

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 20 2006 (15th to 21st May 2006)

Summary

During week 20 2006, influenza activity remained at low levels in Ireland, with three influenza-like illness (ILI) cases reported by sentinel GPs. No positive influenza specimens were detected by the NVRL during week 20 2006. Influenza activity peaked for the 2005/2006 season during week 10 2006. This is the last weekly influenza surveillance report of the 2005/2006 season, influenza activity will be monitored throughout the summer period.

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-six 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 38⁰C 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 and hospital admissions data.

Results

Clinical Data

During week 20 2006, three ILI cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 2.4 per 100,000 population, a slight increase from the updated rate of 1.4 per 100,000 during week 19 2006 (figure 1).

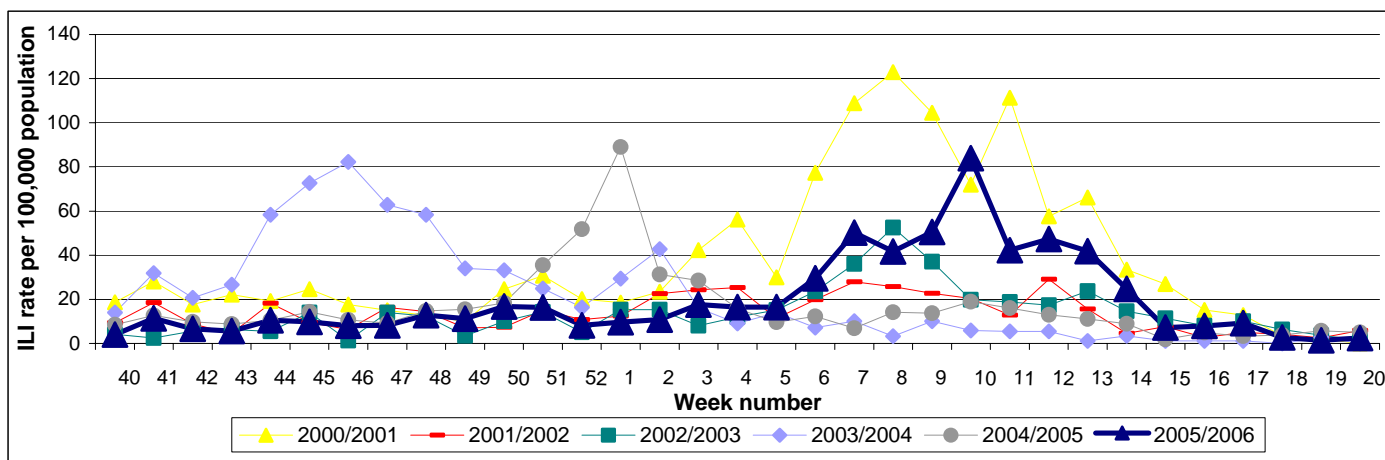


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005 & 2005/2006 influenza seasons.

Results (continued)

During week 20 2006, two ILI cases were reported in the 5-14 year age group, corresponding to an ILI consultation rate of 11.4 per 100,000 population and one ILI case was reported in the 15-64 year age group, corresponding to an ILI consultation rate of 1.2 per 100,000 population. No ILI cases were reported in 0-4 and ≥ 65 year age groups (figure 2). Thirty-five of 46 (76.1%) sentinel general practices reported during week 20 2006, with three reporting ILI cases.

