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 2 2006 (9th to 15th Jan 2005)

Summary

During week 2 2006, influenza activity remained at low levels in Ireland, with 15 ILI cases reported by sentinel GPs. One influenza A positive specimen was detected by the NVRL from a hospitalised paediatric patient during week 2 2006. The WHO has confirmed 21 cases of human infection with the H5N1 avian influenza virus in Turkey.

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 2 2006, 15 ILI cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 11.2 per 100,000 population, a slight increase from the updated rate of 9.7 per 100,000 during week 1 2006 (figure 1).

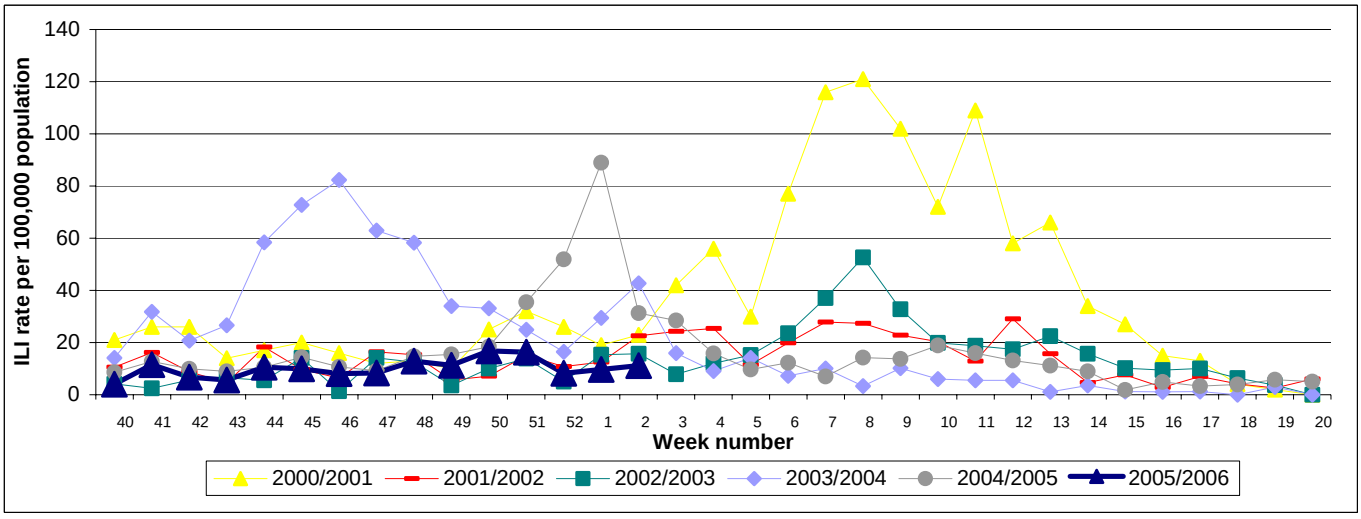

Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005 & 2005/2006 influenza seasons.

Results (continued)

During week 2 2006, ILI rates peaked in those aged 15-64 years, with 13 cases reported, corresponding to 14.4 per 100,000 population. One ILI case was reported in the 0-4 year age group (10.6 per 100,000 population), one in the 5-14 year age group (5.3 per 100,000 population) and no ILI cases were reported in those aged 65 years or older during week 2 2006 (figure 2). Thirty-eight of 43 (88.4%) sentinel general practices reported during week 2 2006, with nine reporting ILI.

