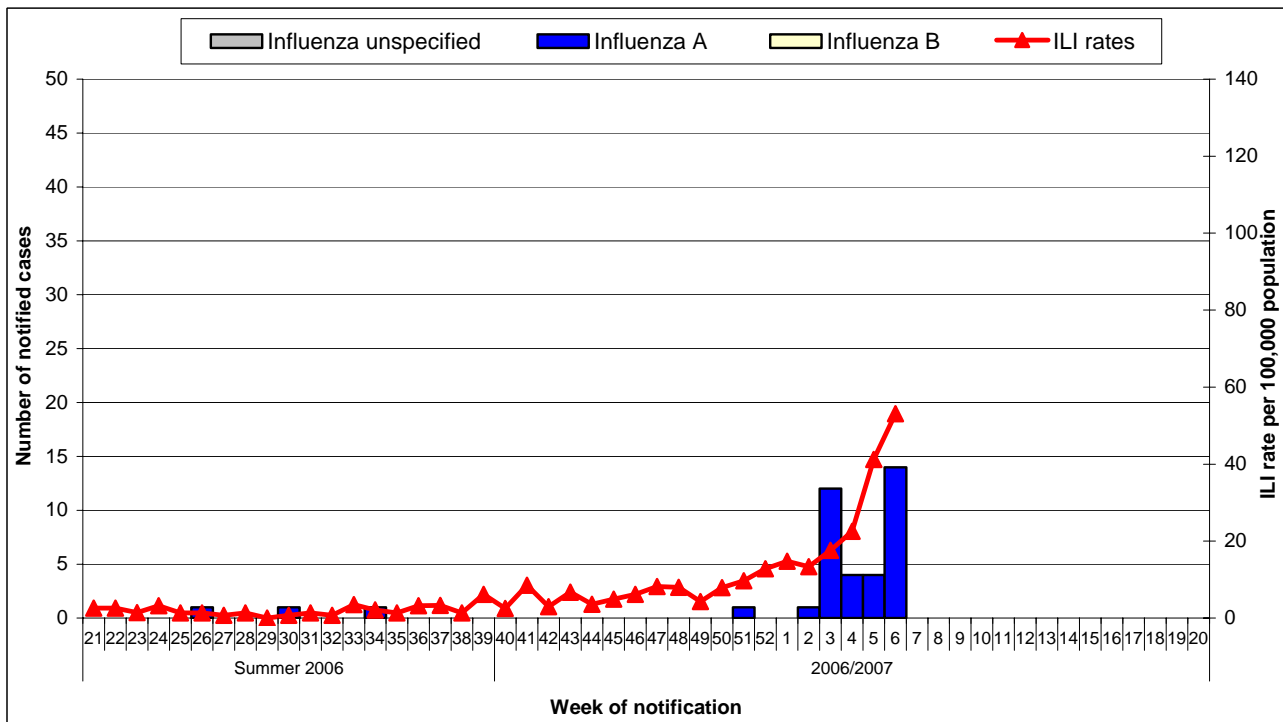


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2006 and the 2006/2007 influenza season.

*Notification data are provisional and were extracted from [CIDR](#) on the 14/02/2007 at 16.05

Mortality Data

No influenza associated deaths were registered during week 6 2007.

Outbreak Reports

No influenza/ILI outbreaks were reported to HPSC during week 6 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. During week 5, sporadic influenza activity based on isolated cases of ILI and influenza virus isolations was reported by HSE-ER, -MA, -MWA, -NEA, -NWA, -SEA and -SA. Localised activity was reported from HSE-WA during week 5 2007 (figure 6). During week 5, elevated levels of absenteeism were reported by one secondary school in HSE-NWA (due to respiratory illness) and one primary school in HSE-WA.