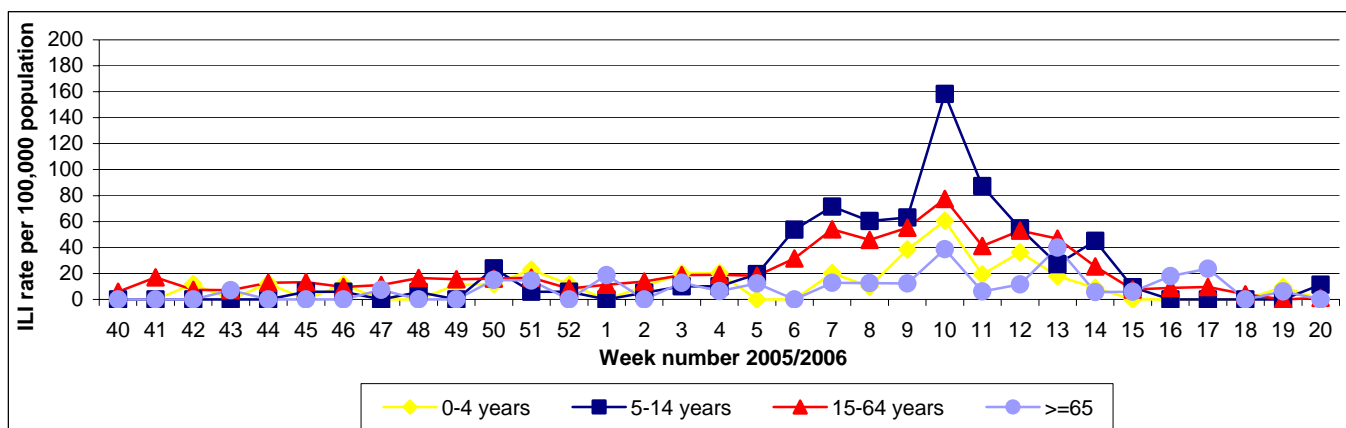


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2005/2006 influenza season.

*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 four specimens taken by sentinel GPs during week 20 2006, all specimens were negative for influenza virus. The NVRL also tested 39 non-sentinel specimens during week 20 2006, mainly from hospitalised paediatric cases, none were positive for influenza virus. To date this season, the NVRL has detected 168 positive influenza specimens: 88 influenza A (63 A H3 & 25 A untyped) and 80 influenza B (table 1). Influenza positive specimens peaked in week 10 2006, coinciding with the peak in ILI consultation rates. Influenza positive specimens have been detected in all HSE-Health Areas this season (table 2). Figure 3 compares the ILI consultation rates by season and the number of positive influenza specimens tested by the NVRL. One non-sentinel specimen tested positive for respiratory syncytial virus (RSV) during week 20 2006 (figure 4). The percentage of RSV positive respiratory specimens peaked in week 50 2005.

The WHO Influenza Reference Laboratory at the National Institute for Medical Research, Mill Hill, London has antigenically characterised two influenza specimens from Ireland this season. One influenza A (H3) isolate was antigenically similar to A/Hong Kong/4443/05. One influenza B isolate was closely related to the recent B/Victoria-lineage reference virus B/Hong Kong/45/05.

Table 1: Total number of sentinel and non-sentinel* respiratory specimens and positive results for week 20 2006 and the 2005/2006 season to date.

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
20 2006	Sentinel	4	0	0.0	0	0	NA
	Non-Sentinel	39	0	0.0	0	0	1
	Total	43	0	0.0	0	0	1
40 2005 – 20 2006	Sentinel	378	132	34.9	64	68	NA
	Non-Sentinel	1783	36	2.0	24	12	378
	Total	2161	168	7.8	88	80	378

*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 20 2006 and the 2005/2006 season to date * 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.

	Week 20 2006			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	0	0	0	41	31	72
HSE-MA	0	0	0	2	3	5
HSE-MWA	0	0	0	7	7	14
HSE-NEA	0	0	0	8	4	12
HSE-NWA	0	0	0	7	4	11
HSE-SEA	0	0	0	11	14	25
HSE-SA	0	0	0	10	8	18
HSE-WA	0	0	0	2	9	11
Total	0	0	0	88	80	168