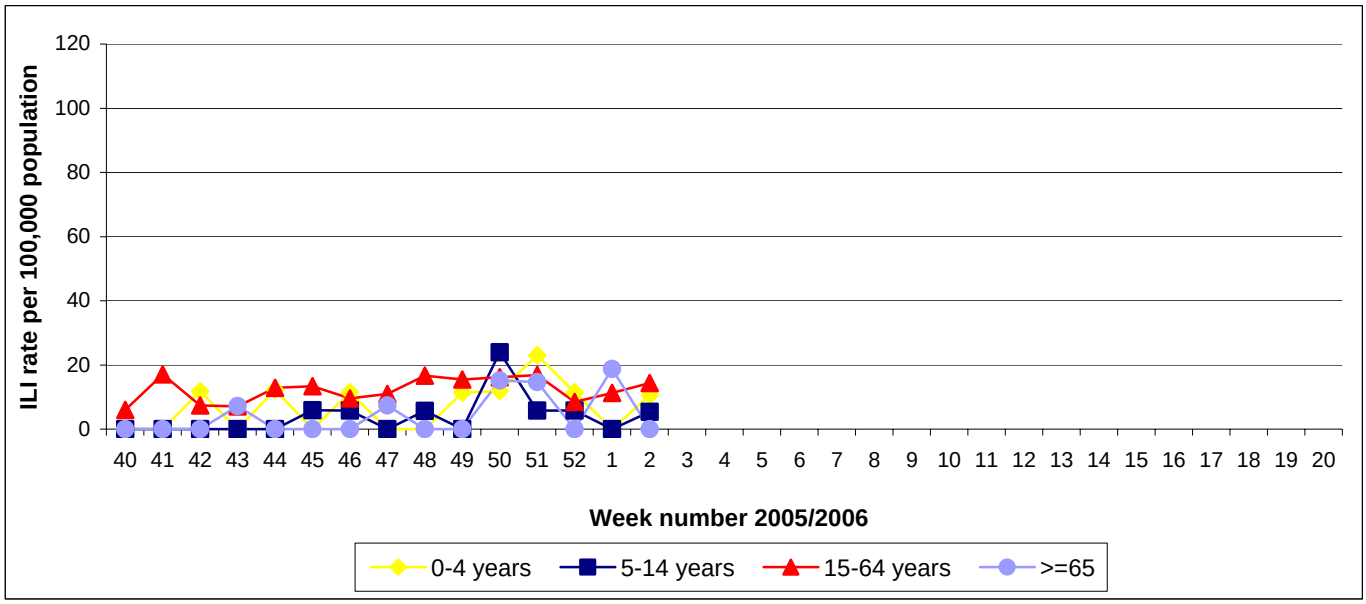

Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2005/2006 influenza season.
**Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is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

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested seven specimens taken by sentinel GPs during week 2 2006, all were negative for influenza virus. The NVRL also tested 90 non-sentinel specimens, taken during week 2 2006, mainly from hospitalised paediatric cases. One non-sentinel specimen was positive for influenza A. To date this season, the NVRL has detected two positive influenza specimens, both from non-sentinel sources, one influenza A (unsubtyped) and one influenza A (H3) (table 1).

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 2 2006. The percentage of RSV positive non-sentinel specimens has been at increased levels in recent weeks (figure 4). 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 2 2006 and the 2005/2006 season to date.

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
2 2006	Sentinel	7	0	0.0	0	0	NA
	Non-Sentinel	90	1	1.1	1	0	23
	Total	**97**	**1**	**1.0**	**1**	**0**	**23**
40 2005 – 2 2006	Sentinel	111	0	0.0	0	0	NA
	Non-Sentinel	823	2	0.2	2	0	272
	Total	**934**	**2**	**0.2**	**2**	**0**	**272**

