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 3 2006 (16th to 22nd Jan 2005)

Summary

During week 3 2006, influenza activity increased but still remains at low levels in Ireland, with 23 ILI cases reported by sentinel GPs. No influenza positive specimens were detected by the NVRL for week 3. The WHO has reported 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^{0}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. 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 3 2006, 23 ILI cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 17.8 per 100,000 population, an increase from the updated rate of 10.8 per 100,000 during week 2 2006 (figure 1).

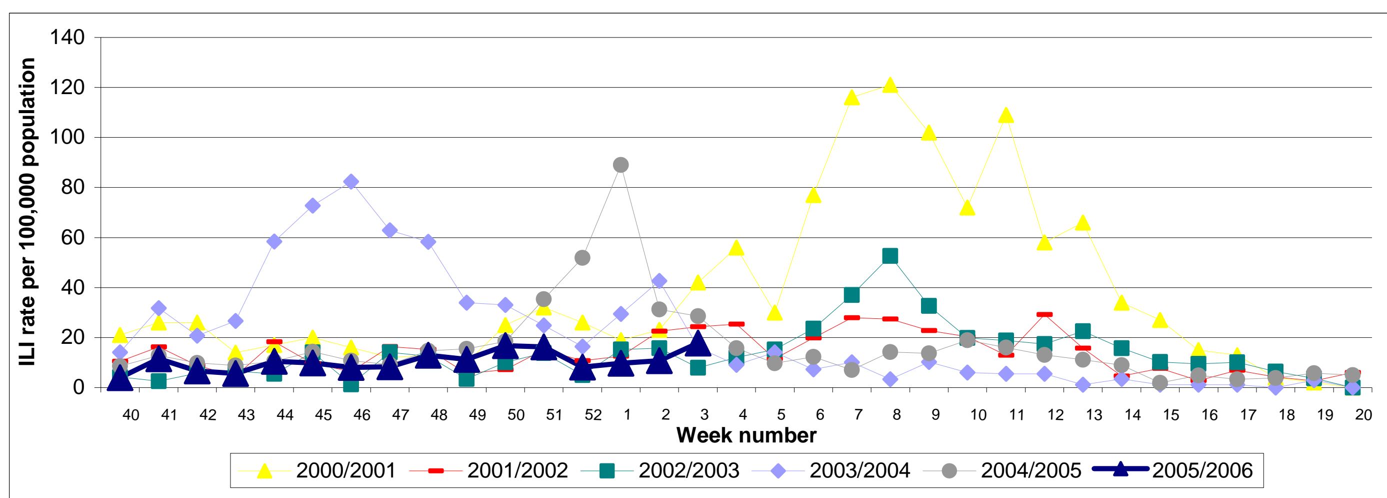

Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005 & 2005/2006 influenza seasons.

Results (continued)

During week 3 2006, ILI rates peaked in those aged 0-4 years, with two cases reported, corresponding to 21.8 per 100,000 population. One ILI case was reported in the 5-14 year age group (5.5 per 100,000 population), 17 in the 15-64 year age group (19.4 per 100,000 population) and two ILI cases were reported in those aged 65 years or older (13.9 per 100,000 population) during week 3 2006 (figure 2). Thirty-eight of 43 (88.4%) sentinel general practices reported during week 3 2006, with 13 reporting ILI.