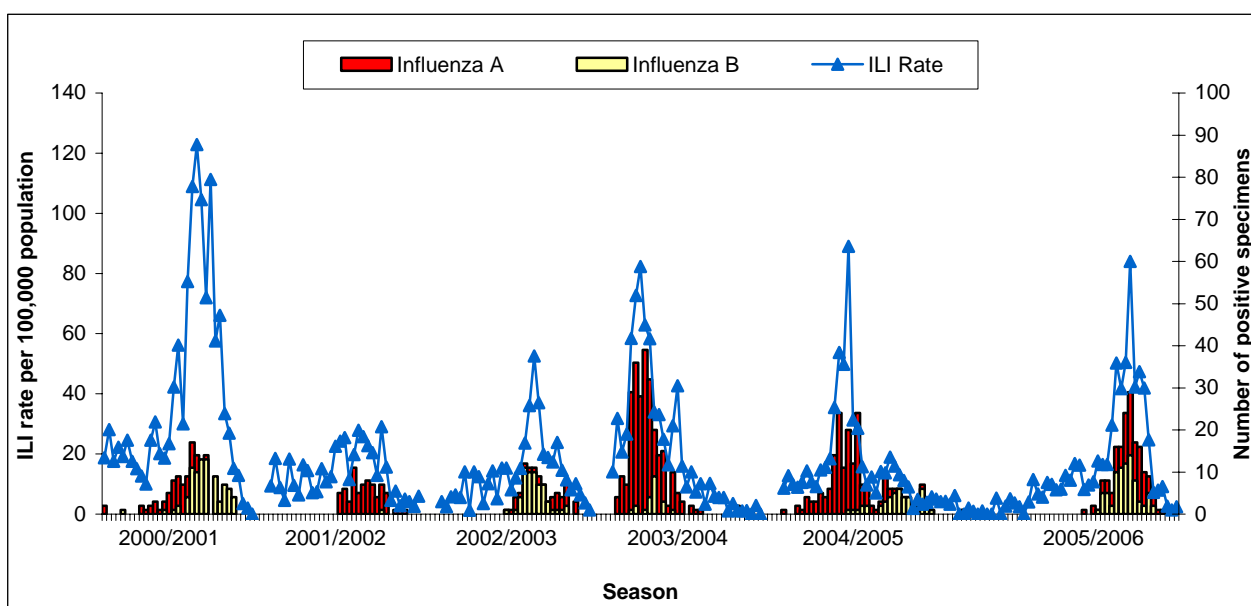


Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

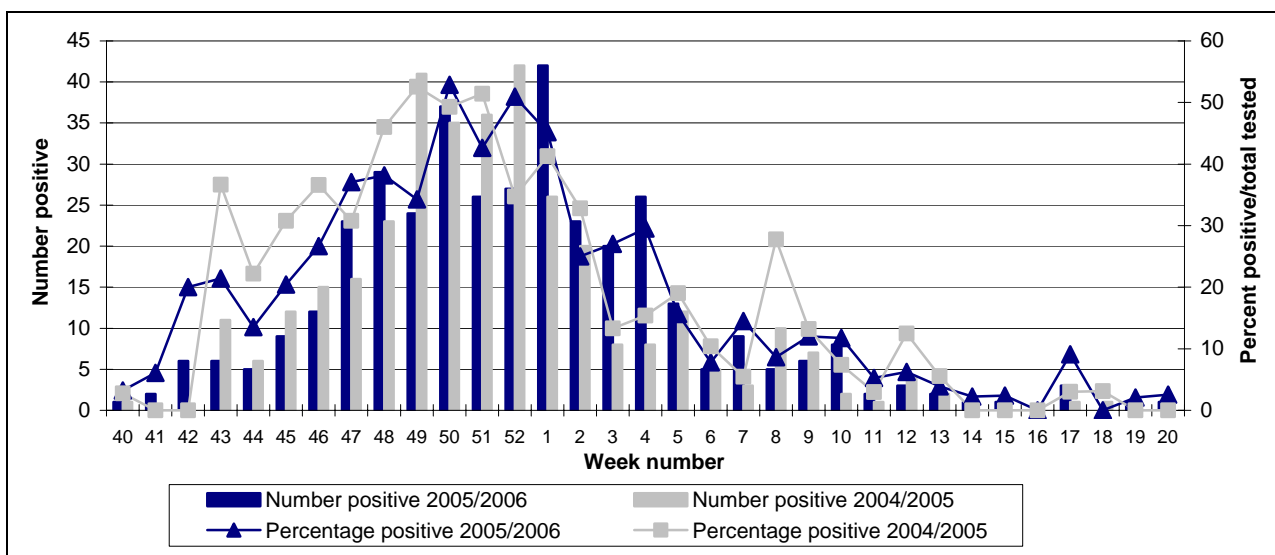


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2004/2005 influenza seasons.