**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.*

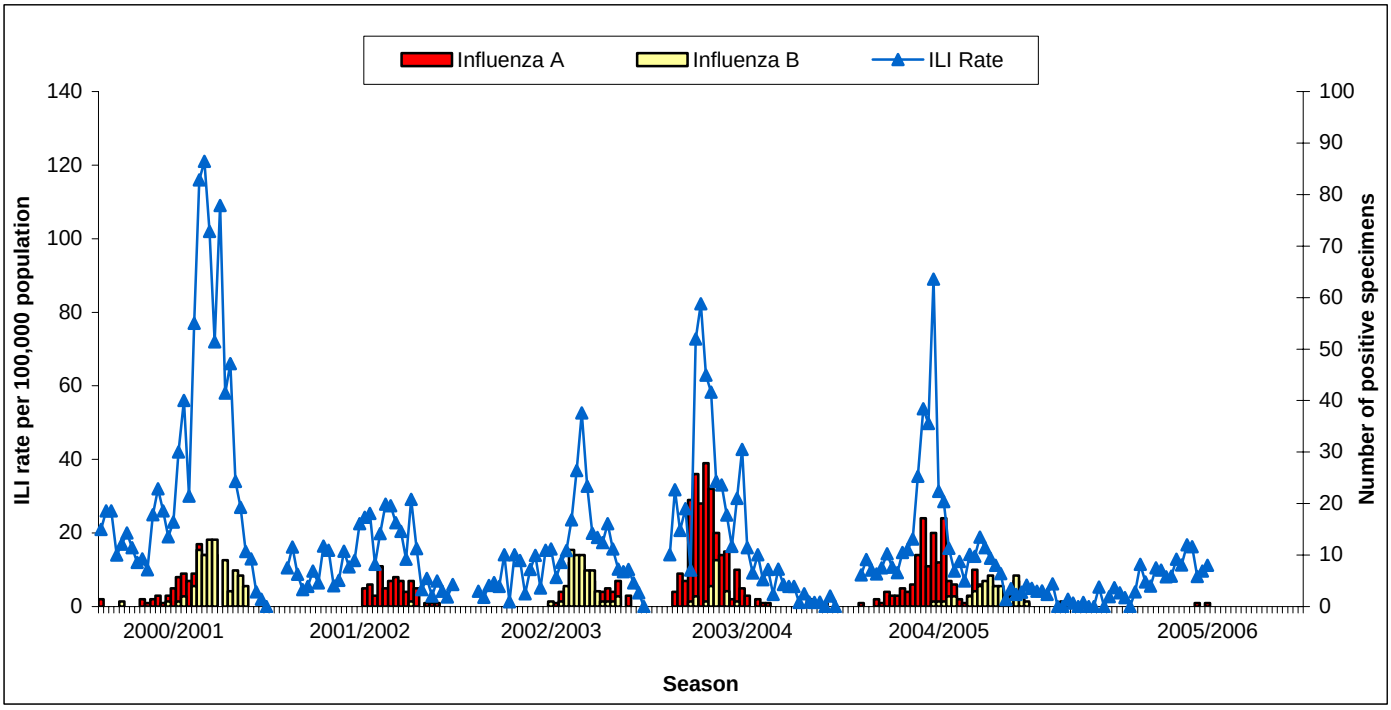

Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

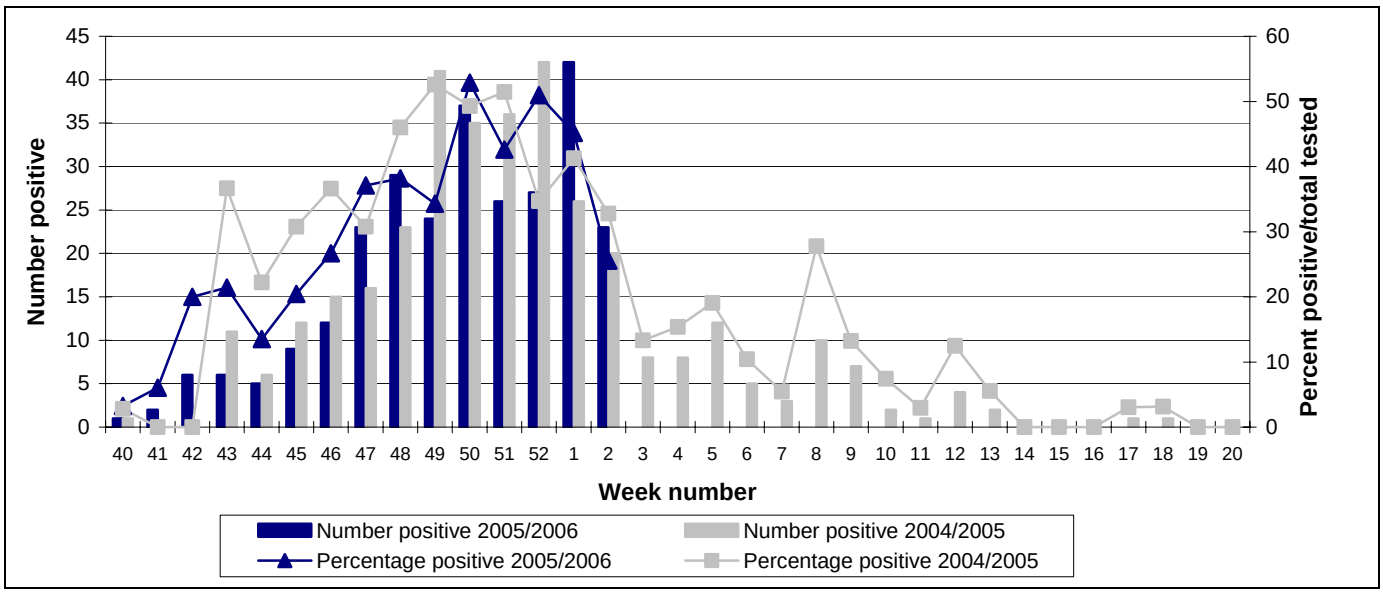

Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2004/2005 influenza seasons.

