Influenza Weekly Surveillance Report

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

NATIONAL VIRUS REFERENCE LABORATORY

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 4 2006 (23rd to 29th Jan 2006)

Summary

During week 4 2006, influenza activity remained at low levels in Ireland, with 21 influenza-like illness cases reported by sentinel GPs. Six positive influenza specimens (3 A & 3 B) were detected by the NVRL during week 4. Influenza activity in Europe remains low but there are signs that it is gradually increasing.

Iraq has become the seventh country to report human H5N1 infection in the current outbreak. Further information on avian influenza is available on the HPSC website www.hpsc.ie.

Background

This is the sixth 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-three 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 38^0C 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. This report includes data on ILI cases reported by sentinel GPs, influenza test results from the NVRL, influenza notifications, registered deaths attributed to influenza reported from the General Register's Office (GRO), regional influenza activity reported by the Departments of Public Health and sentinel school absenteeism & hospital admissions data.

Results

Clinical Data

During week 4 2006, 21 ILI cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 16.2 per 100,000 population, a slight decrease from the updated rate of 17.7 per 100,000 during week 3 2006 (figure 1).

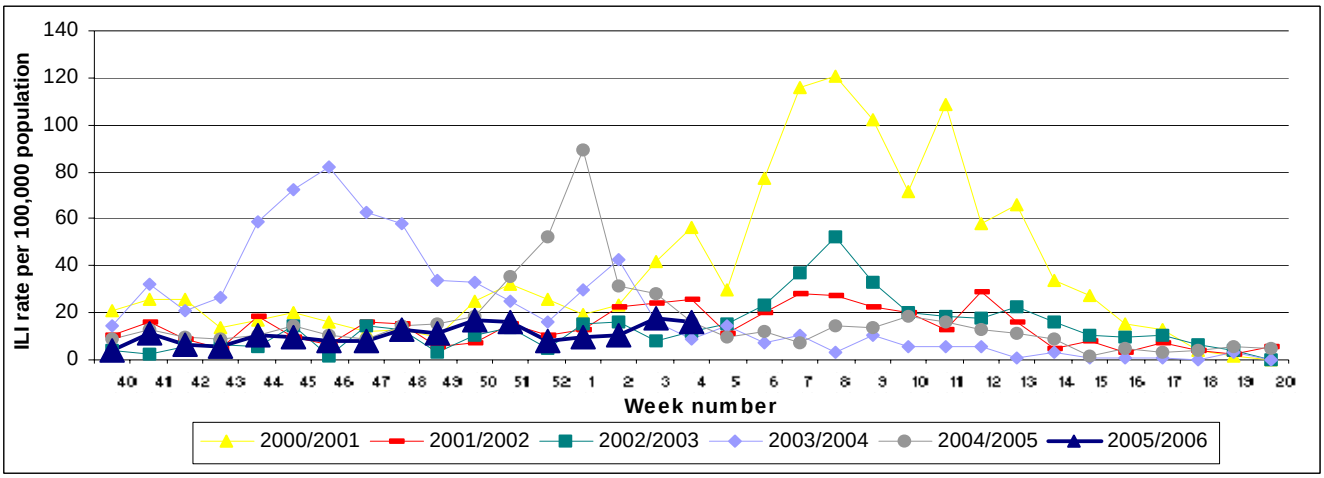

Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005 & 2005/2006 influenza seasons.

During week 4 2006, ILI rates peaked in those aged 0-4 years, with two cases reported, corresponding to an ILI rate of 21.8 per 100,000 population. Two ILI cases were reported in the 5-14 year age group (11.0 per 100,000 population), 16 in the 15-64 year age group (18.3 per 100,000 population) and one ILI case was reported in those aged 65 years or older (18.3 per 100,000 population) during week 4 2006 (figure 2). Thirty-eight of 43 (88.4%) sentinel general practices reported during week 4 2006, with nine reporting ILI.

