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 1 2006 (2nd to 8th Jan 2005)

Summary

During week 1 2006, influenza activity remained at low levels in Ireland, with 13 ILI cases reported by sentinel GPs. To date this season, only one positive influenza specimen (A /H3) has been detected by the NVRL during week 52 2005. The WHO has confirmed 15 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, and regional influenza activity reported by the Departments of Public Health.

Results

Clinical Data

During week 1 2006, 13 ILI cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 9.7 per 100,000 population, a slight increase from the updated rate of 7.0 per 100,000 during week 52 2006 (figure 1).

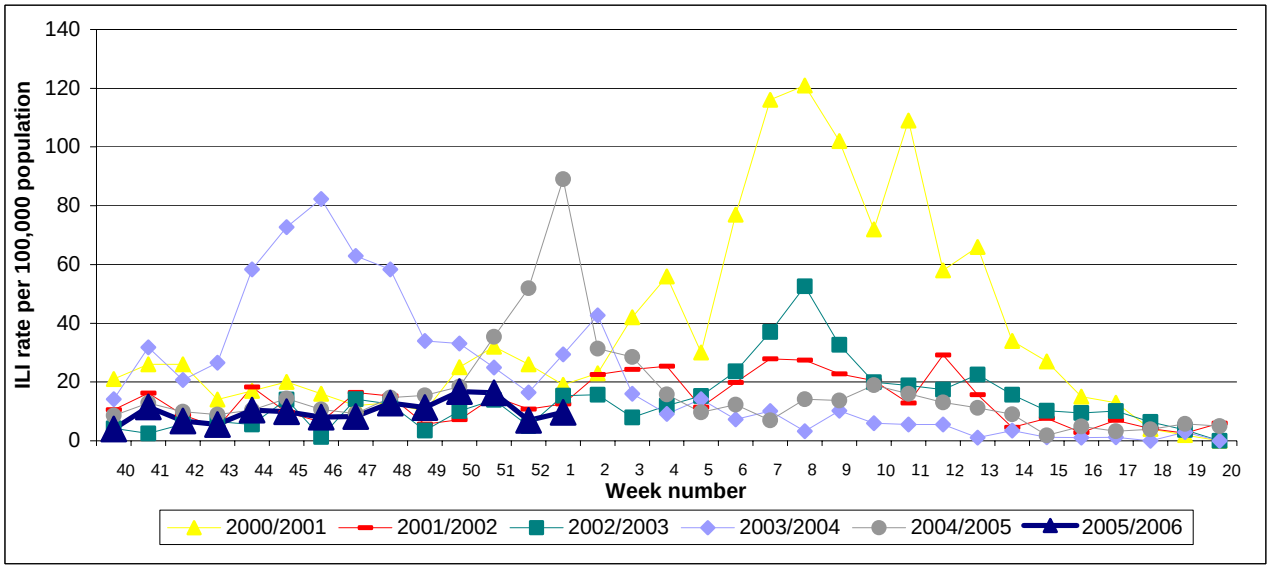

Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005 & 2005/2006 influenza seasons.

Results (continued)

During week 1 2006, ILI rates peaked in those aged 65 years or older (20.2 per 100,000 population). No ILI cases were reported in those aged 14 years or younger and ten ILI cases were reported in the 15-64 year age group (11 per 100,000 population) during week 1 2006 (figure 2). Forty of 43 (93.0%) sentinel general practices reported during week 1 2006, with nine reporting ILI.