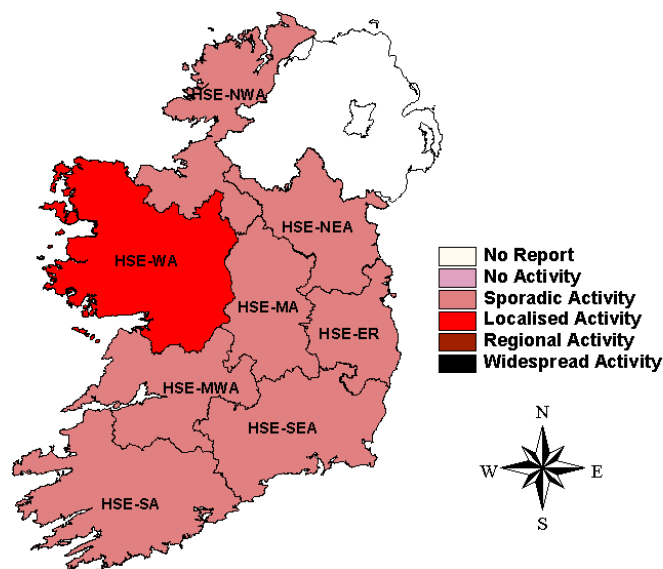


Figure 6: Map of influenza activity by HSE-Health Area during week 5 2007

Influenza Activity in Northern Ireland

One hundred and seventy-five ILI cases and 27 cases of clinical influenza were reported from sentinel GPs in Northern Ireland during week 6 2007, corresponding to a combined rate of 212.5 per 100,000 population, an increase from the updated rate of 204.2 per 100,000 population during week 5. Influenza A viruses were detected in seven non-sentinel swabs from hospitalised patients and from seven sentinel swabs.

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

Influenza Activity in England, Scotland & Wales

During week 6, clinical influenza activity increased in England but decreased in Wales and Scotland. Activity in England continued to increase above the baseline threshold while Scottish activity returned to baseline levels. Activity in Wales remains at baseline levels. Eighty-four samples referred to the Centre for Infections' Respiratory Virus Unit (RVU) tested positive for influenza A and one for influenza B.

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

Influenza Activity in Europe

During week 5 2007, the national network level of ILI and/or acute respiratory infection (ARI) was high in Luxembourg, medium in 19 countries and low in nine countries. In 20 countries the consultation rate for ILI and/or ARI showed a clear increase over that of week 4. For the geographical spread indicator, widespread activity was reported in nine countries, all of which were located in the central and southern parts of Europe, with the exception of Norway. Romania and Slovakia reported regional activity, seven countries local, eight sporadic and three no activity. In most countries the consultation rates for ILI/ARI started to increase around mid-January. Increased rates were reported a little earlier in Greece but the rate is on the decline after it peaked in week 3. By week 5, the total number of countries who reported increased levels of ILI/ARI this winter was 21. The total number of respiratory specimens collected by sentinel physicians was 1865, of which 645 (35%) were positive for influenza virus. Of these, 625 (97%) specimens tested positive for influenza A virus and 20 (3%) for influenza B. In addition, 456 specimens from non-sentinel sources (e.g. specimens collected for diagnostic purposes in hospitals) tested positive for influenza virus, of which 444 (97%) were influenza A and 12 (3%) influenza B. In Romania 25 (55%) of 45 influenza virus detections were influenza B. Based on subtyping data of all influenza virus detections (N=4396; sentinel and non-sentinel data), 2564 (58%) were type A untyped, 708 (16%) type A(H3), 923 (21%) were A(H3N2), 52 (1%) type A(H1), 54 (1%) A(H1N1) and 95 (2%) type B. Based on antigenic and/or genetic characterisation of 634 viruses, 429 were A/Wisconsin/67/2005 (H3N2)-like; 136 A/California/7/2004 (H3N2)-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]; 38 A/New Caledonia/20/99 (H1N1)-like; 30 B/Malaysia/2506/2004-like (the B/Victoria/2/87 lineage); and one B/Jiangsu/10/2003-like (the B/Yamagata/16/88 lineage).