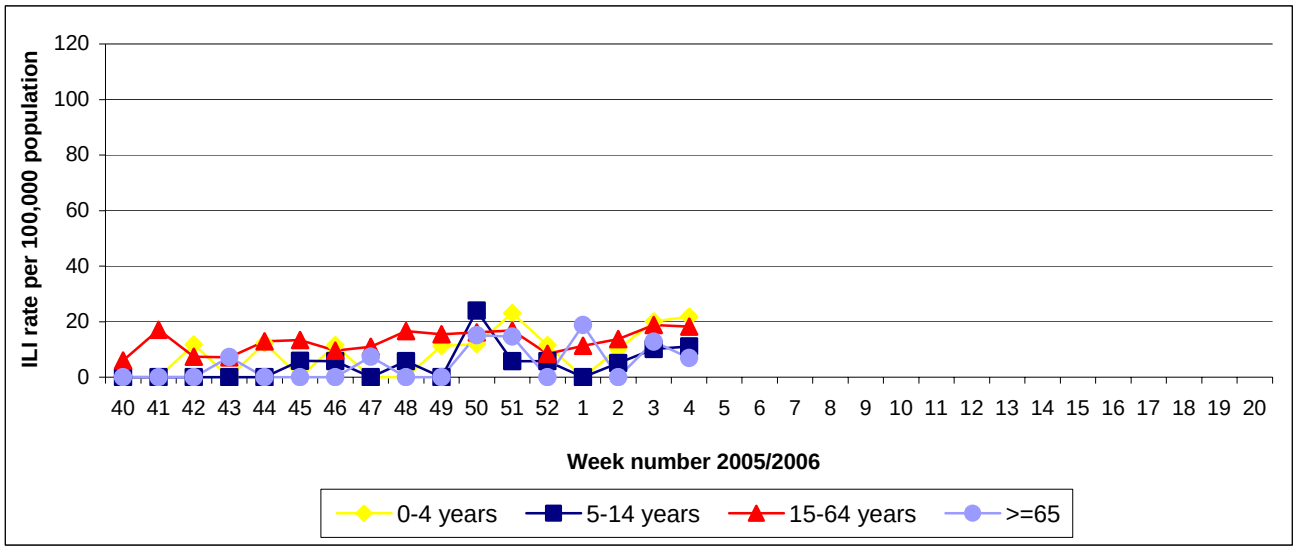

Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2005/2006 influenza season.
**Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is similar to the national age distribution.*

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested ten specimens taken by sentinel GPs during week 4 2006, three were positive for influenza: two influenza A (unsubtyped) and one influenza B. The NVRL also tested 82 non-sentinel specimens, taken during week 4 2006, mainly from hospitalised paediatric cases, one was positive for influenza A and two were positive for influenza B. To date this season, the NVRL has detected ten positive influenza specimens, six influenza A (3 A H3 & 3 A unsubtyped) and four influenza B (table 1). To date this season, influenza positive specimens have been detected in the Eastern Region (1 A & 3 B), Mid-Western Area (1 B), North-Western Area (4 A) and Southern Area (1 A) (table 2).

Figure 3 compares the ILI consultation rates by season and the number of positive influenza specimens tested by the NVRL. Twenty-three non-sentinel specimens tested positive for respiratory syncytial virus (RSV) during week 4 2006 (figure 4). The percentage of RSV positive respiratory specimens peaked in week 50 2005. RSV causes respiratory symptoms similar to influenza, and is a frequent cause of bronchiolitis in children.

Table 1: Total number of sentinel and non-sentinel* respiratory specimens and positive results for week 4 2006 and the 2005/2006 season to date.

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
4 2006	Sentinel	10	3	30.0	2	1	NA
	Non-Sentinel	82	3	3.7	1	2	23
	Total	**92**	**6**	**6.5**	**3**	**3**	**23**
40 2005 – 4 2006	Sentinel	130	4	3.1	3	1	NA
	Non-Sentinel	981	6	0.6	3	3	315
	Total	**1111**	**10**	**0.9**	**6**	**4**	**315**

**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 4 2006 and the 2005/2006 season to date

	Week 4 2006			Season to date		
	Flu A	**Flu B**	**Total**	**Flu A**	**Flu B**	**Total**
HSE-ER	0	2	2	1	3	**4**
HSE-MA	0	0	0	0	0	**0**
HSE-MWA	0	1	1	0	1	**1**
HSE-NEA	0	0	0	0	0	**0**
HSE-NWA	2	0	2	4	0	**4**
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	**3**	**3**	**6**	**6**	**4**	**10**