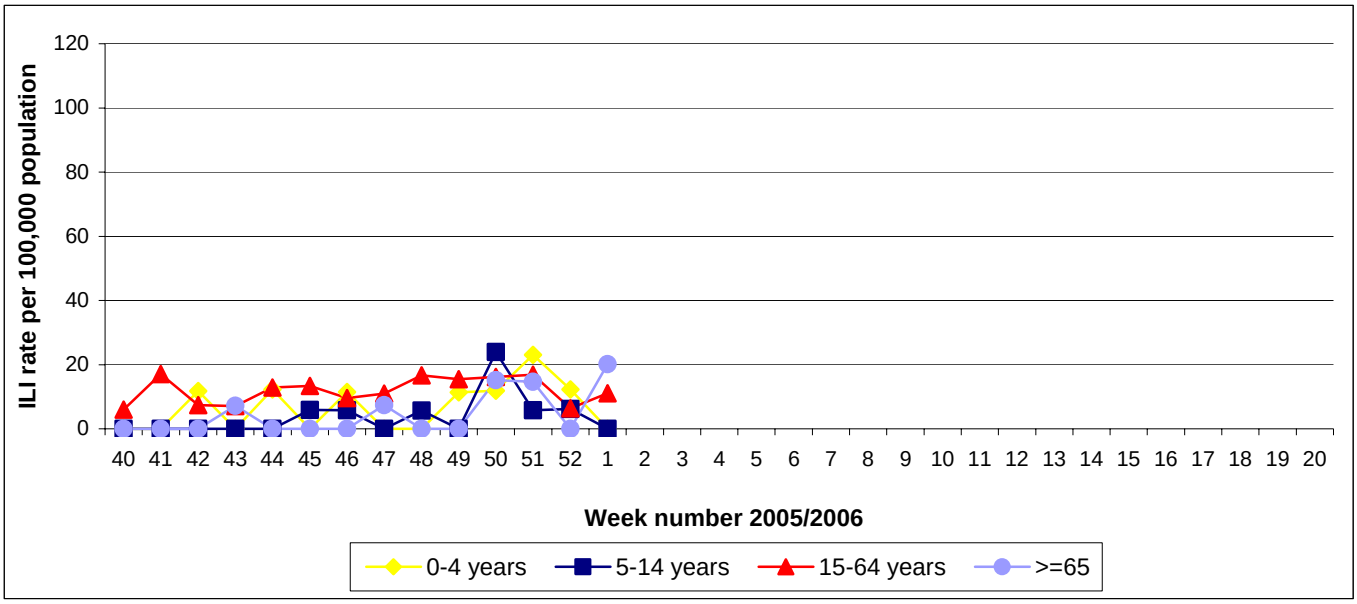

Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2005/2006 influenza season.
**Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is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

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested five specimens taken by sentinel GPs during week 1 2006, all were negative for influenza virus. The NVRL also tested 84 non-sentinel specimens, taken during week 1 2006, mainly from hospitalised paediatric cases. All non-sentinel specimens tested negative for influenza virus during week 1 2006. To date this season, one influenza positive specimen (A/H3) has been detected by the NVRL (table 1).

Figure 3 compares the ILI consultation rates by season and the number of positive influenza specimens tested by the NVRL. Forty non-sentinel specimens tested positive for respiratory syncytial virus (RSV) during week 1 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 1 2006 and the 2005/2006 season to date.

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
1 2006	Sentinel	5	0	0.0	0	0	NA
	Non-Sentinel	84	0	0.0	0	0	40
	Total	**89**	**0**	**0.0**	**0**	**0**	**40**
40 2005 – 1 2006	Sentinel	105	0	0.0	0	0	NA
	Non-Sentinel	724	1	0.1	1	0	247
	Total	**829**	**1**	**0.1**	**1**	**0**	**247**