Weekly Influenza Notifications

One influenza A confirmed case was notified from HSE-MA during week 2 2006. 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.

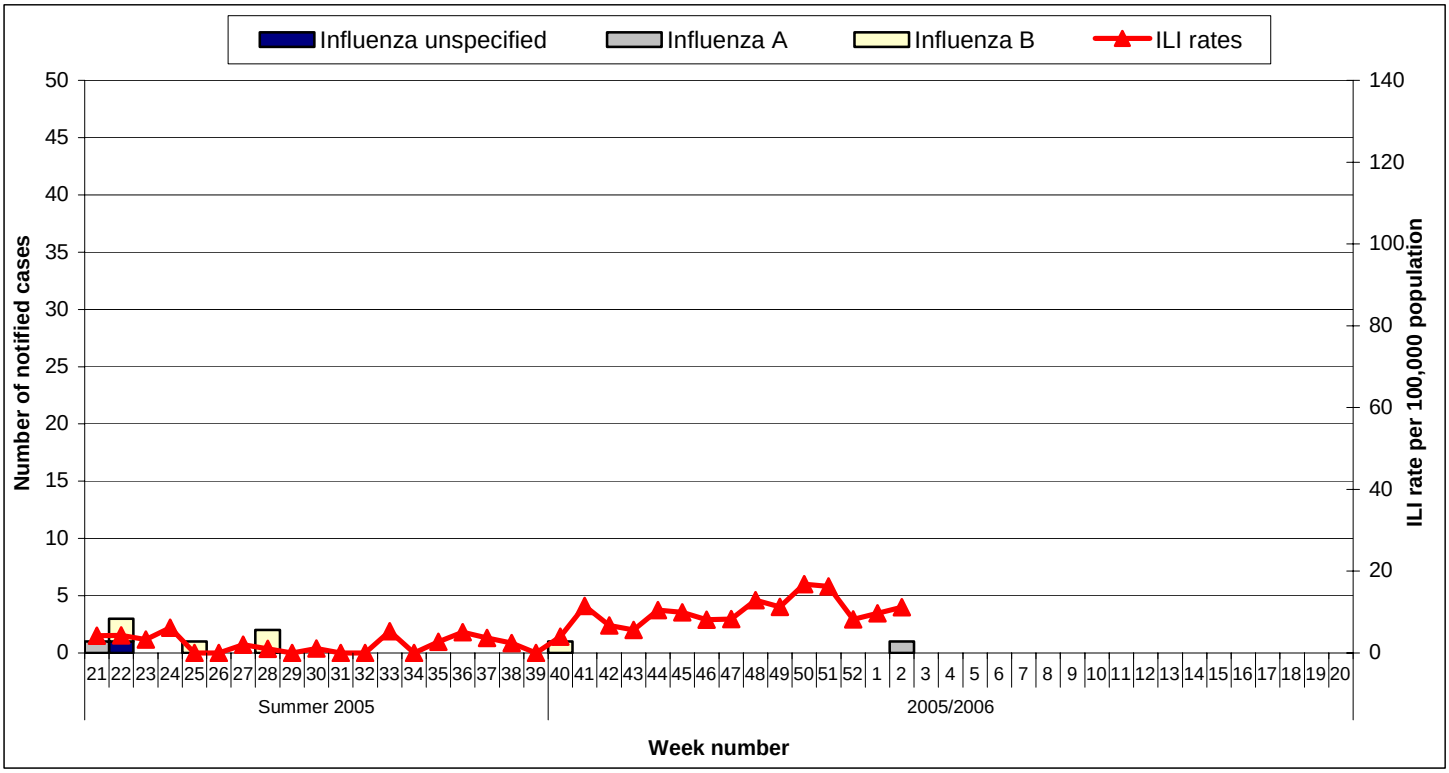

Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2005 and the 2005/2006 influenza season. **Notification data are provisional and were extracted from CIDR on the 18/01/2006 at 09:55 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. Hospital respiratory admissions increased significantly in a sentinel hospital in HSE-WA during weeks 52 2005 and 1 2006, this was followed by a decrease in respiratory admissions during week 2 2006. There was a slight increase in hospital respiratory admissions in a sentinel hospital in HSE-ER during weeks 1 and 2 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 data were available for week 52 2005 and week 1 2006 as schools were closed for the Christmas and New Year Holiday period.