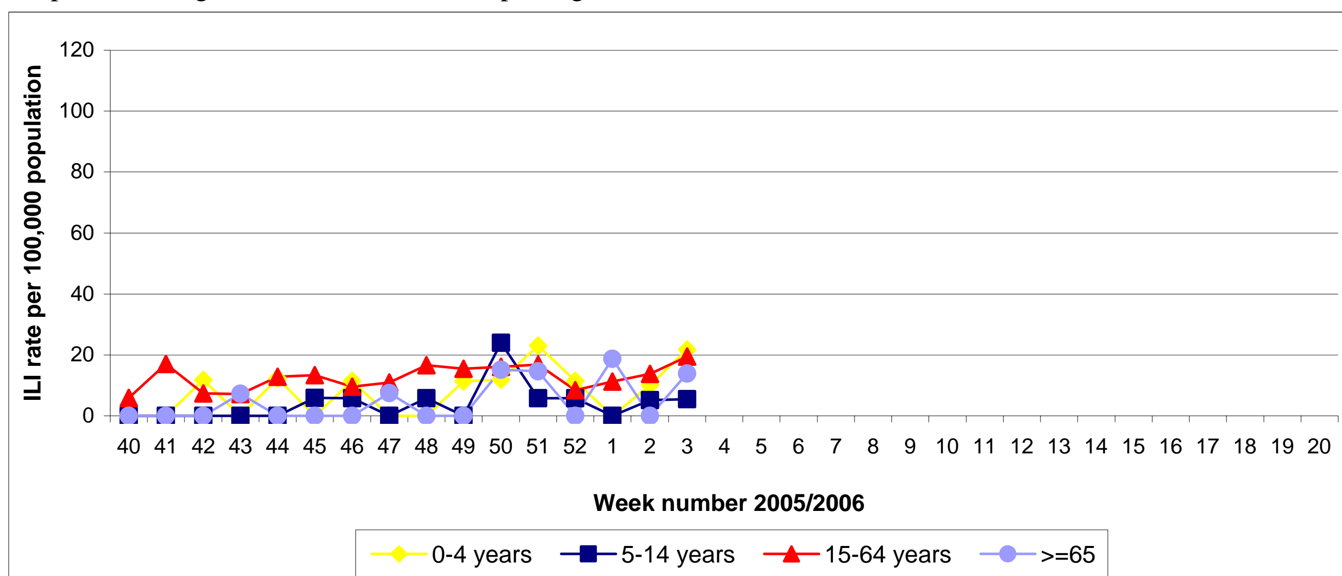

Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2005/2006 influenza season. **Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is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

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested eight specimens taken by sentinel GPs during week 3 2006, all were negative for influenza virus. One pending sentinel specimen from week 2 2006 has tested positive for influenza A (H3), this is the first influenza positive sentinel specimen of the season. The NVRL also tested 74 non-sentinel specimens, taken during week 3 2006, mainly from hospitalised paediatric cases, all were negative for influenza virus. To date this season, the NVRL has detected three positive influenza specimens, two from non-sentinel sources and one sentinel specimen, all were positive for 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. Nineteen non-sentinel specimens tested positive for respiratory syncytial virus (RSV) during week 3 2006 (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 3 2006 and the 2005/2006 season to date.

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
3 2006	Sentinel	8	0	0.0	0	0	NA
	Non-Sentinel	74	0	0.0	0	0	19
	Total	**82**	**0**	**0.0**	**0**	**0**	**19**
40 2005 – 3 2006	Sentinel	120	1	0.8	1	0	NA
	Non-Sentinel	899	2	0.2	2	0	291
	Total	**1019**	**3**	**0.3**	**3**	**0**	**291**