**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.*

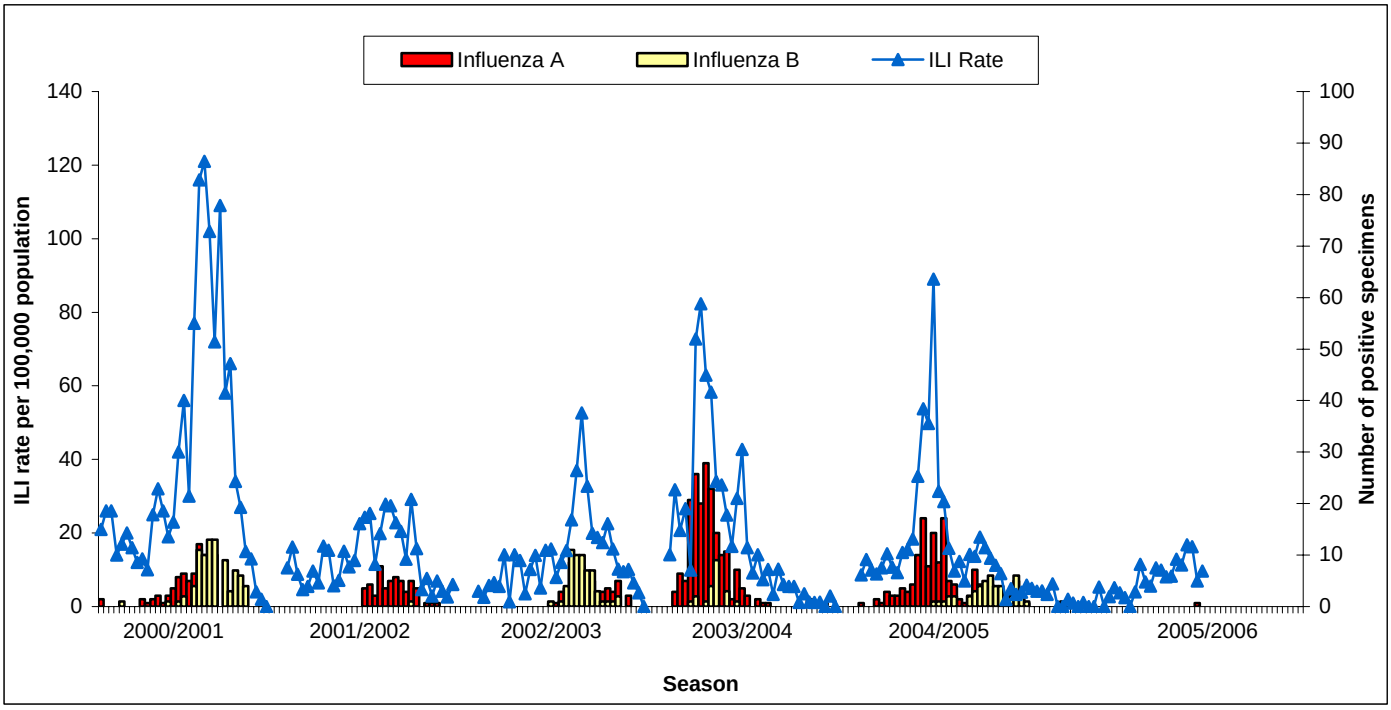

Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

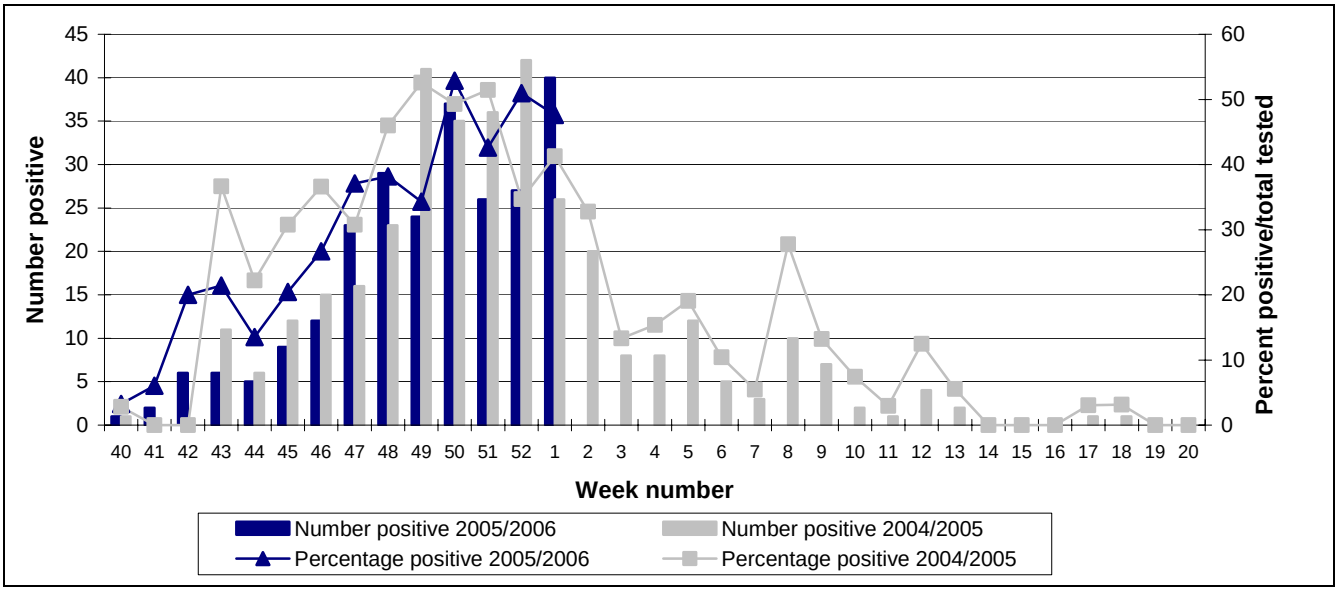

Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2004/2005 influenza seasons.

Weekly Influenza Notifications

No influenza notifications were reported to HPSC during week 1 2006. 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.