** 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.*

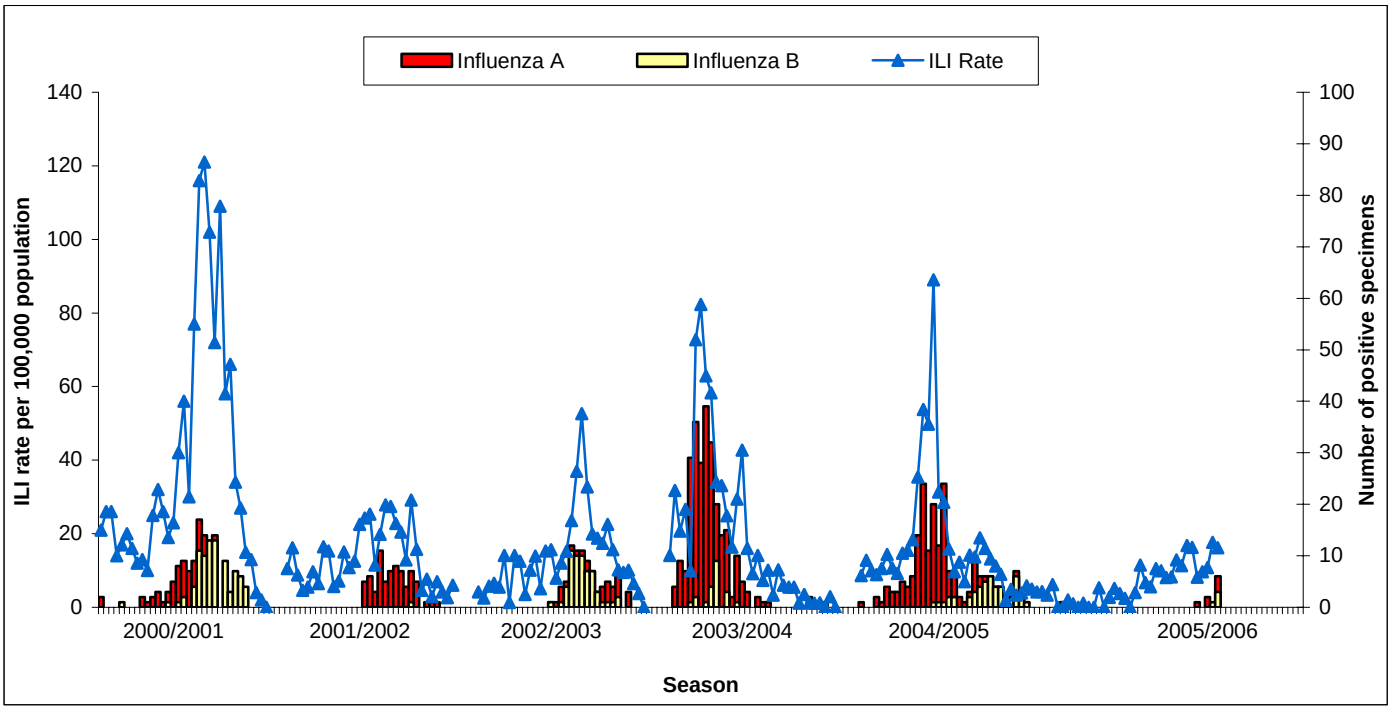

Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

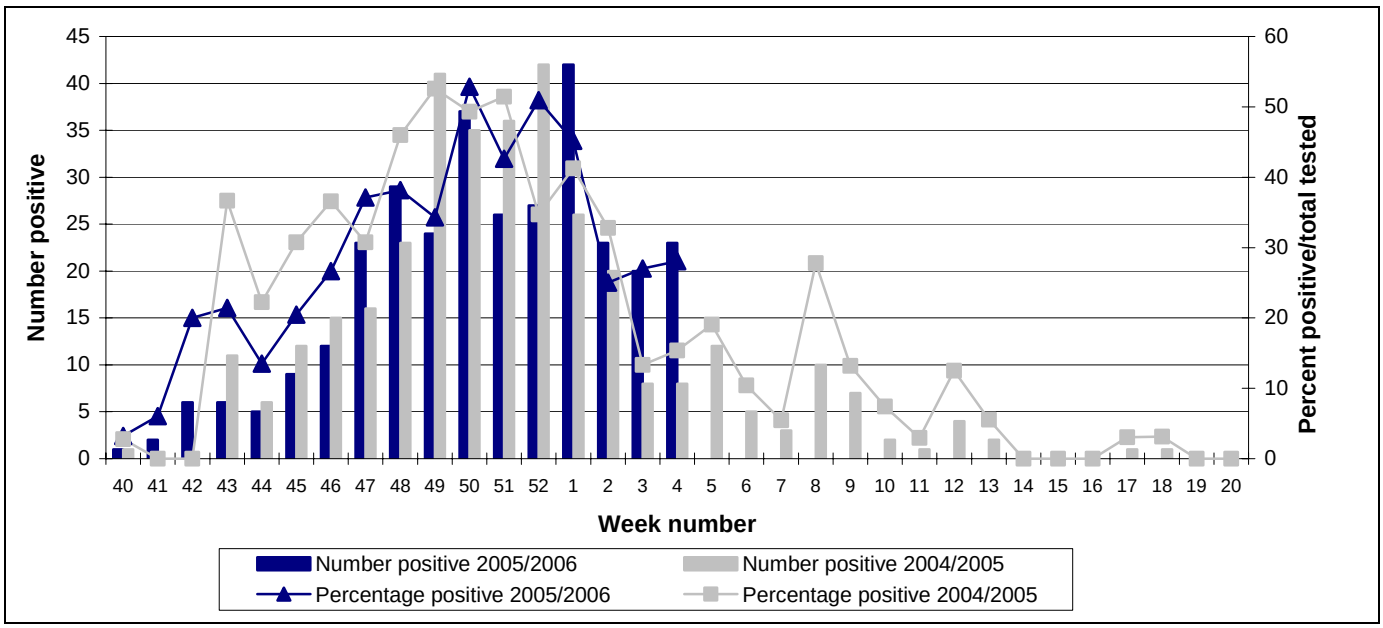

Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2004/2005 influenza seasons.

Weekly Influenza Notifications

One influenza A case was notified to HPSC from HSE-NWA during week 3 2005. It should be noted that influenza notifications reported through the weekly notification system may also be reported by the NVRL. Influenza cases notified to HPSC during the summer of 2005 and during the 2005/2006 influenza season are shown in figure 5, and compared to ILI consultation rates.

