

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 16 2006 (17th to 23rd April 2006)

Summary

During week 16 2006, influenza activity remained at low levels in Ireland, with ten influenza-like illness (ILI) cases reported by sentinel GPs. No positive influenza specimens were detected by the NVRL during week 16 2006. Influenza activity peaked for the 2005/2006 season during week 10 2006. The latest information on avian influenza is available on the [HPSC website](#).

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 16 2006, 10 ILI cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 7.8 per 100,000 population, remaining unchanged from the updated rate of 7.5 per 100,000 during week 15 2006 (figure 1).

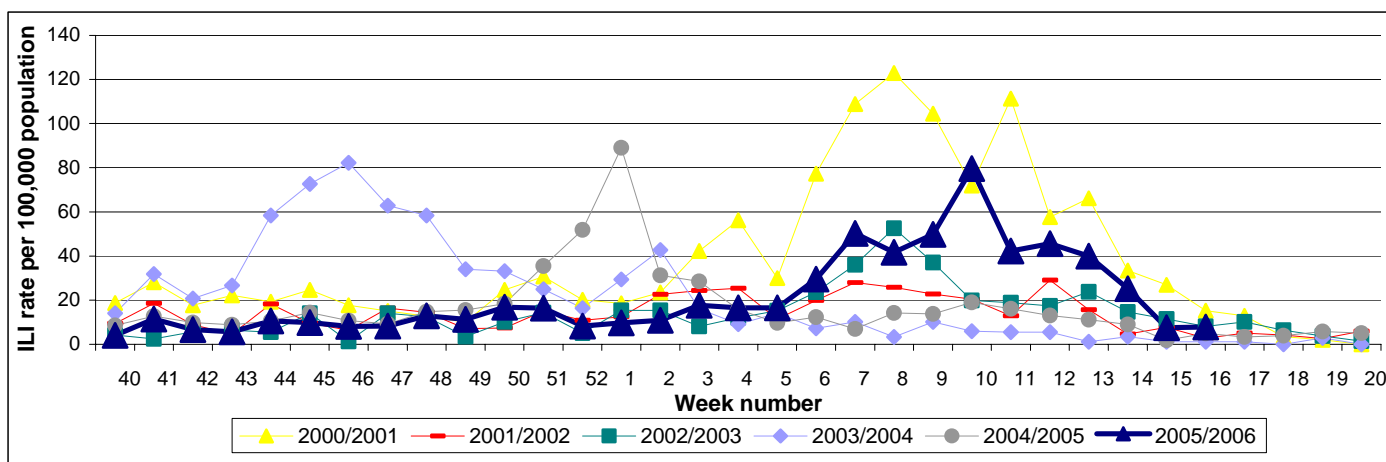


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005 & 2005/2006 influenza seasons.

Results (continued)

During week 16 2006, ILI rates peaked in those age 65 years or older, with two ILI cases reported, corresponding to an ILI consultation rate of 14.1 per 100,000 population. No ILI cases were reported in 0-4 or 5-14 year olds. Eight ILI cases were reported in those aged 15-64 years (9.2 per 100,000 population) (figure 2). Thirty-six of 46 (78.3%) sentinel general practices reported during week 16 2006, with 10 reporting ILI cases.

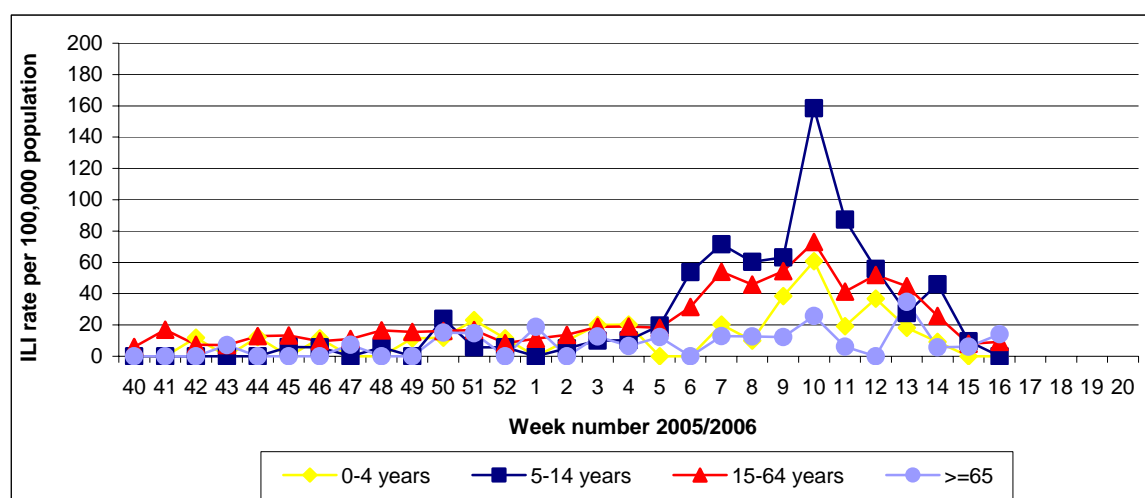


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2005/2006 influenza season. *Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is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

