# 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 18 2006 (1st to 7th May 2006)


## Summary

During week 18 2006, influenza activity remained at low levels in Ireland, with 3 influenza-like illness (ILI) cases reported by sentinel GPs. No positive influenza specimens were detected by the NVRL during week 18 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 $38^0$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 and hospital admissions data.

## Results

### *Clinical Data*

During week 18 2006, 3 ILI cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 2.6 per 100,000 population, a marked decrease from the updated rate of 9.2 per 100,000 during week 17 2006 (figure 1).

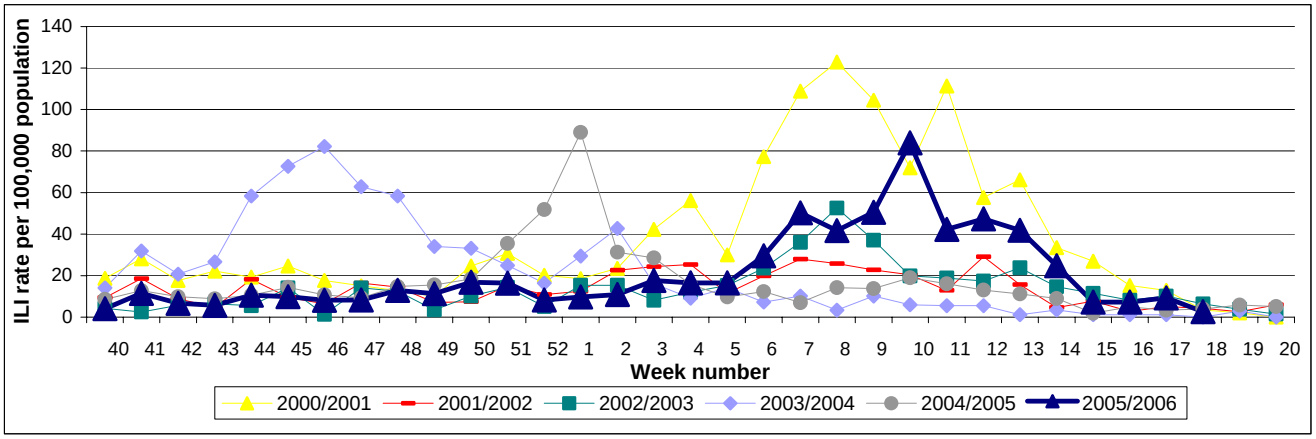


**Figure 1:** GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005 & 2005/2006 influenza seasons.

## Results (continued)

During week 18 2006, 3 ILI cases were reported in the 15-64 year age group, corresponding to an ILI consultation rate of 3.9 per 100,000 population. No ILI cases were reported in 0-4 year olds, 5-14 year olds or those aged 65 years or older (figure 2). Thirty-two of 46 (69.6%) sentinel general practices reported during week 18 2006, with two reporting ILI cases.

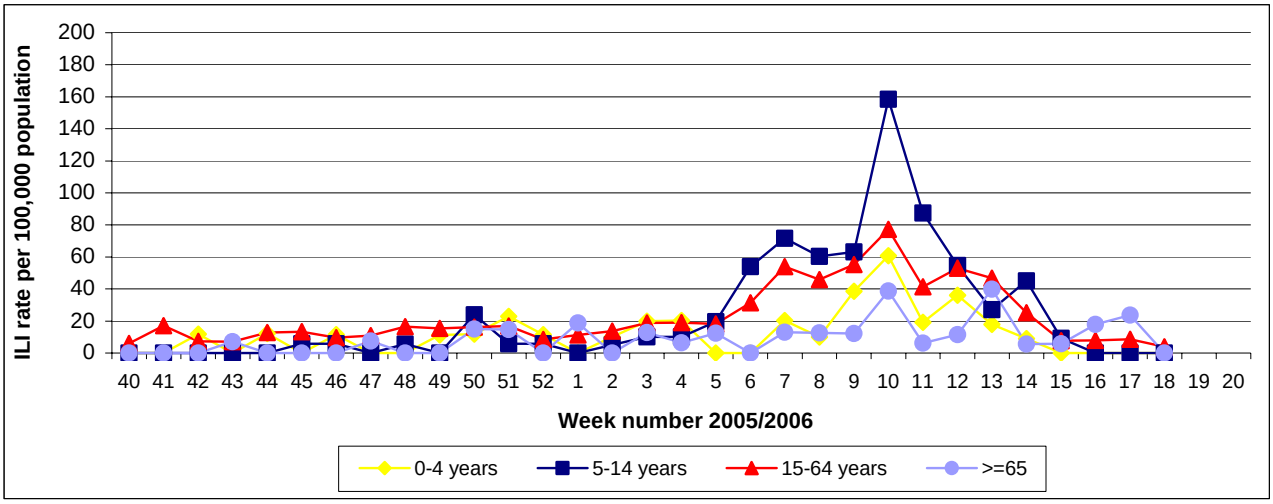


**Figure 2:** Age specific GP consultation rate* for ILI per 100,000 population by week during the 2005/2006 influenza season.
**Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices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