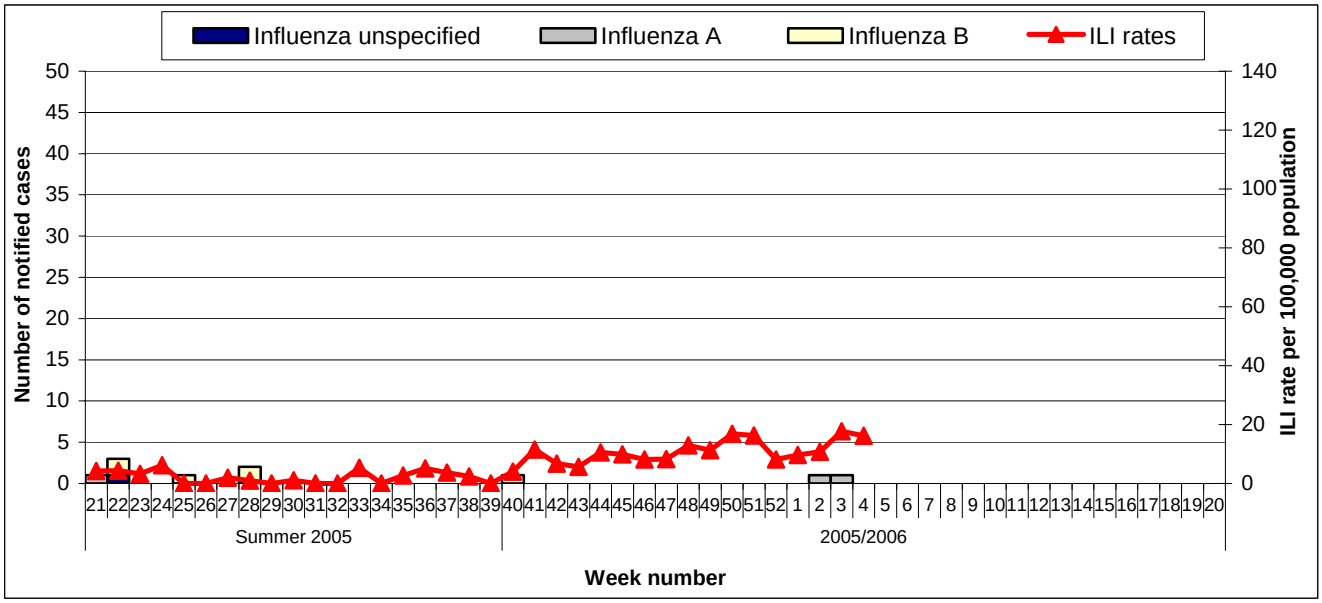

Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2005 and the 2005/2006 influenza season. **Notification data are provisional and were extracted from CIDR on the 01/02/2006 at 12.00 GMT.*

Mortality Data

No deaths registered with the GRO to date this season were attributed to influenza.

Outbreak Reports

No influenza/ILI outbreaks were reported to HPSC to date this season.

Hospital Admissions

Each Department of Public Health has established one sentinel hospital in each HSE-Health Area, to report total hospital admissions, accident and emergency admissions and respiratory admissions data on a weekly basis. There were no increases in hospital respiratory admissions reported to HPSC for weeks 3 or 4 2006. A small increase in total hospital admissions in a sentinel hospital in HSE-MWA was reported for week 4 2006.

School Absenteeism

Sentinel primary and secondary schools have been established in each HSE-Health Area in close proximity to the sentinel GPs, reporting absenteeism data on a weekly basis. No significant increases in sentinel schools were reported to HPSC during week 3 2006.

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. ILI activity increased significantly in HSE-MWA during week 4, with activity remaining at low levels in all other HSE-Health Areas. During week 3, seven HSE-Health Areas/Region reported sporadic influenza activity (figure 6), based on isolated cases of ILI, NVRL laboratory confirmed cases and influenza notifications.

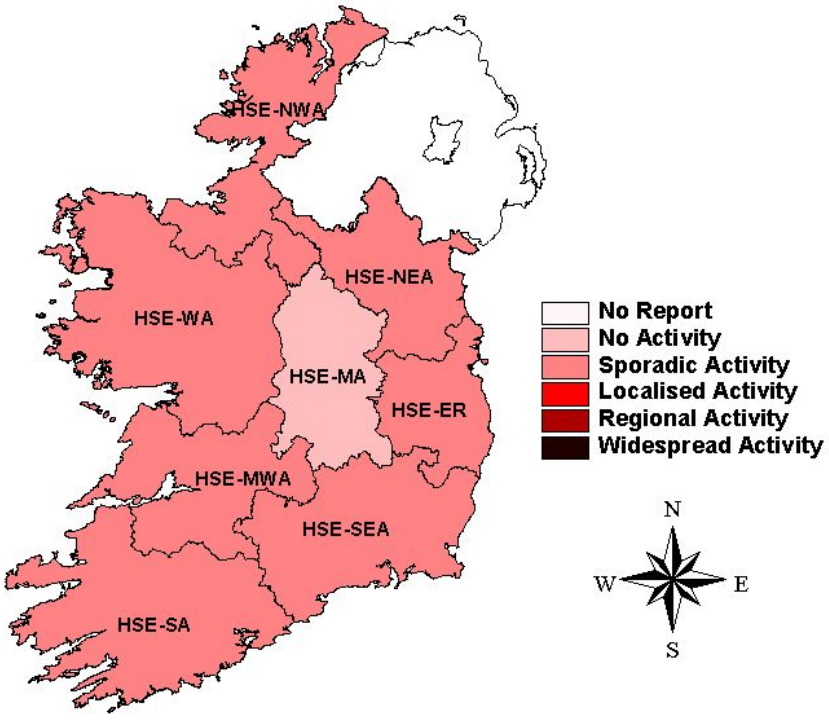

Figure 6: Map of influenza activity by HSE-Health Area during week 3 2006

Influenza Activity in Northern Ireland

Seventy-one cases of ILI and two cases of clinical influenza were reported by sentinel GPs in Northern Ireland during week 4 2006, corresponding to a combined rate of 64.5 per 100,000 population, an increase from the