**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.*

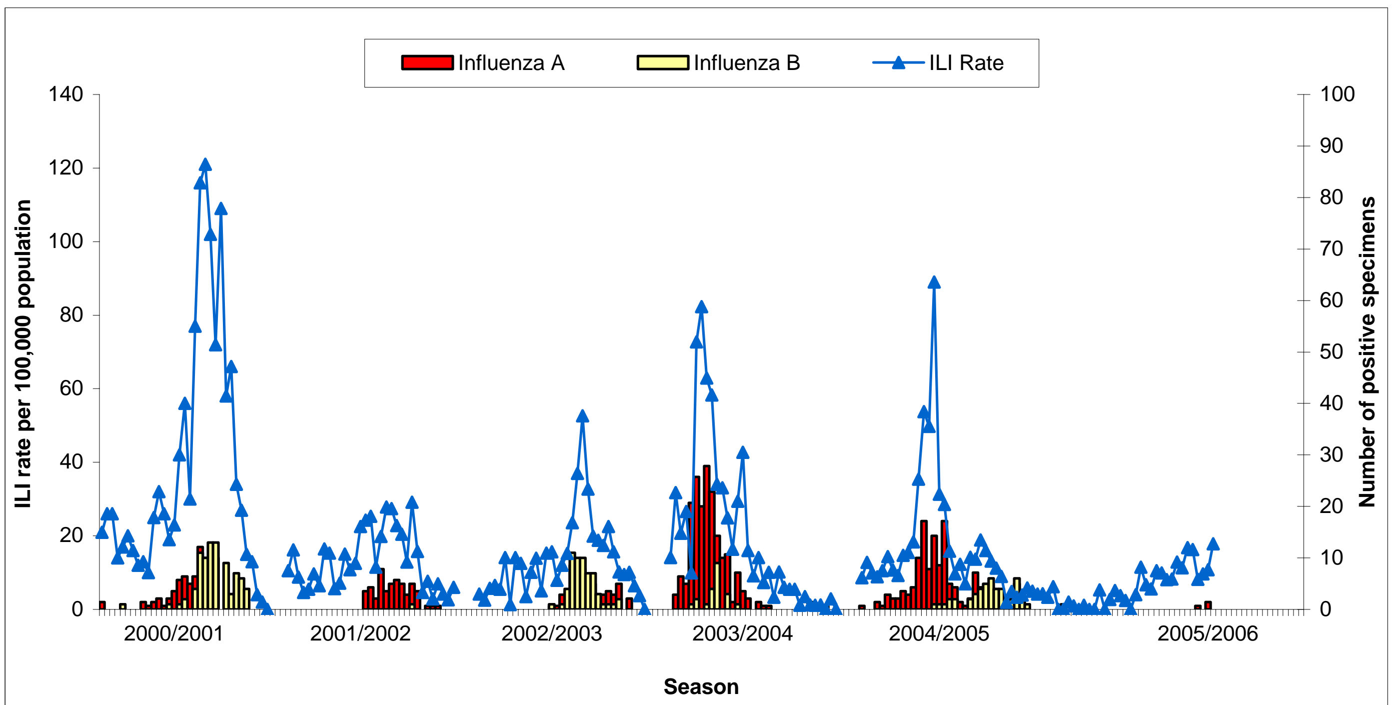

Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

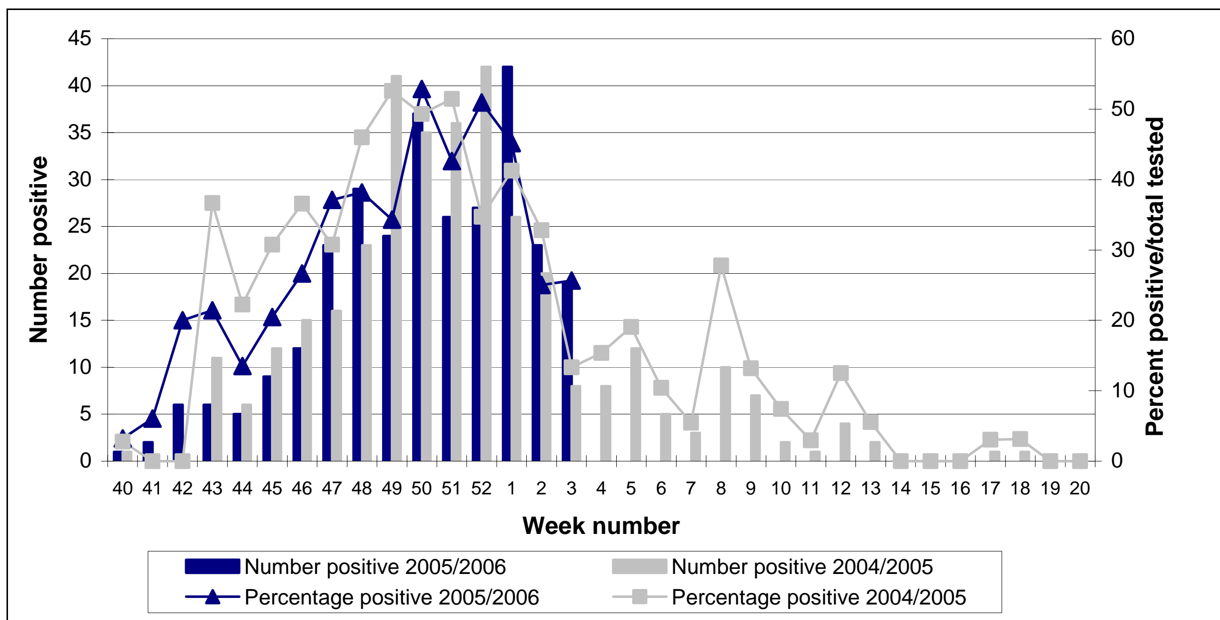

Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2004/2005 influenza seasons.

Weekly Influenza Notifications

No influenza cases were notified to HPSC during week 3. 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.