### *Virological Data from the National Virus Reference Laboratory (NVRL)*

The NVRL tested three specimens taken by sentinel GPs during week 18 2006, all of which were negative for influenza virus. The NVRL also tested 31 non-sentinel specimens during week 18 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 (48 A H3 & 40 A unsubtyped) 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 18 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 18 2006 and the 2005/2006 season to date.

| Week Number | Specimen Type | Total Specimens | No. Influenza Positive | % Influenza Positive | Influenza A | Influenza B | RSV |
|---|---|---|---|---|---|---|---|
| **18 2006** | Sentinel | 3 | 0 | 0.0 | 0 | 0 | NA |
| | Non-Sentinel | 31 | 0 | 0.0 | 0 | 0 | 0 |
| | **Total** | **34** | **0** | **0.0** | **0** | **0** | **0** |
| **40 2005 – 18 2006** | Sentinel | 374 | 132 | 35.3 | 64 | 68 | NA |
| | Non-Sentinel | 1694 | 36 | 2.1 | 24 | 12 | 376 |
| | **Total** | **2068** | **168** | **8.1** | **88** | **80** | **376** |

**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 18 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 18 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** |

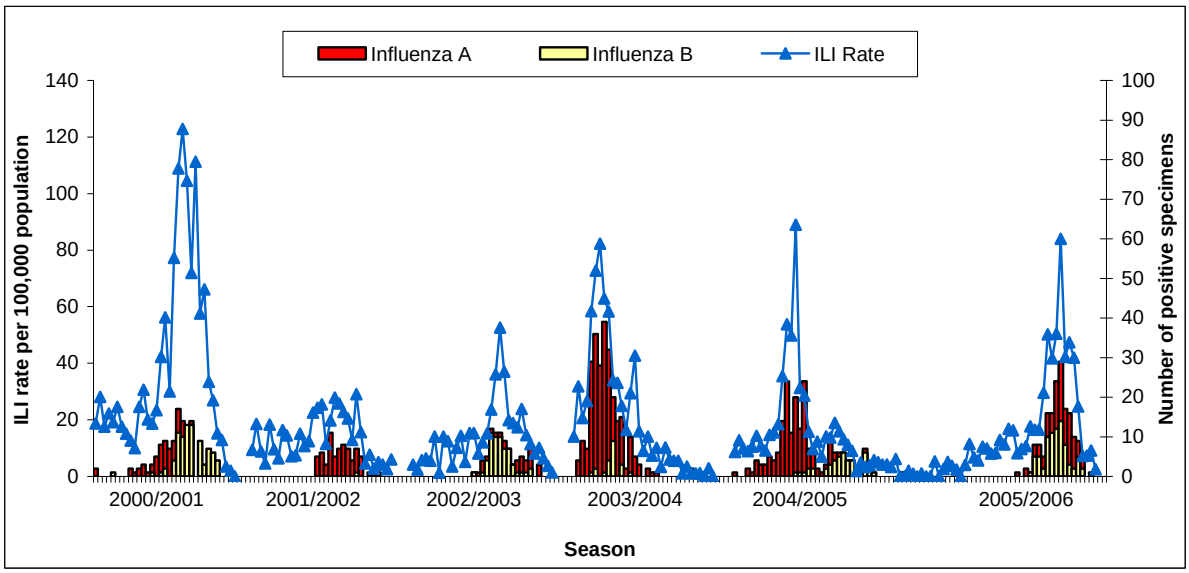


**Figure 3:** ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

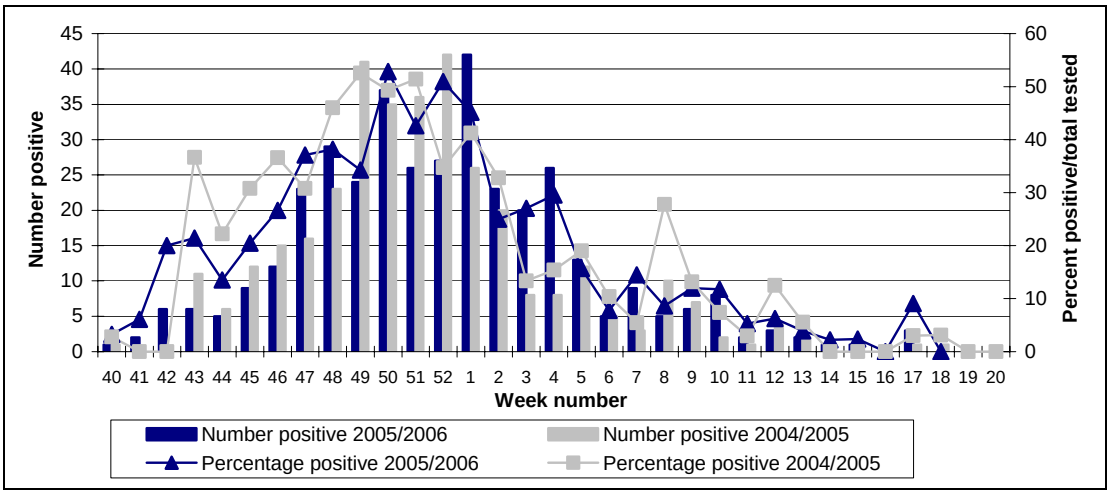