updated rate of 39.6 per 100,000 in week 3 2006. Two sentinel specimens were tested for influenza virus during week 3, and one was positive for influenza B. Sixty-seven non-sentinel specimens were tested during week 4, three were positive for influenza A (unsubtyped) and one was positive for influenza B. All four cases were hospitalised children aged 1 year or under. http://www.cdscni.org.uk

Influenza Activity in England, Scotland & Wales

Influenza activity remained within baseline levels in the United Kingdom during weeks 3 and 4 2006. GP consultations for ILI remained at similar levels to previous weeks with the highest rates recorded amongst those aged between 5-14 years where the rate increased from 24 per 100 000 in week 3 to 41.8 per 100 000 in week 4 2006. An increasing number of isolates of influenza B virus have been confirmed over the last two weeks, from patients with ILI in the community and children in outbreaks in schools. The school outbreaks have occurred in all parts of the country and are associated with high attack rates (averaging about 25%) and a mild self limiting illness. The isolates are mainly B/Hong Kong/330/2001-like which is drifted from the B/Shanghai/361/2002-like strain contained in the vaccine. It is, however, likely to be close enough to the vaccine strain for immunisation to provide worthwhile protection. http://www.hpa.org.uk/infections/topics_az/influenza/seasonal/flureports0506.htm

Influenza Activity in Europe

Influenza activity in Europe remains low but there are signs that it is gradually increasing. During week 3 2006, France reported localised influenza activity, 15 countries reported sporadic activity and the remaining 11 countries reported no influenza activity to the European Influenza Surveillance Scheme (EISS). The total number of respiratory specimens collected by sentinel physicians in week 3 2006 was 697, of which 50 (7.2%) were positive for influenza virus: 28 (56%) B and 22 (44%) A. In addition, 1603 non-sentinel specimens were analysed and 87 (5.4%) tested positive for influenza virus: 61 (70%) B and 26 (30%) A. Most of the non-sentinel B viruses reported in week 3 2006 were detected in Scotland (79%). Based on (sub)typing data of all influenza virus detections from sentinel and non-sentinel sources up to week 3 2006 (N=592), 376 (64%) were influenza B and 216 (36%) were influenza A. Of the total influenza A virus detections (N=216), 149 (69%) were influenza A unsubtyped, 40 (19%) were A(H3) [of which 18 were A(H3N2)] and 27 (13%) were A(H1) [of which eight were A(H1N1)]. Based on the characterisation data of all influenza virus detections up to week 3: 26 were A/New Caledonia/20/99 (H1N1)-like, 12 were A/California/7/2004 (H3N2)-like, 48 were B/Malaysia/2506/2004-like (B/Victoria/2/87-lineage) and 6 were B/Jiangsu/10/2003-like (B/Jiangsu/10/2003 is a B/Shanghai/361/2002-like virus from the B/Yamagata/16/88-lineage and is currently used in the vaccine). Up to week 3 2006, no human cases of influenza A (H5N1) have been reported in the 28 countries participating in EISS, which does not include Turkey. http://www.eiss.org/index.cgi

Influenza Activity in Canada

During week 3 2006, widespread influenza activity was reported in interior British Columbia and localised activity was reported in nine influenza surveillance regions: three in British Columbia, three in Alberta, two in Ontario and one in Newfoundland. Sporadic activity was reported in the Yukon and parts of British Columbia, Saskatchewan, Ontario and Quebec. The ILI consultation rate was calculated as 18 per 1000 patient visits in week 3 2006, which is below the expected range for this week. During week 3 2006, the Public Health Agency of Canada received 2316 reports of laboratory tests for influenza, with 42 A and 45 B detections. To date this season, 100% of the influenza A strains characterised have matched those included in the 2005/2006 Canadian vaccine. However, only 6% of the influenza B characterisations have matched the current vaccine strain. The remaining 94% of the influenza B strains characterised have been B/Hong Kong/330/2001-like viruses, which belong to a separate lineage of viruses not covered by this year's vaccine. http://www.phac-aspc.gc.ca/fluwatch/index.html