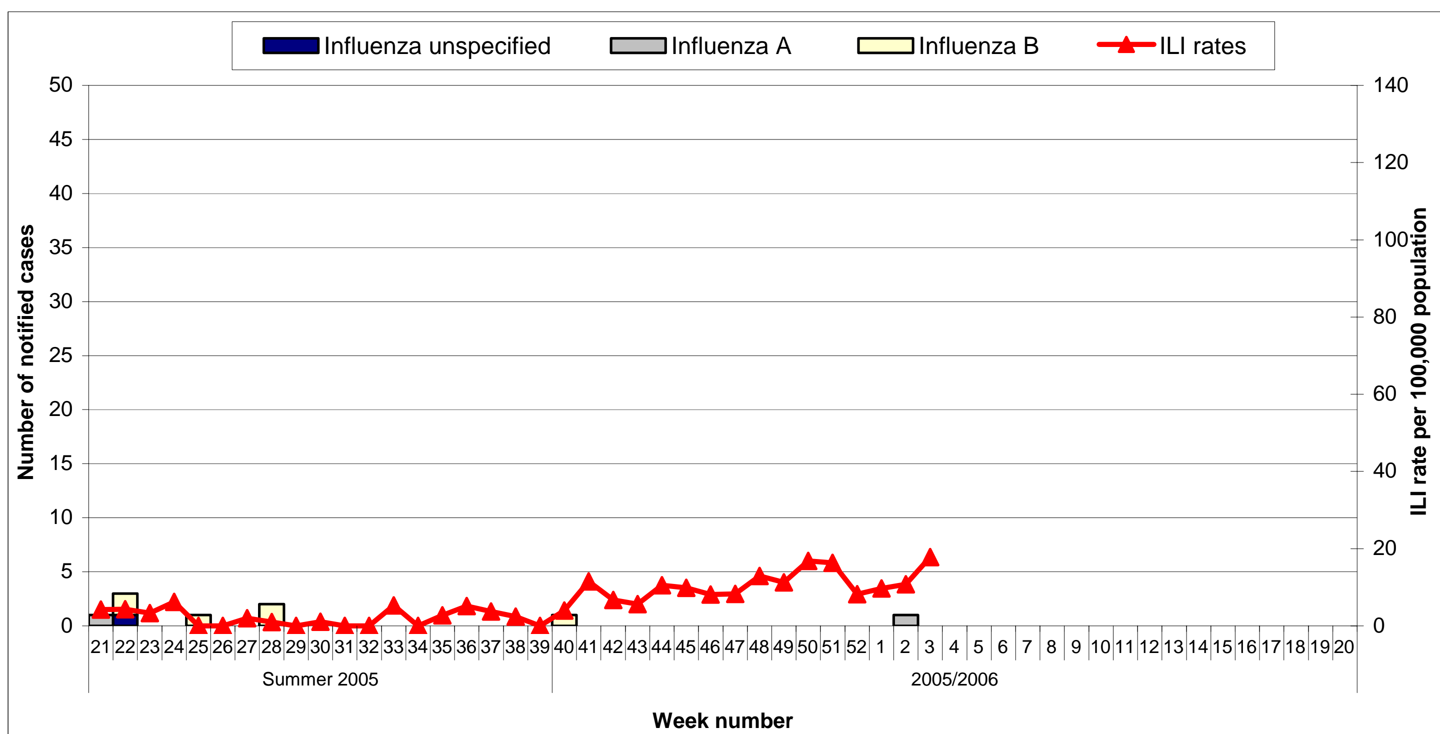

Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2005 and the 2005/2006 influenza season. **Notification data are provisional and were extracted from CIDR on the 25/01/2006 at 10:43 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 significant increases in sentinel schools were reported to HPSC during week 2 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. Six HSE-Health Areas/Region reported sporadic influenza activity during week 2 2006 (figure 6), based on isolated cases of ILI, positive influenza specimens detected by the NVRL and influenza notifications.