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

Influenza Activity in Canada

During week 5, influenza activity in Canada continued to increase with all indicators of influenza activity having increased from the previous week. Widespread influenza activity was reported in Toronto, Ontario and in the Interior and Vancouver Island regions of British Columbia, while localised activity was reported in 17 other regions across the country (mostly in Ontario, British Columbia and Alberta). Sporadic influenza activity was reported in various regions across Canada, while the rest reported no activity. In week 5, the number of specimens that tested positive for influenza virus was 11.1% (385/3,460). Of the influenza virus detections to date this season, 97% (1,827/1,879) were influenza A viruses. In week 5, the ILI consultation rate was 27 per 1,000 patient visits, which is slightly below the expected range for this week. The sentinel response rate was 78%. During week 5, 35 new outbreaks were reported; nine influenza outbreaks in long term care facilities (mostly from British Columbia and Ontario), one in a hospital, two in other types of facilities and 23 outbreaks of ILI in schools (18 from British Columbia). The National Microbiology Laboratory (NML) has characterised 279 influenza viruses for the 2006-2007 influenza season: 107 A/New Caledonia/20/1999(H1N1)-like, 153 A/Wisconsin/67/05(H3N2)-like, one A(H1N2) subtype, 4 B/Malaysia/2506/2004-like, and 14 B/Shanghai/361/2002-like. All but the A(H1N2) sub-type and the B/Shanghai/361/2002-like strain are included in the composition of the 2006-2007 Canadian influenza vaccine.

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

Influenza Activity in the United States

During week 5, influenza activity continued to increase in the United States. Among specimens tested by the U.S. World Health Organization (WHO) and the National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories for influenza, 19.6% were positive. ILI data was above baseline for week 5. Nine states reported widespread influenza activity, 19 states reported regional influenza activity, 14 states and New York City reported local influenza activity, seven states and the District of Columbia reported sporadic influenza activity and one state did not report. The reporting of widespread or regional influenza activity increased from 22 states for week 4 to 28 states for week 5. The percent of deaths due to pneumonia and influenza remained below baseline level. During week 5, WHO and NREVSS laboratories reported 4,180 specimens tested for influenza viruses, 820 (19.6%) of which were positive; 128 influenza A (H1) viruses, 21 influenza A (H3) viruses, 578 influenza A viruses that were not subtyped and 93 influenza B viruses. Since October 1 2006, WHO and NREVSS laboratories have tested a total of 83,332 specimens for influenza viruses and 6,244 (7.5%) were positive. Among the 6,244 influenza viruses, 5,161 (82.6%) were influenza A viruses and 1,083 (17.4%) were influenza B viruses. One thousand six hundred and ninety-six (32.9%) of the 5,161 influenza A viruses have been subtyped: 1,507 (88.9%) were influenza A (H1) viruses and 189 (11.1%) were influenza A (H3) viruses.

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

Influenza Activity Worldwide

During week 5 2007 the following influenza isolates were reported; China 126 (4 A(H1), 97 A(H3), 11 A unsubtype and 14 B), Japan 45 (4 A(H1), 27 A(H3) and 14 B) and Tunisia 8 (3 A(H1), 3 A(H3) and 2 influenza unspecified). China and Mongolia reported sporadic levels of ILI while Tunisia reported a regional outbreak of ILI.

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

Avian Influenza

On 13th February 2007, the deputy chief veterinarian, Veterinary Laboratory Agency (VLA) UK, confirmed that the laboratory analysis of the Suffolk and Hungary H5N1 avian influenza viruses is now complete. The VLA analysis has revealed a very high similarity (99.96%) between the H5N1 viruses found in Suffolk and the Hungarian outbreaks at the whole genome level. These results indicate that the viruses are essentially identical. No further cases of bird flu have been found beyond those on the infected premises near Lowestoft, UK.

Human Cases of Avian Influenza

As of the 15th February 2007, 272 confirmed human cases and 166 (61%) deaths from avian influenza A (H5N1) have been reported to the WHO from Azerbaijan, Cambodia, China, Djibouti, Egypt, Indonesia, Iraq, Thailand, Turkey and Vietnam.

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