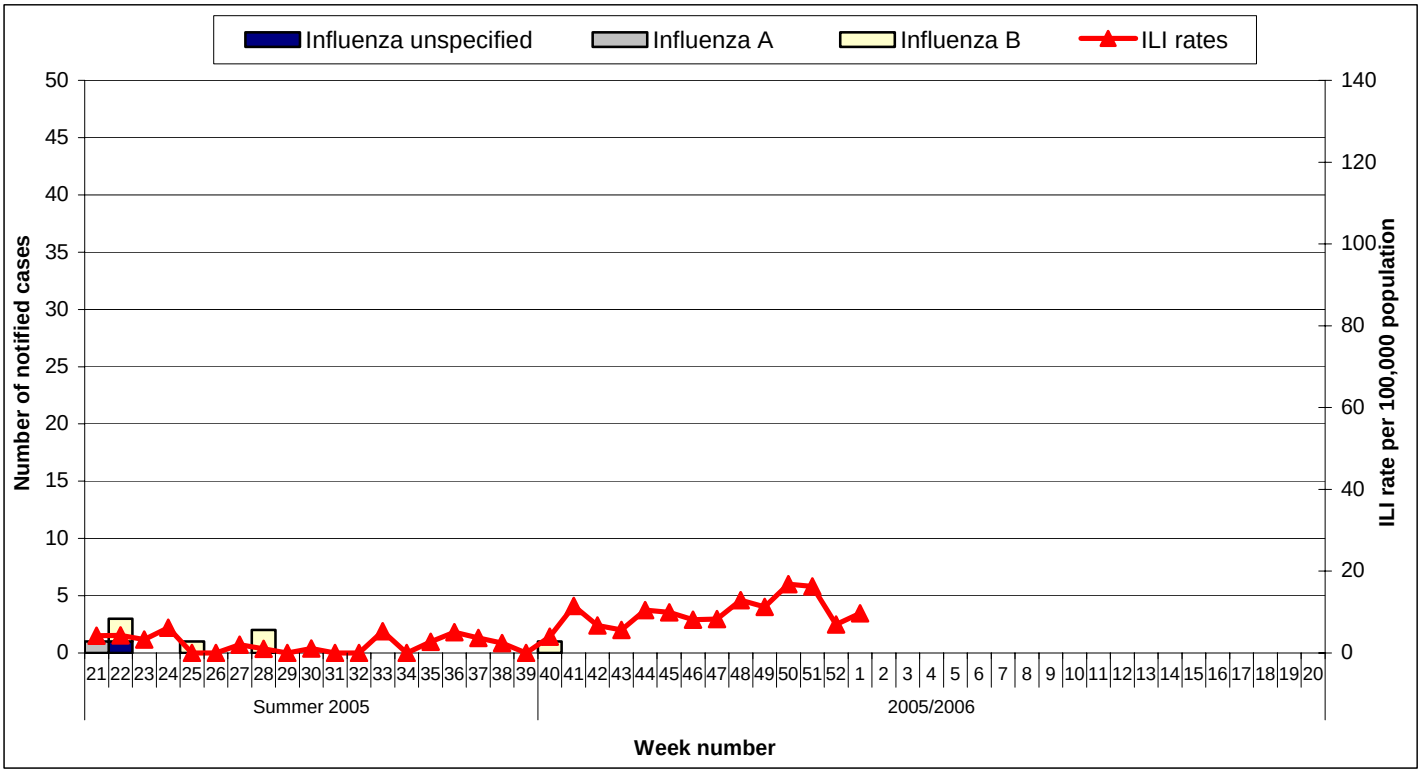

Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2005 and the 2005/2006 influenza season. **Notification data are provisional and were extracted from CIDR on the 11/01/2006 at 12.20 GMT.*

Mortality Data

No deaths registered 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 was a slight increase in hospital respiratory admissions in sentinel hospitals in HSE-NEA and -SEA during week 52 2005.

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. Seven HSE-Health Areas/Region reported sporadic influenza activity during week 51 2005 and two reported sporadic activity during week 52 2005 (figure 6), based on isolated cases of ILI.

Figure 6: Map of influenza activity by HSE-Health Area during weeks 51 & 52 2005

Influenza Activity in Northern Ireland

Twenty-six cases of ILI and clinical influenza were reported by sentinel GPs in Northern Ireland during week 1 2006, corresponding to a rate of 22.2 per 100,000 population. There have been no laboratory detections of influenza to date this season in Northern Ireland. http://www.cdscni.org.uk

Influenza Activity in England, Scotland & Wales

Influenza activity in the United Kingdom remained within baseline levels during week 1 2006, with clinical influenza-like activity increasing in northern England and Scotland. In England, GP consultations for ILI increased slightly during week 1 2006 with the highest rates recorded amongst those aged between 15-64 years. Influenza and ILI