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. Six HSE-Health Areas/Region reported sporadic influenza activity during week 1 2006 (figure 6), based on isolated cases of ILI.

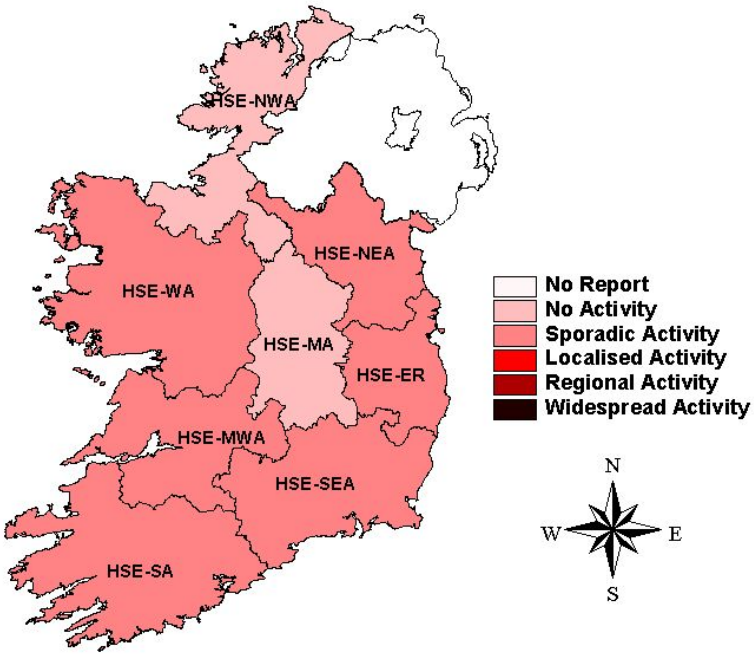

Figure 6: Map of influenza activity by HSE-Health Area during week 1 2006

Influenza Activity in Northern Ireland

Three cases of clinical influenza and 53 cases of ILI were reported by sentinel GPs in Northern Ireland during week 2 2006, corresponding to a combined rate of 47.5 per 100,000 population, an increase from the updated rate of 19.7 per 100,000 in week 1 2006. The first positive influenza specimen of the season was detected during week 2, an influenza B specimen from a hospitalised paediatric case. http://www.cdscni.org.uk

Influenza Activity in England, Scotland & Wales

Influenza activity remained within baseline levels in the England, Scotland and Wales during weeks 1 2006 and 2 2006. GP consultations for ILI remained at similar levels to previous weeks with the slightly higher rates recorded amongst those aged between 45-64 years. Detections of influenza, from specimens collected for routine testing and by sentinel systems, remain at low levels with influenza B representing 80% (N=47) of those positive influenza specimens referred to the Centre for Infections. Influenza B viruses from both the influenza B lineages (B/Yamagata/16/88 lineage and B/Victoria/2/87 lineage), that circulated during the 2004/2005 season, have been detected this season. As influenza activity remains at low levels a full evaluation of this season's influenza vaccine composition should not be made until a significant number of influenza isolates have been collected from the older age groups and other high risk groups that receive the vaccine.
http://www.hpa.org.uk/infections/topics_az/influenza/seasonal/flureports0506.htm