Weekly Influenza Notifications

During week 19 2006, two influenza A cases (one from HSE-MWA and one from HSE-SA) and one influenza B case from HSE-SEA were notified to HPSC. It should be noted that influenza notifications reported through the weekly notification system may also be reported by the NVRL (table 1). 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.

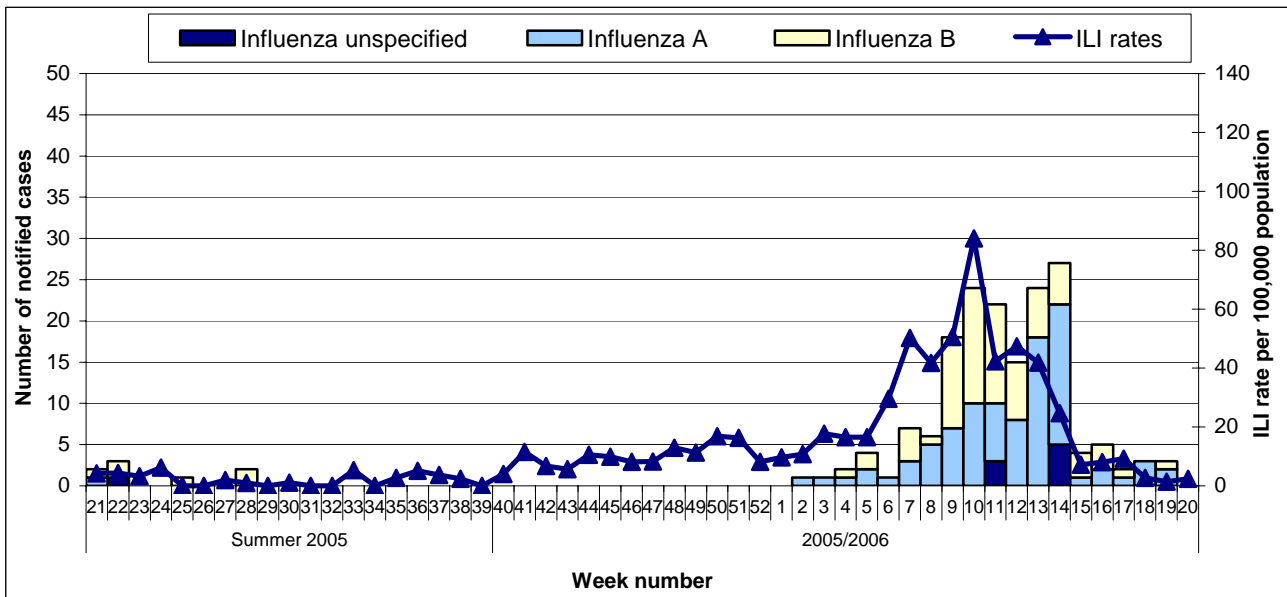


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2005 and the 2005/2006 influenza season. *Notification data are provisional and were extracted from [CIDR](#) on the 17/05/2006 at 03:25 GMT.

Mortality Data

Only one registered death has been attributed to influenza and reported to HPSC this season.

Outbreak Reports

Four ILI/influenza outbreaks have been reported to HPSC to date this season, three outbreaks occurred in schools and one in a nursing home.