levels remain at low levels in Wales, and well within expected levels for this time of year. Detections of influenza A, from specimens collected for routine testing in England and Wales, increased during week 1 2006. Influenza A now represents 69% (N = 62) of the influenza viruses detected from samples sent for routine testing since week 40 2005, and influenza B, 31% (N=28).
http://www.hpa.org.uk/infections/topics_az/influenza/seasonal/flureports0506.htm

Influenza Activity in Europe

Clinical influenza activity in Europe remains at baseline levels. Sporadic influenza activity was reported in England, France, the Netherlands, Norway and Sweden in week 52 2005. Both influenza A and B viruses have been detected since week 40 2005: 54% were influenza A and 46% were influenza B. The total number of weekly influenza virus detections remains low, confirming the current low levels of clinical influenza activity. Based on (sub)typing data of all influenza virus detections from sentinel and non-sentinel sources up to week 52 2005 (N=166), 59 (36%) were influenza A (unsubtyped), 18 (11%) were A(H3) [9 A(H3N2)], 12 (7%) were A(H1) [3 A(H1N1)] and 77 (46%) were influenza B. Based on the characterisation data of all influenza virus detections up to week 52 2005, 33 have been antigenically and/or genetically characterised: six were A/California/7/2004 (H3N2)-like, 14 were A/New Caledonia/20/99 (H1N1)-like, five were B/Malaysia/2506/2004-like and eight were B/Jiangsu/10/2003-like.