Influenza Activity in Europe

During week 1 2006, influenza activity in Europe was at baseline levels in all countries reporting to the European Influenza Surveillance Scheme (EISS), with the exception of the Netherlands. In the Netherlands clinical influenza activity was twice as high as the baseline level in week 1 2006. Both influenza A and B viruses have been detected since week 40 2005, but for the first time since EISS was started in 1996, more influenza B virus (53%) than influenza A virus (47%) detections were reported for Europe as a whole. Based on (sub)typing data of all influenza virus detections from sentinel and non-sentinel sources up to week 1 2006 (N=254), 134 (53%) were influenza B and 120 were influenza A (47%) of which 77 (30%) were influenza A (unsubtyped), 25 (10%) were A(H3) [of

which 13 were A(H3N2)] and 18 (7%) were A(H1) [of which six were A(H1N1)]. Based on the characterisation data of all influenza virus detections up to week 1 2006: seven were A/California/7/2004 (H3N2)-like, 21 were A/New Caledonia/20/99 (H1N1)-like, five were B/Malaysia/2506/2004-like and nine were B/Jiangsu/10/2003-like (B/Jiangsu/10/2003 is a B/Shanghai/361/2002-like virus used in the 2005/2006 vaccine). No human cases of influenza A (H5N1) virus have been reported in the 28 countries participating in EISS, which do not include Turkey. http://www.eiss.org/index.cgi

Influenza Activity in Canada

During week 1, localised influenza activity was reported in one health region in British Columbia and two health regions in Ontario. Sporadic activity was reported in parts of Yukon, British Columbia, Alberta, Ontario and Quebec, while the rest of Canada reported no activity. The ILI consultation rate was calculated as 17 per 1000 patient visits in week 1, which is below the expected range for this week. During week 1, the Public Health Agency of Canada received 2248 reports of laboratory tests for influenza, with 37 influenza A and 29 influenza B detections. To date this season, 100% (40) of the influenza A strains (A/California/07/2004(H3N2)-like viruses) characterised by the NML have matched the A/H3N2 strain included in the 2005/2006 Canadian vaccine. However, only 8% (3/37) of the influenza B characterisations have matched the vaccine strain (B/Shanghai/361/2002-like viruses). The remaining 92% (34/37) of the influenza B strains have been B/Hong Kong/330/2001-like viruses, which belong to a separate lineage of viruses not covered by this year's vaccine. Most of the identifications of B/Hong Kong/330/2001-like viruses have been associated with school outbreaks. No influenza A/H1N1 viruses have been identified to date. http://www.phac-aspc.gc.ca/fluwatch/index.html

Influenza Activity in the United States

During week 1, influenza activity continued approximately at the same level as recent weeks in the United States. 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. Seven states reported widespread influenza activity; 11 states reported regional influenza activity; 9 states reported local influenza activity; 21 states, New York City, the District of Columbia, and Puerto Rico reported sporadic influenza activity; and 2 states reported no influenza activity. During week 1, WHO and NREVSS laboratories reported 2,223 specimens tested for influenza viruses and 203 (9.1%) were positive: 90 A (H3N2), 105 A unsubtyped, and 8 influenza B viruses. CDC has antigenically characterised 73 influenza viruses [65 influenza A (H3N2), 1 influenza A (H1), and 7 influenza B viruses] this season. Fifity four A (H3N2) viruses were characterised as A/California/07/2004-like (included in 2005/2006 vaccine), and 11 A (H3N2) viruses showed reduced titers with antisera produced against the vaccine strain. The hemagglutinin protein of the influenza A (H1) virus was similar antigenically to the hemagglutinin of the vaccine strain A/New Caledonia/20/99. 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. http://www.cdc.gov/flu/

Influenza Activity Worldwide

During week 1 2006, regional influenza activity was reported in Tunisia, with 4 A (H1) viruses detected. Localised influenza activity was reported in Mongolia and sporadic activity was reported in China (19 A H1, 3 A H3, 1 A unsubtyped and 19 B). No activity was reported in Argentina and one influenza A (H1) and 6 A (H3) positive specimens were reported from Japan. http://gamapserver.who.int/GlobalAtlas/home.asp

Avian Influenza

As of the 18th of January 2006, the WHO has reported 21 cases of human infection with the H5N1 avian influenza virus in Turkey. Most patients are children and all have been hospitalised for treatment and evaluation. Of these patients, four have died. Outbreaks in poultry are now known to be occurring in several parts of the country. In recent days, the Ministry of Agriculture has confirmed H5N1 outbreaks in birds in 12 of the country's 81 provinces. Extensive culling is under way, and several other possible outbreaks are under investigation. Initial investigations by the WHO/ECDC/EC team have found no evidence that the virus has increased its transmissibility or is spreading from person to person. All evidence to date indicates that patients have acquired their infections following close contact with diseased birds.

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