**Figure 4.** Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2004/2005 influenza seasons.

## *Weekly Influenza Notifications*

During week 18 2006, two influenza A cases were notified to HPSC, both from HSE-SA. During week 17 2006, one influenza A case from HSE-ER and one influenza B case from HSE-WA 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.

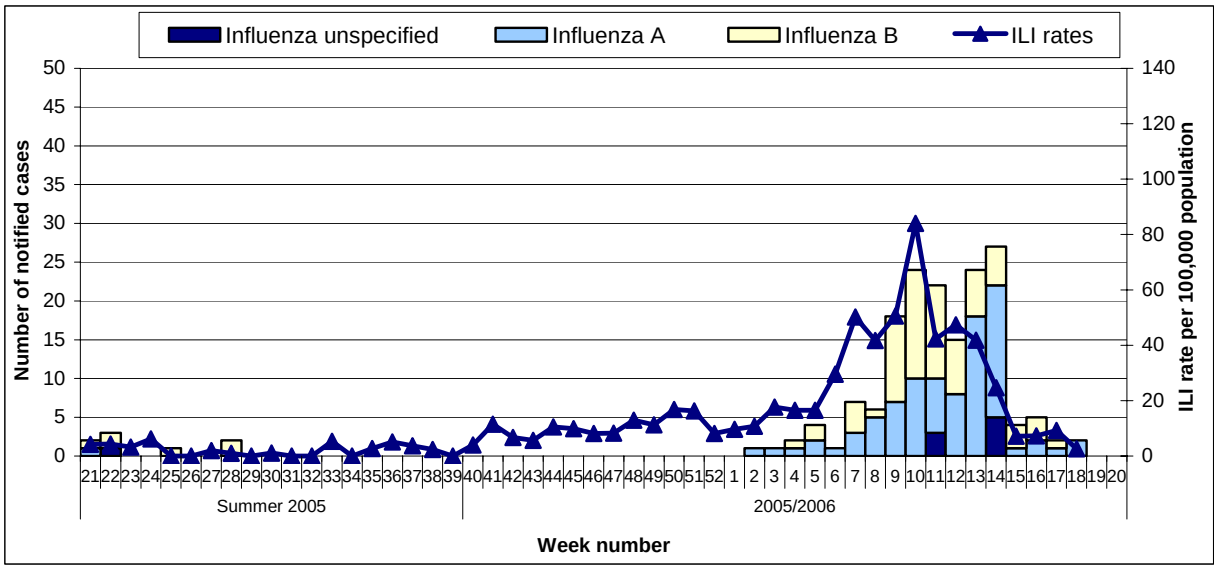


**Figure 5:** Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2005 and the 2005/2006 influenza season. **Notification data are provisional and were extracted from CIDR on the 10/05/2006 at 14:35 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. During week 17, total hospital admissions and accident and emergency admissions increased in a sentinel hospital in HSE-ER, however, this was followed by a decrease in week 18 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 17 2006, sentinel secondary schools in HSE-ER and -SEA reported increased absenteeism. During week 18 2006, sentinel secondary schools in HSE-ER and HSE-MA reported increased absenteeism.

## *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 17 2006, sporadic influenza activity was reported in six HSE-areas/region (HSE-ER, -MWA, -NEA, -SEA, -SA and -WA). No influenza activity was reported in HSE-MA and HSE-NWA during week 17 2006 (figure 6).