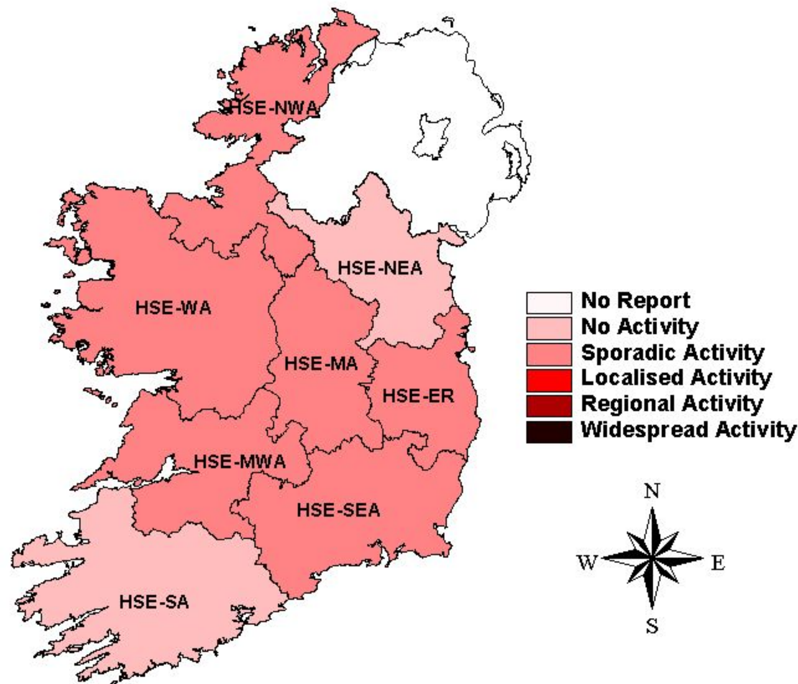

Figure 6: Map of influenza activity by HSE-Health Area during week 2 2006

Influenza Activity in Northern Ireland

Forty nine cases of ILI and no cases of clinical influenza were reported by sentinel GPs in Northern Ireland during week 3 2006, corresponding to a combined rate of 41.5 per 100,000 population, little changed from the updated rate of 43.7 per 100,000 in week 2 2006. Four sentinel specimens were tested for influenza virus during week 3, and one was positive for influenza B. 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 2 2006, 15 countries reported sporadic influenza activity: Belgium, the Czech Republic, Denmark, England, France, Ireland, Italy, the Netherlands, Northern Ireland, Norway, Scotland, Slovakia, Sweden, Switzerland, and Wales. The 11 remaining countries reported no influenza activity. The total number of respiratory specimens collected by sentinel physicians in week 2 2006 was 536, of which 23 (4.3%) were positive for influenza virus (9 A & 14 B). In addition, 2071 non-sentinel specimens were analysed and 100 (4.8%) tested positive for

influenza virus (15 A & 85 B). Both influenza A and B virus types have been detected in Europe since week 40 2005, with influenza B predominating. Very high numbers of influenza B virus detections were reported in Norway (29) and Scotland (51) in week 2 2006, while only three influenza A viruses were detected in the same week in Norway and none in Scotland. Overall, the proportion of influenza B viruses characterised as B/Malaysia/2506/2004-like was twice as high as that of influenza B viruses characterised as B/Jiangsu/10/2003-like. The current Northern Hemisphere vaccine contains a B/Shanghai/361/2002-like virus of which B/Jiangsu/10/2003 is a representative. This vaccine strain provides reduced but still valuable protection against the B/Malaysia/2506/2004-like viruses. Based on the characterisation data of all influenza virus detections up to week 2 2006, 99 have been antigenically and/or genetically characterised: 27 were A/New Caledonia/20/99 (H1N1)-like, 13 were A/California/7/2004 (H3N2)-like, 41 were B/Malaysia/2506/2004-like (B/Victoria/2/87-lineage) and 18 were B/Jiangsu/10/2003-like. Up to week 2 2006, no human cases of influenza A (H5N1) have been reported in the 28 countries participating in European Influenza Surveillance Scheme, which does not include Turkey. http://www.eiss.org/index.cgi

Influenza Activity in Canada

During week 2, localised influenza activity was reported in eight influenza surveillance regions: two in British Columbia, three in Alberta and three in Ontario. Sporadic activity was reported in the Yukon and parts of British Columbia, Saskatchewan, Ontario and Quebec. The ILI consultation rate for Canada was 22 per 1000 patient visits in week 2, which is below the expected range for this week. During week 2, the Public Health Agency of Canada received 2552 reports of laboratory tests for influenza, with 34 influenza A and 39 influenza 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 8% of the influenza B characterisations have matched the current vaccine strain. The remaining 92% 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 2, the proportion of patient visits to sentinel providers for ILI and the proportion of deaths attributed to pneumonia and influenza were below baseline levels. Eight states reported widespread influenza activity; 14 states and New York City reported regional influenza activity; 11 states reported local influenza activity; 16 states, the District of Columbia, and Puerto Rico reported sporadic influenza activity; and 1 state reported no influenza activity. During week 2, WHO and NREVSS laboratories reported 2,016 specimens tested for influenza viruses, of which 238 (11.8%) were positive: 105 A (H3N2), 2 A(H1N1), 125 A (unsubtyped) and 6 B. CDC has antigenically characterised 77 influenza viruses [65 A (H3N2), 1 A (H1), and 11 B] 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. Eight of the influenza B viruses isolated belong to the B/Yamagata lineage. One was similar to B/Shanghai/361/2002, the recommended influenza B component for the 2005/2006 influenza vaccine, 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 2 2006, widespread influenza activity was reported in Japan (1 A H1 & 29 A H3). Sporadic influenza activity was reported in China (20 A H1, 2 A H3, 5 A unsubtyped & 24 B) and Israel (1 A H1 & 4 A unsubtyped), and no activity reported in Argentina and Chile. 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. 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

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 Dr Lisa Domegan & Dr Joan O'Donnell, HPSC