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested five specimens taken by sentinel GPs during week 16 2006, none were positive for influenza virus. The NVRL also tested 33 non-sentinel specimens during week 16 2006, mainly from hospitalised paediatric cases, none were positive for influenza virus. To date this season, the NVRL has detected 166 positive influenza specimens: 86 influenza A (32 A H3 & 54 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. No non-sentinel specimens tested positive for respiratory syncytial virus (RSV) during week 16 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 16 2006 and the 2005/2006 season to date.

| Week Number | Specimen Type | Total Specimens | No. Influenza Positive | % Influenza Positive | Influenza A | Influenza B | RSV |
|--------------------------|---------------|-----------------|------------------------|----------------------|-------------|-------------|------------|
| 16 2006 | Sentinel | 5 | 0 | 0.0 | 0 | 0 | NA |
| | Non-Sentinel | 33 | 0 | 0.0 | 0 | 0 | 0 |
| | Total | 38 | 0 | 0.0 | 0 | 0 | 0 |
| 40 2005 – 16 2006 | Sentinel | 366 | 130 | 35.5 | 62 | 68 | NA |
| | Non-Sentinel | 1629 | 36 | 2.2 | 24 | 12 | 373 |
| | Total | 1995 | 166 | 8.3 | 86 | 80 | 373 |

*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 16 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 16 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 | 8 | 8 | 16 |
| HSE-WA | 0 | 0 | 0 | 2 | 9 | 11 |
| Total | 0 | 0 | 0 | 86 | 80 | 166 |