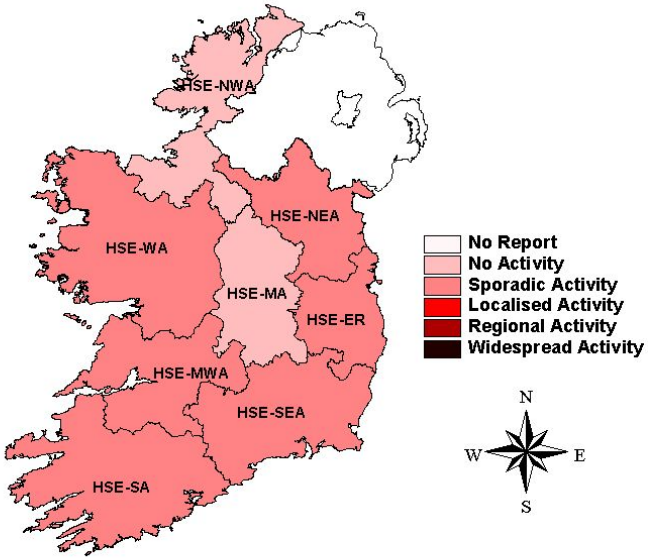


**Figure 6:** Map of influenza activity by HSE-Health Area during week 17 2006

### *Influenza Activity in Northern Ireland*

The combined ILI and clinical influenza consultation rate in Northern Ireland during week 18 2006 was 25.7 per 100,000 population, a sharp decrease from the rate of 42.5 per 100,000 in week 17 2006. Two influenza A viruses were detected during week 18 2006. A summary report of the 2005/2006 influenza season in Northern Ireland will be published in the forthcoming weeks.
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*

During week 17, influenza activity in Canada continued to decrease, with all indicators having declined from the previous weeks. As seen in week 16, 50% of the regions reporting widespread and localised activity were from Ontario. In week 17, 271 (14%) of the specimens tested for influenza viruses were positive. Of those, 208 (77%) were from Quebec and Ontario, predominantly due to influenza A. Half of the influenza B detections this week were from Quebec. In the current season to date, a mix of influenza A (60%) and influenza B (40%) viruses have been detected in Canada. In week 17, the ILI consultation rate was calculated as 12 per 1000 patient visits, which is within the expected range for this week. During week 17, nine new outbreaks were reported of which five were in long term care facilities (LTCF's). To date this season, 156 LTCF outbreaks have been reported. 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 17, influenza activity continued to decline 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. Three states reported regional influenza activity; four states and the District of Columbia reported local influenza activity; 38 states, New York City, and Puerto Rico reported sporadic influenza activity; and five states reported no activity. During week 17, WHO and NREVSS laboratories reported 1,032 specimens tested for influenza viruses, 97 (9.4%) of which were positive, 1 A (H3N2) virus, 4 A (H1N1) viruses, 25 A (unsubtyped) and 67 B viruses. CDC has antigenically characterised 663 influenza viruses [478 A (H3N2), 57 A (H1), and 128 B viruses] this season. Of the 478 A (H3N2) viruses, 362 (75.7%) were characterised as A/California/07/2004-like and 116 (24.3%) viruses showed reduced titers with antisera produced against A/California/07/2004. Of the 116 low-reacting viruses, 90 were tested with antisera produced against A/Wisconsin/67/2005 (the H3N2 component selected for the 2006-2007 vaccine), and 67 are A/Wisconsin-like. The hemagglutinin proteins of 54 (94.7%) influenza A (H1) viruses were antigenically similar to the hemagglutinin of the vaccine strain A/New Caledonia/20/99, and 3 (5.3%) 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, the recommended influenza B component for the 2005-2006 influenza vaccine, 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. B/Florida/07/2004 is a minor antigenic variant of B/Shanghai/361/2002. 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.

### *Influenza Activity Worldwide*

During week 17 2006, sporadic influenza activity was reported in China (29 A H1, 2 A H3, 4 A unsubtyped & 18 B). No influenza activity was reported in Argentina, Mongolia or Paraguay during week 17 2006. http://gamapserver.who.int/GlobalAtlas/home.asp

### *Avian Influenza*

As of May 8th 2006, there have been 207 confirmed human cases of influenza A (H5N1) and 115 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

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- an A/Wisconsin/67/2005 (H3N2)-like virus[a;]
- a B/Malaysia/2506/2004-like virus[b]

Candidate vaccine viruses include:
[a]A/Wisconsin/67/2005 (H3N2) and A/Hiroshima/52/2005
[b]B/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

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 Ms. Sarah Jackson, Dr. Lisa Domegan & Dr. Joan O'Donnell, HPSC**