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. No significant increases in admissions to sentinel hospitals were reported to HPSC during week 19 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. During week 19 2006, sentinel secondary schools in HSE-ER, -MA, -NEA and -SEA reported increased absenteeism. A sentinel primary school in HSE-WA reported increased absenteeism during week 19 2006. During week 20 2006, increased absenteeism was reported in a sentinel secondary school in HSE-MA.

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, NVRL laboratory confirmed influenza cases and influenza/ILI outbreaks. During week 19 2006, sporadic influenza activity was reported in HSE-SEA; all other HSE-Health Areas reported no influenza activity (figure 6).

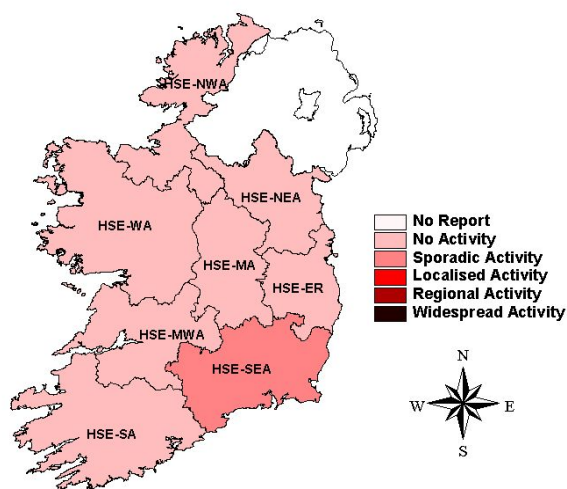


Figure 6: Map of influenza activity by HSE-Health Area during week 19 2006

Influenza Activity in Northern Ireland

The combined ILI and clinical influenza consultation rate in Northern Ireland during week 20 2006 was 6.4 per 100,000 population, a decrease from the rate of 13.3 per 100,000 in week 19 2006. No influenza virus detections were reported in Northern Ireland during week 20 2006. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

The United Kingdom experienced the sixth consecutive year of low levels of influenza activity during the 2005/2006 season. Clinical activity started to increase late, from week 5 2006 (early February) and peaked at 43.7 per 100,000 in week 7 2006 (mid-February). In England, Wales and Scotland rates for influenza and ILI remained close to or below baseline levels during the whole season. Virological activity remained at low levels in England and Wales. Influenza B virus was identified as the dominant influenza virus with 75.5% detections being influenza B between week 40 2005 and 16 2006, and the circulating strain was mostly B/Hong Kong/330/2001-like virus. This influenza B dominant season was also seen in most European countries participating in the European Influenza Surveillance Scheme. Large numbers of school outbreaks of ILI (689 out of 708 outbreaks) were reported from across England and Wales, mainly during January and February 2006. Seventy of these outbreaks were confirmed influenza B virus infections. Other establishments (such as nursing homes) also reported influenza B outbreaks. Many school outbreaks were reported with co-infections, mainly norovirus, diarrhoea and vomiting. A small number of influenza A outbreaks in nursing homes were also reported towards the end of the season. http://www.hpa.org.uk/infections/topics_az/influenza/seasonal/flureports0506.htm

Influenza Activity in Europe

During the 2005/2006-influenza season, influenza activity was moderate in the majority of countries in Europe. A number of countries – Austria, Germany, Hungary, Portugal, Scotland, Romania and Wales – reported very low levels of clinical influenza activity this season. Influenza B virus was the dominant virus in Europe this season, accounting for 60% of total detections and represented the majority of positive specimens in two-thirds of the countries. Based on (sub)typing data of all influenza virus detections from sentinel and non-sentinel sources up to week 16 2006 (N=9671), 5787 (60%) were influenza B and 3884 (40%) were influenza A. Of the total influenza A virus detections (N=3884), 2508 (65%) were influenza A (unsubtyped), 518 (13%) were A(H1) and 858 (22%) were A(H3). Of all 9671 influenza virus detections up to week 16 2006, 2195 have been antigenically and/or genetically characterised: 368 were A/New Caledonia/20/99 (H1N1)-like, 296 were A/California/7/2004 (H3N2)-like, 1386 were B/Malaysia/2506/2004-like (B/Victoria/2/87-lineage) and 145 were B/Jiangsu/10/2003-like. <http://www.eiss.org/index.cgi>