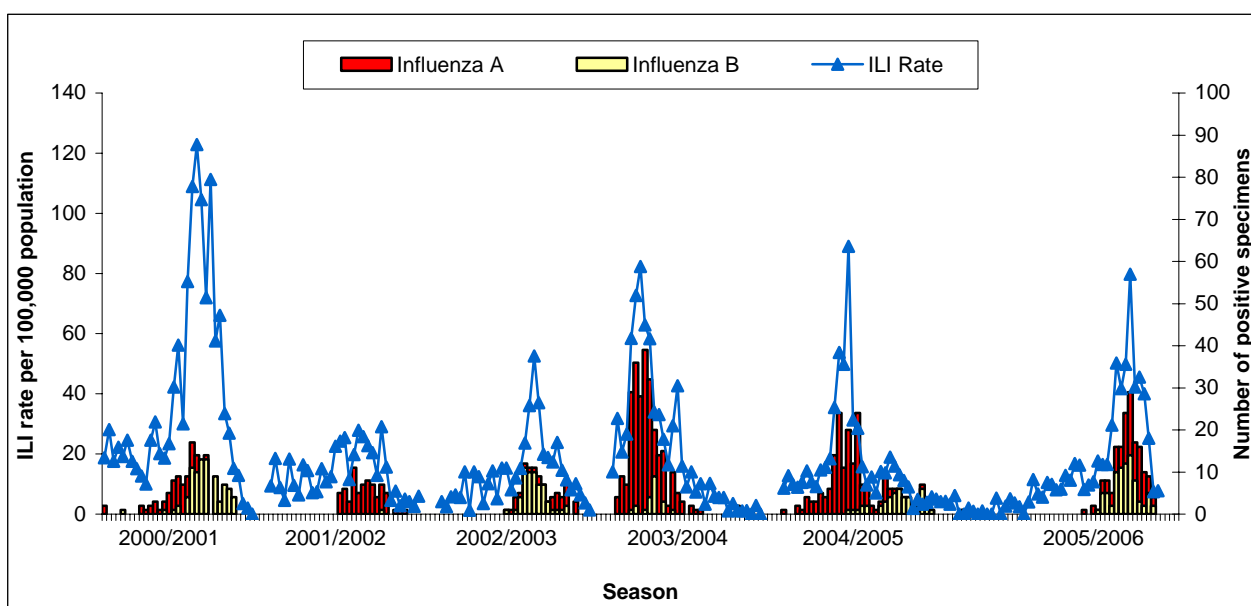


Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

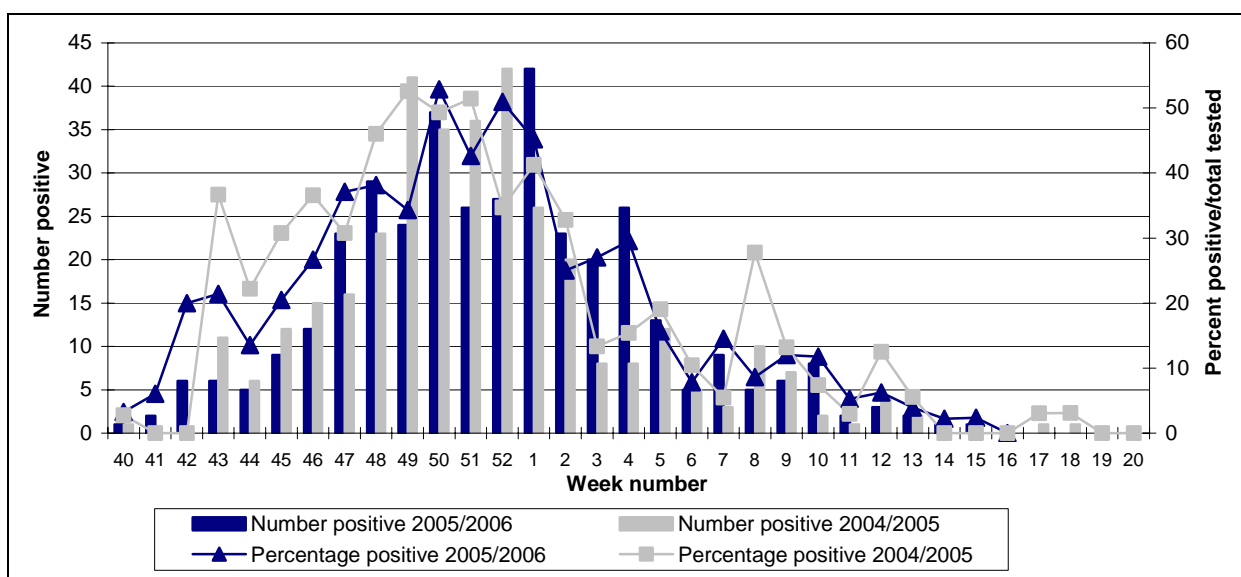


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2004/2005 influenza seasons.

Weekly Influenza Notifications

During week 16 2006, two influenza A cases (one from HSE-NWA and one from HSE-SA) 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.