Influenza Activity in the United States

During week 3 2006, the proportion of patient visits to sentinel providers for ILI was above the national baseline. The proportion of deaths attributed to pneumonia and influenza was below the baseline level. Five states reported widespread influenza activity; 23 states and New York City reported regional influenza activity; 9 states and the District of Columbia reported localised influenza activity; and 13 states reported sporadic influenza activity. During week 3, WHO and NREVSS laboratories reported 2,283 specimens tested for influenza viruses, 247 (10.8%) of which were positive: 81 A (H3N2), 159 A unsubtyped and 7 B. Of the 132 influenza A (H3N2) viruses characterised this season, 112 were A/California/07/2004-like (the A (H3N2) 2005/2006 vaccine component), and 20 showed reduced titers with antisera produced against A/California/07/2004. The hemagglutinin protein of one influenza A (H1) virus was similar antigenically to the hemagglutinin of the vaccine strain. Influenza B viruses currently circulating can be divided into two antigenically distinct lineages represented by B/Yamagata/16/88 and

B/Victoria/2/87 viruses. Eight of the influenza B viruses characterised belong to the B/Yamagata lineage. One was similar to B/Shanghai/361/2002, the recommended influenza B 2005/2006 vaccine component, and 7 were characterised as B/Florida/07/2004-like. B/Florida/07/2004 is a minor antigenic variant of B/Shanghai/361/2002. Three influenza B viruses were identified as belonging to the B/Victoria lineage. http://www.cdc.gov/flu/

Influenza Activity Worldwide

During week 3 2006, regional influenza activity was reported in Tunisia (9 A H1 & 1 B). Sporadic influenza activity was reported in Chile (1 A unsubtyped), China (24 A H1, 7 A H3, 3 A unsubtyped & 39 B), Israel (2 A unsubtyped) and Thailand (3 A H3 and 1 B) during week 3 2006. No influenza activity was reported in Argentina. Ten influenza A H1 and 55 A H3 positive specimens were detected in Japan during week 3 2006.
http://gamapserver.who.int/GlobalAtlas/home.asp

Avian Influenza

The Ministry of Health in Iraq has confirmed the country's first case of human infection with the H5N1 avian influenza virus. Iraq is the seventh country to report human H5N1 infection in the current outbreak. The first human case occurred in Viet Nam in December 2003.

A WHO collaborating laboratory in the United Kingdom has now confirmed 12 of the 21 cases of H5N1 avian influenza previously announced by the Turkish Ministry of Health. All four fatalities are among the 12 confirmed cases. Samples from the remaining nine patients, confirmed as H5 positive in the Ankara laboratory, are undergoing further joint investigation by the Ankara and UK laboratories.

Further information on avian influenza is available on the following websites:
WHO http://www.who.int/csr/disease/avian_influenza/en/
HPSC http://www.hpsc.ie/A-Z/Respiratory/AvianInfluenza/
ECDC http://www.ecdc.eu.int/

Northern Hemisphere Influenza Vaccine for the 2005/2006 Season

The members of the WHO Collaborating Centres on Influenza recommended that influenza vaccines for the 2005/2006 influenza season in the Northern Hemisphere contain the following strains:

- an A/New Caledonia/20/99(H1N1)-like virus
- an A/California/7/2004(H3N2)-like virus[a]
- a B/Shanghai/361/2002-like virus[b]

a Candidate vaccine viruses are being developed (for further information please see WHO update at http://www.who.int/influenza)
b The currently used vaccine viruses are B/Shanghai/361/2002, B/Jiangsu/10/2003 and B/Jilin/20/2003.
http://www.who.int/csr/disease/influenza/vaccinerecommendations1/en/
www.emea.eu.int

Further information on influenza can be found on the HPSC website

Acknowledgements

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This report was produced by Dr Lisa Domegan & Dr Joan O'Donnell, HPSC