Influenza Activity in Canada

Influenza activity in Canada has continued to decline since the beginning of April and was at low levels in week 19 2006. In week 19 2006, the ILI consultation rate was calculated as 7 per 1000 patient visits, which is within the expected range for this week. In week 19 2006, 102 (6%) of the specimens tested for influenza viruses were positive: 74 (73%) A and 28 (27%) B. In the current season to date, a mix of influenza A (60%) and influenza B (40%) viruses have been detected in Canada. To date, 100% of the influenza A strains characterised have matched those included in the 2005/2006 Canadian vaccine. However, 99% of the influenza B strains characterised belong to the B/Victoria/02/1987 lineage and are not covered by this year's vaccine. <http://www.phac-aspc.gc.ca/fluwatch/index.html>

Influenza Activity in the United States

Influenza activity in the United States peaked in early March and continued at low levels during week 19 2006. The proportion of patient visits to sentinel providers for ILI was below the national baseline. The proportion of deaths attributed to pneumonia and influenza was below the threshold level. One state reported regional influenza activity; one state reported local influenza activity; 29 states, the District of Columbia, New York City, and Puerto Rico reported sporadic influenza activity; and 19 states reported no activity. During week 19 2006, WHO and NREVSS laboratories reported 1,097 specimens tested for influenza viruses, 92 (8.4%) of which were positive: 35 A unsubtype and 57 B viruses. CDC has antigenically characterised 819 influenza viruses [503 A (H3N2), 88 A (H1), and 228 B] this season. Of the 503 A (H3N2) viruses, 381 (75.7%) were characterised as A/California/07/2004-like, and 122 (24.3%) viruses showed reduced titres with antisera produced against A/California/07/2004. Of the 122 low-reacting viruses, 96 were tested with antisera produced against A/Wisconsin/67/2005 and 70 are A/Wisconsin-like. The haemagglutinin proteins of 85 (96.6%) influenza A (H1) viruses were antigenically similar to the haemagglutinin of the vaccine strain A/New Caledonia/20/99, and 3 (3.4%) showed reduced titres with antisera produced against A/New Caledonia/20/99. Fifty-two (22.8%) of the influenza B viruses that have been characterised belong to the B/Yamagata lineage. Eight were similar to B/Shanghai/361/2002, 43 were characterised as B/Florida/07/2004-like, and one showed reduced titres with antisera produced against both B/Shanghai/361/2002 and B/Florida/07/2004. B/Florida/07/2004 is a minor antigenic variant of B/Shanghai/361/2002. One hundred seventy-six (77.2%) influenza B viruses were identified as belonging to the B/Victoria lineage. One hundred seventy-five were similar to B/Ohio/1/2005, and one showed reduced titres with antisera produced against B/Ohio/1/2005. <http://www.cdc.gov/flu/>

Influenza Activity Worldwide

During week 19 2006, sporadic influenza activity was reported in Chile (4 A unsubtype), China (43 A H1, 10 A unsubtype & 16 B), South Africa and Tunisia (1 A H1). No influenza activity was reported in the Philippines during week 19 2006. <http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of May 23rd 2006, there have been 218 confirmed human cases of influenza A (H5N1) and 124 fatalities in ten different countries (Azerbaijan, Cambodia, China, Djibouti, Egypt, Indonesia, Iraq, Thailand, Turkey and Vietnam) reported to the WHO. The World Organisation for Animal Health (OIE) and the European Centre for Disease Prevention and Control (ECDC) have reported influenza A (H5) in avian species in 13 EU countries: Austria, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Poland, Slovakia, Slovenia, Sweden and United Kingdom. Developments concerning influenza A (H5N1), particularly in Europe, are being followed carefully by HPSC.

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 A/New York/55/2004 is available as a vaccine virus

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

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

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