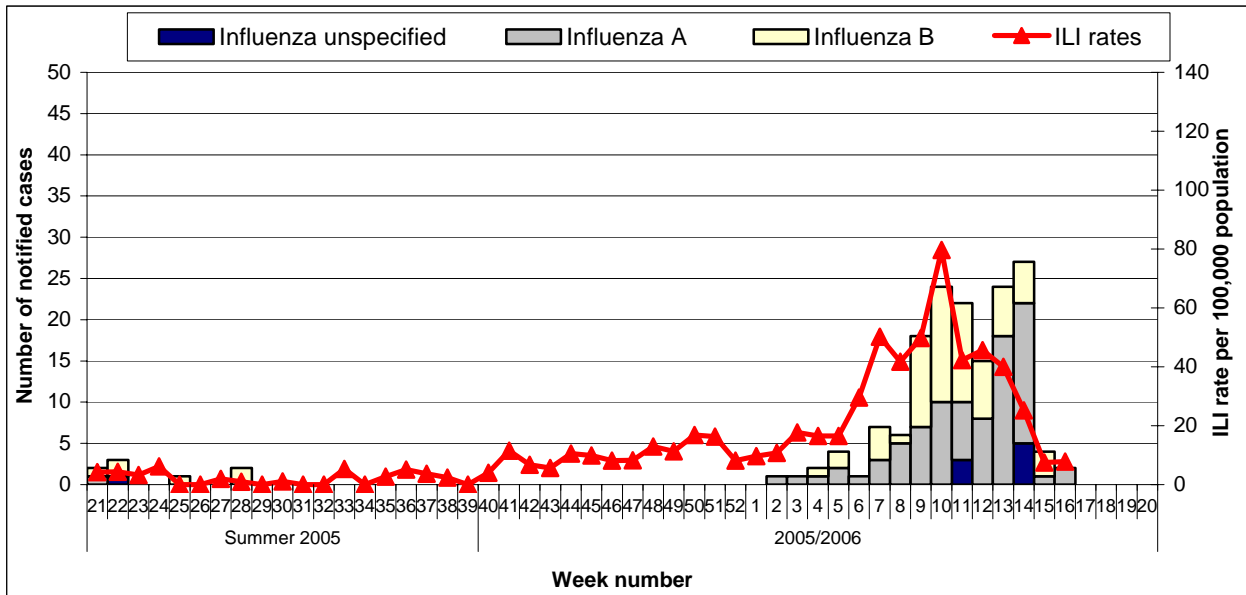


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2005 and the 2005/2006 influenza season. *Notification data are provisional and were extracted from [CIDR](#) on the 26/04/2006 at 11:33 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. There were significant increases in respiratory admissions in sentinel hospitals in HSE-ER and -MA during week 15 2006. Total hospital admissions also increased in a sentinel hospital in HSE-SEA during week 15 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. Sentinel school data was not available for weeks 15 and 16 2006, due to school Easter holidays.

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. Sporadic influenza activity was reported in HSE-ER, -NEA, -NWA, -SA and -WA during week 15 2006. No influenza activity was reported in three HSE-Health Areas (HSE-MA, -MWA, and -SEA) during week 15 2006 (figure 6).

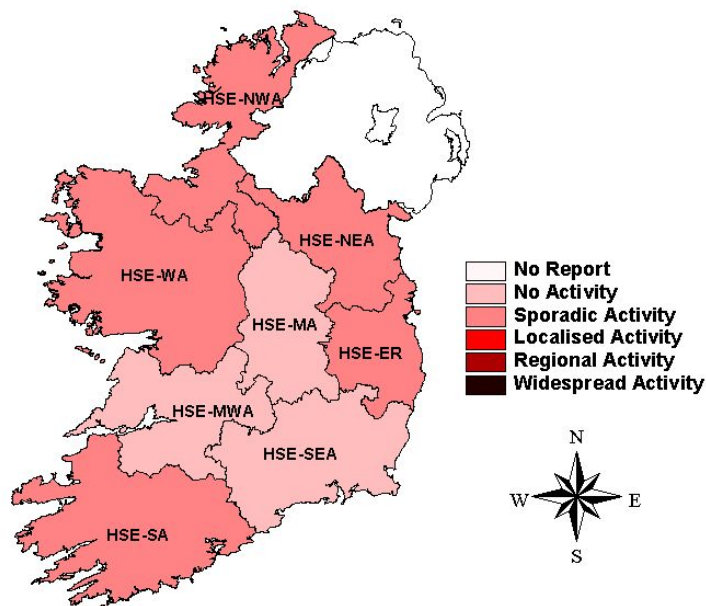


Figure 6: Map of influenza activity by HSE-Health Area during week 15 2006

Influenza Activity in Northern Ireland

The combined ILI and clinical influenza consultation rate in Northern Ireland during week 16 2006 was 34.2 per 100,000 population, a decrease from the rate of 47.9 per 100,000 in week 15 2006. One influenza A and one influenza B viruses were detected during week 15 2006 and no influenza viruses were detected during week 16 2006. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

Data for week 15 and 16 2006 was not available at the time of publication of this report. ILI consultation rates decreased from 23.9 per 100,000 population in week 13 2006 to 15.9 per 100,000 in week 14 2006 according to data reported from 81 GP practices in England and Wales representing a population of 765,000. The ILI rates remained below 30 per 100,000 population for all age groups. GP consultation rates for ILI in Scotland remained low at 15.7 per 100,000 in week 13 2006 and 15.0 per 100,000 in week 14 2006. Consultation rates for influenza in Wales remained similarly low at 2.2 per 100,000 in week 14 2006 and 1.3 per 100,000 in week 13 2006. Two samples in week 13 2006 and three samples in week 14 2006 referred to the Centre for Infections Respiratory Virus Unit (RVU) from community sources tested positive for influenza B, respectively, and 12 and six samples for influenza A, respectively. Since week 40 2005 (week ending 09/10/2005) 480 influenza viruses have been further characterised by RVU; 45 influenza A/New Caledonia/20/1999 (H1N1)-like, 38 influenza A/California/7/2004 (H3N2)-like (two of which are influenza A/Wellington/1/04 (H3N2)-like); 392 influenza B viruses antigenically similar to influenza B/Hong Kong/330/2001 and five influenza B/Shanghai/361/2002-like viruses. http://www.hpa.org.uk/infections/topics_az/influenza/seasonal/flureports0506.htm