The low levels of influenza activity at this time of the year are not exceptional. An analysis of the European Influenza Surveillance Scheme (EISS) database since 1996 reveals that in five of the nine seasons, influenza activity started after the New Year in more than 50% of countries. During the 1997/1998-season influenza activity started after the New Year in all countries participating in EISS.

Whilst no human cases of influenza A(H5N1) have been reported in the 28 European countries participating in EISS up to week 52 2005, the WHO has confirmed 15 cases of human infection with the H5N1 avian influenza virus in Turkey; further laboratory tests are being conducted.
http://www.eiss.org/index.cgi
http://www.who.int/csr/disease/avian_influenza/en/

Influenza Activity in Canada

During week 52, localised influenza activity was reported in one health region in British Columbia and one health region 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 29 per 1000 patient visits in week 52, which is below the expected range for this week. During week 52 2005, the Public Health Agency of Canada received 1612 reports of laboratory tests for influenza: 43 influenza A and 30 influenza B. Since the start of the 2005/2006-influenza season, the NML has antigenically characterised 39 influenza viruses; 20 A/California/07/2004(H3N2)-like viruses, 16 B/Hong Kong/330/2001-like viruses (belonging to the B/Victoria/2/1987 lineage) and 3 B/Shanghai/361/2002-like viruses (belonging to the B/Yamagata/16/1988 lineage). To date this season, 100% of the influenza A strains characterised have matched the A/H3N2 strain included in the 2005/2006 Canadian vaccine. However, only 16% (3/19) of the influenza B characterisations have matched the vaccine strain (B/Shanghai/361/2002-like viruses). The remaining 84% (16/19) of the influenza B strains characterised were 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 52 2005, influenza activity continued to increase 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; 3 states reported regional influenza activity; 9 states and the District of Columbia reported localised influenza activity; 27 states, and New York City reported sporadic influenza activity; and 2 states reported no influenza activity. During week 52, WHO and NREVSS laboratories reported 1,677 specimens tested for influenza viruses, 169 (10.1%) of which were positive: 117 A (H3N2), 2 A (H1N1), 48 A unsubtyped and 2 B viruses. To date this season, 608 (52.7%) of the 1,153 influenza A viruses have been subtyped: 602 (99.0%) were A (H3N2) and 6 (1.0%) were A (H1N1) viruses. Of the 23 influenza A (H3N2) viruses antigenically characterised this season, 21 were A/California/07/2004-like (included in the 2005/2006 vaccine), and 2 showed reduced titers with antisera produced against A/Califonia/07/2004. The hemagglutinin protein of the influenza A (H1) virus was similar antigenically to the hemagglutinin of the A (H1N1) 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. Five of the influenza B viruses isolated belong to the B/Yamagata lineage. One was similar to B/Shanghai/361/2002 (included in the 2005/2006 influenza vaccine), and 4 were characterised as B/Florida/07/2004-like (a minor antigenic variant of B/Shanghai/361/2002). Two influenza B viruses were identified as belonging to the B/Victoria lineage. http://www.cdc.gov/flu/

Influenza Activity Worldwide

During week 52 2005, localised influenza activity was reported in Mongolia and sporadic activity was reported in China (6 A H1, 3 A H3, 1 A unsubtyped and 8 B) and Brazil. No activity was reported in Argentina and Chile and one influenza A (H1) positive specimen was reported from Iran. http://gamapserver.who.int/GlobalAtlas/home.asp

Avian Influenza

As of the 10th of January 2006, the WHO has confirmed 15 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, two 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 11 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. As of the 10th of January 2006, 147 confirmed human cases and 78 deaths of avian influenza A (H5N1) cases have been reported to the WHO from Cambodia, China, Indonesia, 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.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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