Influenza Activity in Europe

During the 2005/2006 season, influenza activity has been moderate in the majority of countries in Europe and has further decreased or returned to baseline levels in week 15 2006. Geographically, six countries reported local influenza activity, 15 countries sporadic activity and five countries no activity during week 15 2006. The total number of respiratory specimens collected by sentinel physicians in week 15 2006 was 532, 127 (24%) of which were positive for influenza virus: 66 (52%) influenza B virus and 61 (48%) influenza A virus. In addition 118 non-sentinel specimens tested positive for influenza virus, of which 40 (34%) were influenza B and 78 (66%) influenza A. Based on (sub)typing data of all influenza virus detections from sentinel and non-sentinel sources up to week 15

2006 (N=9248), 5679 (61%) were influenza B and 3569 (39%) were influenza A. Of the total influenza A virus detections (N=3569), 2317 (65%) were A (unsubtyped), 469 (13%) were A(H1) and 783 (22%) were A(H3) [438 were A H3N2]. Of all 9248 influenza virus detections up to week 15 2006, 1939 have been antigenically and/or genetically characterised: 330 were A/New Caledonia/20/99 (H1N1)-like, 238 were A/California/7/2004 (H3N2)-like, 1235 were B/Malaysia/2506/2004-like (B/Victoria/2/87-lineage) and 136 were B/Jiangsu/10/2003-like.

<http://www.eiss.org/index.cgi>

Influenza Activity in Canada

During week 15, overall influenza activity in Canada continued to decrease, with all indicators having declined from previous weeks. Of the regions reporting widespread and localised activity, 50% were from Ontario. In week 15, the ILI consultation rate decreased and was calculated as 26 per 1000 patient visits, which is within the expected range for this week. In week 15, 491 (17%) of the specimens tested for influenza viruses were positive. In the current season to date, a mix of influenza A (58%) and influenza B (42%) viruses has been detected in Canada. It appears that the peak period for influenza activity in Canada for the 2005/2006 season has passed and influenza activity is expected to decline for the remainder of the season. To date, 100% of the influenza A strains characterised have matched those included in the 2005/2006 Canadian vaccine. However, 98% 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

During week 15 2006, influenza activity continued to decrease in the United States. 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 baseline level. Five states reported widespread influenza activity; five states reported regional influenza activity; 16 states, New York City, and the District of Columbia reported local influenza activity; 23 states reported sporadic influenza activity; and one state reported no activity. During week 15, WHO and NREVSS laboratories reported 1,795 specimens tested for influenza viruses, 221 (12.3%) of which were positive: 25 A (H3N2), 18 A (H1N1), 60 A (unsubtyped) and 118 B viruses. CDC has antigenically characterised 624 influenza viruses [453 influenza A (H3N2), 43 influenza A (H1), and 128 influenza B viruses] this season. Of the 453 A (H3N2) viruses, 352 (77.7%) were characterised as A/California/07/2004-like, and 101 (22.3%) viruses showed reduced titers with antisera produced against A/California/07/2004. Of the 101 low-reacting viruses, 75 were tested with antisera produced against A/Wisconsin/67/2005 and 59 are A/Wisconsin-like. The hemagglutinin proteins of 40 (93.0%) influenza A (H1) viruses were antigenically similar to the hemagglutinin of the vaccine strain A/New Caledonia/20/99, and 3 (7.0%) showed reduced titers with antisera produced against A/New Caledonia/20/99. Forty (31.3%) of the influenza B viruses that have been characterised belong to the B/Yamagata lineage. Five were similar to B/Shanghai/361/2002, 34 were characterised as B/Florida/07/2004-like, and one showed reduced titers with antisera produced against both B/Shanghai/361/2002 and B/Florida/07/2004. Eighty-eight (68.8%) influenza B viruses were identified as belonging to the B/Victoria lineage and all were similar to B/Ohio/1/2005. <http://www.cdc.gov/flu/>

Influenza Activity Worldwide

During week 15 2006, regional influenza activity was reported in Israel (1 A H1 & 7 B), sporadic activity was reported in China (24 A H1, 1 A H3, 9 A unsubtyped & 21 B) and South Africa (1 A unsubtyped) and no activity was reported in Argentina and Chile. <http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of April 21st 2006, there have been 204 confirmed human cases of influenza A (H5N1) and 113 fatalities in nine different countries (Azerbaijan, Cambodia, China, 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